Coronary Angiography & Intervention

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The Packaged Catheterization

- The following services are bundled:
  - Catheter placement
  - Intra-cardiac pressure measurement
  - Intra-vascular pressure measurement
  - Road mapping angiography
  - Closure device placement (including angiography)
  - Intra-coronary medication administration
    - Nitroglycerin
    - Thrombolysis
  - Contrast injections (coronary, LA, LV, & grafts)
  - Imaging supervision, interpretation, and report
  - Temporary pacing is included in caths & interventions
  - Obtaining blood samples
  - Calculating cardiac output
  - Embolic protection
Femoral v Radial Access
(no coding difference)

• Traditionally, heart catheterizations were performed primarily via femoral artery access.
• Recently, the radial artery has become common:
  – readily accessible (even in obese individuals)
  – preferred site of access by many patients
  – associated with a lower incidence of hemorrhage
  – allows earlier ambulation
• The access site does not impact billing.

Most Common Procedures: LHC

• 93458 - Catheter placement in coronary artery(s) for coronary angiography, including intraprocedural injection(s) for coronary angiography, imaging supervision and interpretation; with left heart catheterization including intraprocedural injection(s) for left ventriculography, when performed
• 93459 - Catheter placement in coronary artery(s) for coronary angiography, including intraprocedural injection(s) for coronary angiography, imaging supervision and interpretation; with left heart catheterization including intraprocedural injection(s) for left ventriculography, when performed, catheter placement(s) in bypass graft(s) (internal mammary, free arterial, venous grafts) with bypass graft angiography
Vascular Studies Without Heart Cath

- **93454** Catheter placement in coronary artery(s) for coronary angiography, including intraprocedural injection(s) for coronary angiography, imaging supervision and interpretation
- **93455** Catheter placement in coronary artery(s) for coronary angiography, including intraprocedural injection(s) for coronary angiography, imaging supervision and interpretation; with catheter placement(s) in bypass graft(s) (internal mammary, free arterial, venous grafts) including intraprocedural injection(s) for bypass graft angiography

Heart Caths without Vascular Angio

- These codes do not apply if the doctor performs vascular injections; those caths must be reported with code 93454 and higher.
  - Right heart cath (stand alone) – 93451
  - Left heart cath (+/- LV Gram) - 93452
  - Combination right/left heart cath – 93453
    • 93453 includes the work of 93451 and 93452
  - (+) 93462 – transseptal puncture through intact septum
    • Add 93462 on claim with: 93452, 93453, 93458, 93459, 93460, 93461
Additional Procedures

- 93503 - Insertion and placement of flow directed catheter (eg, Swan-Ganz) for monitoring purposes
  - Included in right heart cath codes
  - Only reported when catheter is inserted and left in for extended monitoring.
- 93505 - Endomyocardial biopsy
- (+) 93463 – Pharmacologic agent administration
  - Report with codes 93451-93453, 93456-93461, 93530-93533, 93580, 93581
  - Don’t report with interventional codes
- (+) 93464 – Physiologic exercise study
  - Report with codes 93451-93453, 93456-93461, 93530-93533

Combination Cath + Coronary

- 93460 Catheter placement in coronary artery(s) for coronary angiography, including intraprocedural injection(s) for coronary angiography, imaging supervision and interpretation; with right and left heart catheterization including intraprocedural injection(s) for left ventriculography, when performed
- Right Heart Cath Plus Coronary - 93456
- Right Heart Cath Plus Coronary & Bypass 93457
- RHC + LHC + coronary + grafts/conduits 93461
Congenital Heart Catheterization

- Catheterization:
  - 93530 - Right heart catheterization
  - 93531 - Combined right heart catheterization and retrograde left heart catheterization
  - 93532 - Combined right heart catheterization and transseptal left heart catheterization through intact septum with or without retrograde left heart catheterization for congenital cardiac anomalies
  - 93533 - Combined right heart catheterization and transseptal left heart catheterization through existing septal opening, with or without retrograde left heart catheterization.

- Contrast Injection and Interpretation (reported additionally)
  - 93563 - Selective coronary angiography during congenital heart catheterization
  - 93564 - Selective opacification of aortocoronary venous or arterial bypass graft(s)… whether native or used for bypass to one or more coronary arteries
  - 93565 - Selective left ventricular or left atrial angiography

- Injection codes may only be reported one time per catheterization.

Additional Imaging Services

- Aortic root +93567
  - Not reported if done to localize venous bypass grafts.

- Thoracic or abdominal aortography
  - 75605 - Aortography, thoracic, by serialography, radiological supervision and interpretation
  - 75625 - Aortography, abdominal, by serialography, radiological supervision and interpretation

- Non-selective iliacs
  - G0278 – Iliac artery angiography at time of heart cath (includes cath placement, injection, S&I)

- Right atrium and/or right ventricle +93566

- Pulmonary (artery or vein) +93568
  - “Use 93568 with appropriate right heart catheterization code”
  - Only report injection codes one time per catheterization
Intravascular Ultrasound (IVUS)

- +92978 – IVUS, initial vessel
- +92979 – IVUS, each additional vessel
- Use 26 modifier if in hospital/facility

FFR/CFR/IFR

- “Data have conclusively shown that physiologic assessment of intermediate lesions is far more reliable in guiding intervention and leads to better outcomes than a simple angiographic assessment alone.”
  - Cath Lab Digest (Volume 22 - Issue 12 - December, 2014)
- Fractional flow reserve/coronary flow reserve
- Instant wave-Free Ratio (IFR)
  - A software modality used in addition to FFR/CFR
  - Removes need for stress agent for many patients:
    - Vasodilator/Stress agent
    - Patients may not tolerate this well
    - Additional expense for facility
CORONARY/FRACTIONAL FLOW RESERVE (CFR/FFR)

+93571 – Intravascular Doppler velocity and/or pressure derived coronary flow reserve measurement (coronary vessel or graft) during coronary angiography including pharmacologically induced stress; initial vessel
+93572 – each additional vessel

Instant wave-Free Ratio (IFR)

• “The preponderance of the work associated with the Volcano product is similar enough to be considered performing an FFR study. Therefore, the existing codes are applicable - however, as the existing codes specifically state that the work of pharmacological induced stress is included, for those cases not involving pharmacological induced stress, modifier -52, signifying a “reduced level” of service has been provided is to be appended to the applicable existing FFR code(s) (93571, 93572).”
  – RESOLVE clinical trial – 2012
**AMI & CTO Interventions**

- **Acute MI (in any vessel)**
  - Report 92941 for each vessel, any intervention: PTA, PTE, or Stent

- **CTO (in any vessel)**
  - 92943 for initial CTO intervention (PTA/PTE/Stent)
  - 92944 for each additional

* “any vessel” includes major coronary arteries, branches, & bypass grafts

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**AMI/CTO Definition**

- **CTO**: chronic total occlusion:
  - “no antegrade flow through the true lumen”
  - Plus, additional evidence of CTO:
    - Antegrade bridging collaterals present
    - Calcification at the occlusion site
    - No AMI attributable to the lesion
  - Initial CTO Intervention – 92943
  - Additional CTO – 92944

- **AMI**: Acute Myocardial Infarction
  - STEMI & some NSTEMI
  - Occlusion with dye staining at the site consistent with fresh thrombus

  - According to the AMA, the MI must be in the “acute phase” in order to use 92941
  - According to ACC, 90 minutes from presentation to balloon is a guideline but not a black and white rule.
  - Report 92941 for each vessel, any intervention: PTA, PTE, or Stent

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CPT Assistant: AMI

Emergent coronary angiography and PCI are performed. For example, once the diagnosis of acute myocardial infarction is recognized, the patient is brought urgently to the laboratory for treatment during the normal daytime schedule for the catheterization laboratory, or during off-hours, the catheterization laboratory is activated to treat the patient urgently.

PCI is performed on a target lesion that is totally (100%, thrombolysis in myocardial infarction (TIMI) grade flow of zero) or sub-totally occluded.

For the purposes of PCI coding, the following scenarios do not fulfill the designation requirement of "during acute myocardial infarction," even if there is emergent activation of the catheterization laboratory.

1. Noncardiac chest pain
2. Unstable angina
3. Non-ST elevation myocardial infarction, unless there are ongoing symptoms prompting emergent activation of the catheterization laboratory with demonstration of a subtotal or total coronary occlusion of the culprit vessel.
4. Completed myocardial infarction undergoing non-emergent angiography and PCI
5. PCI of thrombotic coronary lesions performed non- emergently after recent myocardial infarction

AMI/CTO: includes/excludes

**AMI**

- **Included (when performed):**
  - ✓ Angioplasty
  - ✓ Atherectomy
  - ✓ Stent
  - ✓ Manual aspiration thrombectomy
  - ✓ Distal protection
  - ✓ Intracoronary thrombolysis

- **Not Included:**
  - “Mechanical thrombectomy is reported separately”
    - ¡92973 (mechanical thrombectomy)
    - AngioJet

**CTO**

- **Included:**
  - ✓ Angioplasty
  - ✓ Atherectomy
  - ✓ Stent

- **Not Included:**
  - Mechanical thrombectomy (92973) AngioJet
  - Manual aspiration thrombectomy (93799)?
    - “non-mechanical, aspiration thrombectomy is not reported with 92973, and is included in the PCI code for acute myocardial infarction... When performed.”
No Acute MI or CTO

Native Coronary Artery Interventions (Listed in Current Hierarchy)

- Report one of these for each of the five native vessels treated
  - designate each with LD, LC, LM, RI, RC modifier:
    - 92920 ($544) - Angioplasty (POBA and Cutting Balloon)
    - 92928 ($604) - Stent (including PTA)..... (C9600)
    - 92924 ($646) - Atherectomy (including PTA)
    - 92933 ($676) - Stent plus Atherectomy (including PTA).... (C9602)

- Additional intervention(s) in branch(s) of each major vessel
  (up to 2 for each major vessel)
  - 92921* ($0) – Angioplasty
  - 92929* ($0) - Stent (including PTA)..... (C9601)
  - 92925* ($0) - Atherectomy (including PTA)
  - 92934* ($0) - Stent plus Atherectomy (including PTA).... (C9603)
  
  * No RVU’s Assigned to these codes
Anatomic Modifiers

- Needed for CCI Edit Navigation:
  - RC – Right Coronary
  - LD – Left anterior descending
  - LC – Left circumflex
  - RI – Ramus intermedius
  - LM – Left main
  - 59 – Branch Vessels

Bifurcation lesions = two interventions
Bridging lesions = one intervention if both treated with single intervention

Within the 5 Recognized Vessels

- Assign the base code for the highest level intervention performed in a recognized vessel (or branch) as if performed in the major vessel:
  - LM, LD, LC, RI, RC

- If interventions are performed in more than one vessel, report up to two subsequent interventions (one for each additional vessel):
  - Applies to LD, LC, and RC
  - Does not apply to LM or RI
Branches of the Left Coronary

1. Main left coronary artery
2. Proximal LAD
3. Mid LAD
4. Distal LAD
5. Circumflex
6. Posterolateral
7. First diagonal
8. First septal perforator
9. Septal arteries
10. Atrial branch

Branches of the Right Coronary

1. Proximal right coronary artery
2. Mid right coronary
3. Distal right coronary
4. Posterior interventricular
5. A.V. sulcus
6. Conus branch
7. S.A. nodal branch
8. R.V. branch
9. Acute marginal branch
10. A.V. nodal branch
11. Septal arteries
Bypass Graft Interventions

- Typical Bypass Graft
  - 92937 ($603) – initial intervention in each bypass graft.
    - May be reported multiple times if multiple grafts are intervened upon.
  - 92938* ($0) – additional intervention in each branch

“When a major artery is treated both through the native circulation and through a graft, report both base codes” AMA

Includes PTA, PTE, Stent – Any combination

* No RVU’s Assigned to these codes

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Diagnostic & Interventional

- Interventions require cath placement and angiography
- Reimbursement is included in the intervention procedures
- It is typically NOT appropriate to bill for a diagnostic heart catheterization (Example: 93458) at the time of a scheduled coronary intervention
- If initial diagnostic cath and intervention are performed during the same procedure, both are eligible for billing submission and reimbursement (multiple surgical procedure reduction applied to heart cath code.)
  - 59 (separate service) modifier is required on the diagnostic study
  - X modifiers do not appear to be applicable:
    - XE – Separate Encounter: A service that is distinct because it occurred during a separate encounter.
    - XS – Separate Structure: A service that is distinct because it was performed on a separate organ/structure.
    - XP – Separate Practitioner: A service that is distinct because it was performed by a different practitioner.
    - XU – Unusual Non-Overlapping Service: The use of a service that is distinct because it does not overlap usual components of the main service.

Diagnostic Cath + Intervention

- According to CPT 2013:
  - “No prior catheter-based coronary angiography study is available, and a full diagnostic study is performed, and a decision to intervene is based on the diagnostic angiography, or
  - A prior study is available, but as documented in the medical record:
    - The patient’s condition with respect to the clinical indication has changed since the prior study, or
    - There is inadequate visualization of the anatomy and/or pathology, or
    - There is a clinical change during the procedure that requires new evaluation outside the target area of intervention.”
### Moderate Sedation

- Moderate sedation is billable in 15-minute increments
  - 1st 15 minute code billable after 10 minutes
  - Additional 15-minute code billable after 23 minutes

- 2 sets of codes
  - Sedation by operator:
    - 99152 – 1st 15 minutes (0.25 wRVU)
    - 99153 – each addtl. 15 minutes (no wRVU)
  - Sedation by other qualified professional:
    - 99156 – 1st 15 minutes (1.65 wRVU)
    - 99157 – each addtl. 15 minutes (1.25 wRVU)

- Some procedures are reported with multiple codes that each had moderate sedation carved out of them - unintended payment reduction:
  - Defibrillator implant (33249) & DFT (93641)
  - Electrode removal, electrode repair, or skin pocket relocation at the time of a device procedure (implant, gen change)

For patients <5 yrs. Old substitute 99151 for 99152 and 99155 for 99156

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### Moderate Sedation Documentation

- The operative report needs to support the codes reported
  - 99152 - Moderate sedation services provided by the same physician or other qualified health care professional performing the diagnostic or therapeutic service that the sedation supports, requiring the presence of an independent trained observer to assist in the monitoring of the patient's level of consciousness and physiological status; initial 15 minutes of intraservice time, patient age 5 years or older
    - Establish “administration of moderate sedation”
    - Establish duration of intraservice time
      - Starts when sedating agent(s) are administered
      - Ends with the procedure – when face-to-face time concludes
    - Document the presence of a dedicated, trained observer
  - 99156 - Moderate sedation services provided by a physician or other qualified health care professional other than the physician or other qualified health care professional performing the diagnostic or therapeutic service that the sedation supports; initial 15 minutes of intraservice time, patient age 5 years or older
    - Same as above, but no need for a dedicated, trained observer

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Intra Aortic Balloon Pump

- **Percutaneous:**
  - 33967 - Insertion of intra-aortic balloon assist device, percutaneous
  - 33968 - Removal of intra-aortic balloon assist device, percutaneous

- **Open Femoral Artery Approach:**
  - 33970 - Insertion of intra-aortic balloon assist device through the femoral artery, open approach
  - 33971 - Removal of intra-aortic balloon assist device including repair of femoral artery, with or without graft

- **Ascending Aorta Approach:**
  - 33973 - Insertion of intra-aortic balloon assist device through the ascending aorta
  - 33974 - Removal of intra-aortic balloon assist device from the ascending aorta, including repair of the ascending aorta, with or without graft

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**Services Included in the Global Surgical Package**

1. **Preoperative Visits:**
   - The initial evaluation for a minor surgical procedure.
   - Critical care related to the performance of the procedure.

2. **Intraoperative Services:** Services that are normally a usual and necessary part of the surgical procedure.

3. **Complications Following Surgery:** Include all additional medical or surgical services required of the surgeon during the postoperative period of the surgery due to complications that do not require additional trips to the operating room.

4. **Postoperative Visits:** Follow-up visits during the postoperative period of the surgery that are related to recovery from the surgery.

5. **Post surgical pain management by the surgeon.

6. **Miscellaneous Services:** Includes items such as dressing changes; local incision care; removal of operative pack; removal of cutaneous sutures, staples, lines, wires, tubes, drains, casts, and splints; insertion, irrigation and removal of urinary catheters; routine peripheral intravenous lines, nasogastric and rectal tubes; and changes and removal of tracheostomy tubes.
Services Not Included in the Global Surgical Package

1. Visits unrelated to the diagnosis for which the surgical procedure is performed, unless the visits occur due to complications from the surgery.
2. Postoperative complications that require a return trip to the operating room. An operating room for this purpose is defined in Medicare regulations as:
   - A place of service specifically equipped and staffed for the sole purpose of performing surgical procedures. The term includes a cardiac catheterization suite, a laser suite, and an endoscopy suite. It does not include a patient’s room, a minor treatment room, a recovery room, or an intensive care unit unless the patient's condition was so critical there would be insufficient time for transportation to an operating room.
3. Diagnostic tests and procedures
4. Critical care services (procedure codes 99291 and 99292) unrelated to the surgery when a seriously injured or burned patient is critically ill and requires constant attendance by the provider. Use modifier 24 or 25 as appropriate.
5. Evaluation and management (E/M) services unrelated to a surgical procedure.

Note: The initial evaluation for minor surgical procedures and endoscopies is always included in the global surgery package. Visits by the same physician on the same day as a minor surgery or endoscopy are included in the global package, unless a significant, separately identifiable service is also performed. Modifier -26 is used to bill a separately identifiable evaluation and management (E/M) service by the same physician on the same day of the procedure.

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