Washington State Health Information Management Association
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Member ACDIS, FLACDIS, AHIMA, FHIMA, GCHIMA
ICD-10-PCS -Cardiovascular Procedures Defined
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MedPartners University, MedPartners, Tampa FL
Simple Definition of CARDIOVASCULAR

medical: of or relating to the heart and blood vessels

adjective cardiovascular ˈkar-dē-ə-vəs-kə-lər
Objectives

* Describe the disease processes and anatomy involved in selected cardiac procedures.
* Explain the coding process for selected cardiac procedures.
* Discuss the documentation needs for specific ICD-10-CM/PCS Cardiac codes
* Provide cardiac procedure case study examples
MedPartners University (MPU) encourages the learner to review all resource materials associated with their area of expertise.

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Recognize that states will vary; facilities will vary.

Rules change.

Although we strive for perfection we do not claim to always be correct

Read and self-educate.
Coronary Atherosclerosis/Coronary Artery Disease

* Coronary Artery Disease (CAD) is defined as a blockage of one or more arteries that supply blood to the heart due to atherosclerosis.
* ICD-10-CM requires precise provider documentation in order to assign the correct CAD code.
* ICD-10-CM provides specific combination codes for CAD with or without various forms of angina pectoris. The provider must document the type of angina pectoris in order to assign the correct combination code.
Examples ICD-10-CM CAD Coding

* Congenital CAD: Q24.5
* Atherosclerosis of *native coronary artery* (with or without various forms of angina pectoris): I25.10 through I25.119
* Atherosclerosis of *unspecified coronary artery bypass graft*[s] with various forms of angina pectoris: I25.700 through I25.709
* Atherosclerosis of *autologous vein coronary artery bypass graft*[s] with various forms of angina pectoris: I25.710 through I25.719
Atherosclerosis of autologous artery coronary artery bypass graft[s] with various forms of angina pectoris: I25.720 through I25.729

Atherosclerosis of non-autologous biological coronary artery bypass graft[s] with various forms of angina pectoris: I25.730 through I25.739

Atherosclerosis of native coronary artery of transplanted heart with various forms of angina pectoris: I25.750 through I25.759
Selected Definitions

* Autologous vein is a vein that originates from the patient, such as the saphenous vein graft in the leg that is used to create a bypass in the coronary artery.

* Autologous artery is an artery that originates from the patient, such as an internal mammary artery graft that is used to create a bypass in the coronary artery.

* Non-autologous biological is grafting material that does not originate from the patient.
Common Areas of Coronary Artery Blockage

[Heart diagram with labeled coronary arteries]

- Aorta
- Br. to S-A node
- R. coronary a.
- R. atrial aa.
- Conus arteriosus br.
- R. anterior ventricle a.
- L. coronary a.
- Circumflex a.
- Posterior atrial a.
- L. marginal a.
- Diagonal a.
- Anterior interventricular a.
- L. posterior ventricular br.
- R. marginal a.
- R. posterior interventricular a.

Common areas of coronary artery blockage that result in damage to heart muscle.
Coronary Artery Bypass Graft (CABG) is a surgical procedure in which one or more blocked coronary arteries are bypassed by a graft to restore normal blood flow to the heart and reduce the risk of death from CAD. This procedure is performed on a still heart (with the use of cardiopulmonary bypass) or on a beating heart ("off-pump" bypass).
Bypass is defined as altering the route of passage of the contents of a tubular body part. A bypass can reroute (1) the contents of a body part to a downstream area of the normal route, (2) to a similar route and body part, or (3) to an abnormal route and dissimilar body part. Bypass includes one or more anastomoses, with or without the use of a device.
**B3.1b:** “Components of a procedure specified in the root operation definition and explanation are not coded separately. Procedural steps necessary to reach the operative site and close the operative site, including anastomosis of a tubular body part, are also not coded separately.”

**Example:** Thoracotomy to access the operative site would not be coded separately.
**B3.6b:** “Coronary arteries are classified by the number of distinct sites treated, rather than number of coronary arteries or anatomic name of a coronary artery (e.g. left anterior descending).

Coronary artery bypass procedures are coded differently than other bypass procedures as described in Guideline B3.6a. Rather than identifying the body part bypassed from, the body part identifies the number of coronary arteries bypassed to, and the qualifier specifies the vessel bypassed from.”

**Example:** Aortocoronary artery bypass of one site on the left anterior descending coronary artery is classified in the body part axis of classification (character 4) as one coronary artery site and the qualifier (character 7) specifies the aorta as the body part bypassed from.
B3.6c: “If multiple coronary artery sites are bypassed, a separate procedure is coded for each coronary artery site that uses a different device and/or qualifier.”

Example: Aortocoronary artery bypass and internal mammary artery bypass are coded separately.
B3.9: “If an autograft is obtained from a different body part in order to complete the objective of the procedure, a separate procedure is coded.”

Examples: Coronary bypass with excision of saphenous vein graft, excision of saphenous vein is coded separately.
Please reference the aforementioned Coding Clinic for complete information. A summary follows:

- CABG using the left internal mammary artery (LIMA) as a pedicle graft wherein the LIMA graft remained attached and was not excised from the patient. A separate code should not be reported for harvesting/excision of the LIMA.

- In a case of the harvest of a saphenous vein for CABG wherein the physician does not document to the greatest level of specificity (i.e. upper/greater or lower/lesser saphenous vein), a query is needed in order to assign the correct ICD-10-PCS code.
ICD-10-PCS Code Structure

ICD-10-PCS Characters

1. Section
2. Root Operation
3. Body System
4. Body Part
5. Approach
6. Device
7. Qualifier
PCS Table Tips

* TIP: To build a valid code, characters 4 through 7 must come from the same row; you cannot select characters from different rows.

* TIP: Some tables, due to their length, must be continued on the next page in ICD-10-PCS coding manuals. The value selection must be made within the same row of the table.
## Character 6-CABG Devices

<table>
<thead>
<tr>
<th>Type of Tissue</th>
<th>Device Character</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autologous Venous Tissue</td>
<td>9</td>
<td>A venous graft in which the donor and recipient are the same individual.</td>
</tr>
<tr>
<td>Autologous Arterial Tissue</td>
<td>A</td>
<td>An arterial graft in which the donor and recipient are the same individual.</td>
</tr>
<tr>
<td>Synthetic Substitute</td>
<td>J</td>
<td>Any type of synthetic (not biologically derived) substitute.</td>
</tr>
<tr>
<td>Non-autologous Tissue Substitute</td>
<td>K</td>
<td>Non-autologous donor tissue (i.e. the donor and the recipient are not the same person).</td>
</tr>
</tbody>
</table>
Cardiopulmonary bypass is commonly used in CABG procedures because of the relative difficulty of operating on a beating heart. The code table for this procedure can be found in the “Extracorporeal Assistance and Performance” section of the ICD-10-PCS code book. “Performance”, the root operation for cardiopulmonary bypass, is defined as “completely taking over a physiological function by extracorporeal means”.
CABG Example

- CABG x 3 – Reverse saphenous vein graft from the aorta to the obtuse marginal and posterior descending artery; left internal mammary artery to the left anterior descending artery; cardiopulmonary bypass.
Brief Description of Procedure: Right greater saphenous vein was harvested from lower extremity with percutaneous endoscopic harvesting technique. Sternotomy was performed. Left internal mammary artery was taken down with electrocautery and fine Hemoclips. Pericardium was opened. The patient was placed on cardiopulmonary bypass. The LIMA was dissected as a pedicle. The saphenous vein graft was placed end-to-end with the posterior descending artery then a separate graft was placed to obtuse marginal. The LIMA was subsequently placed end-to-side with the left anterior descending artery. Patient weaned from cardiopulmonary bypass. Incision closed and patient was taken to recovery in good condition.
CABG Example

* 021109W-Coronary artery bypass, two sites, from aorta with autologous venous tissue, open approach
* 02100Z9-Coronary artery bypass, one site from LIMA, open approach
* 06BP4ZZ-Excision of right greater saphenous vein, percutaneous endoscopic approach
* 5A1221Z-Cardiopulmonary bypass
ICD-10-PCS
Cardiac Intervention Coding
Diagnostic Catheterization/PTCA
CARDIAC CATHETERIZATION

A cardiac catheterization is a diagnostic procedure used to detect, measure, and verify a cardiac condition. The procedural technique involves a slight puncture of the common femoral artery (most common) within the leg and placement of a flexible catheter. Using a retrograde approach, the catheter is passed into the coronary vessels. Once placed in the coronary vessel, dye is injected to take a picture of the vessel (angiography).
• The technique of “retrograde” approach is used to reach the occlusion via collateral vessels to the affected vessel.
• Technical definition: The retrograde procedure consists of cannulating the 2 coronary ostia and advancing a guidewire from the unoccluded artery to the region distal to the occlusion via collaterals originating from the healthy artery.
ICD-9 Documentation Needed:

* Left, right or both sides of heart for the catheterization
* Number of stents inserted
* Type of stent-Drug eluting, bare metal or both
* Number of coronary vessels treated (if known)
* Angiography? Fluoroscopy?

ICD-10 Documentation Needed:

* Left, right, or both sides of heart for the catheterization
* Approach-percutaneous or open
* Number of sites treated (NOT number of coronary vessels) treated
* Type of device(s) used
* If contrast used-need the type High-Low Osmolar or Other.
Diagnostic Cardiac Catheterization

- Can be performed on the Right, Left or Combined areas of the heart via dye injected into the coronary vessel(s) for visualization.
- May also include fluoroscopic guidance, with or without contrast, which may or may not be coded separately (PCS Table B21-facility specific)
- Generally performed using a percutaneous femoral (Judkins technique), radial or brachial (least common) approach
Indications for Diagnostic Cardiac Catheterization

- Heart Attack (includes ST elevation MI, Non-ST Elevation MI, Unstable Angina)
- Abnormal Stress Test
- New-onset unexplained heart failure
- Survival of sudden cardiac death or dangerous cardiac arrhythmia
- Persistent chest pain despite optimal medical therapy
- Workup of suspected Prinzmetal Angina (coronary vasospasm)
ICD-10-PCS classifies cardiac catheterizations to the:

- Measurement and Monitoring- Section (Character 1)
- Physiological systems- Body System (Character 2)
- Measurement-Root Operation (Character 3)
- Sampling and pressure- Function/Device (character 6)
- And a qualifier (Character 7) specifying whether it was a left heart, right heart, or bilateral catheterization (shown below)

<table>
<thead>
<tr>
<th>Character 1</th>
<th>Character 2</th>
<th>Character 3</th>
<th>Character 4</th>
<th>Character 5</th>
<th>Character 6</th>
<th>Character 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section</td>
<td>Body System</td>
<td>Root Type</td>
<td>Body Part</td>
<td>Approach</td>
<td>Function/Device</td>
<td>Qualifier</td>
</tr>
<tr>
<td>Measurement and monitoring</td>
<td>Physiological systems</td>
<td>Measurement</td>
<td>Cardiac</td>
<td>Percutaneous</td>
<td>Sampling and pressure</td>
<td>Left heart</td>
</tr>
</tbody>
</table>

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Examples of cardiac catheterization codes:

* 4A023N8  Measurement of cardiac sampling and pressure, bilateral, percutaneous approach
* 4A023N6  Measurement of cardiac sampling and pressure, right heart, percutaneous approach
* 4A020N7  Measurement of cardiac sampling and pressure, left heart, open approach
Percutaneous Transluminal Coronary Angioplasty (PTCA)

PTCA Dilates narrowed coronary arteries blocked by plaque, called “lesions” by Balloon or stent
Dilation is defined as expanding an orifice or the lumen of a tubular body part.

- May or may not include the insertion of a device.
- ONLY applies to a TUBULAR body part or an Orifice.
Coronary arteries are classified as a single body part that are specified by the number of sites treated not by the name of the vessel (RCA, LAD) (Refer to PCS Table 027-Body Part-character 4)

- Coronary Artery, One Site
- Coronary Artery, Two Sites
- Coronary Artery, Three Sites
- Coronary Artery, Four or More Sites

Angioplasty procedures performed on two distinct SITES in one coronary vessel with placement of two stents are coded to one code

- Example- PTCA with stent placement of two sites in the LAD.
Angioplasty procedures performed on two distinct SITES in one coronary vessel with placement of a drug-eluting stent and placement of a bare metal stent is coded separately.

Example- LAD with placement of a drug- eluting stent and non-drug-eluting stent requires two codes

1) one code for the sixth character to capture the placement of the drug-eluting stent and
2) one code to capture the placement of the non-drug eluting stent.
PCS Table 027 from the 2016 ICD-10-PCS codebook:

<table>
<thead>
<tr>
<th>Section</th>
<th>Medical and Surgical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body System</td>
<td>Heart and Great Vessels</td>
</tr>
<tr>
<td>Operation</td>
<td>Dilation: Expanding an orifice or the lumen of a tubular body part</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Body Part</th>
<th>Approach</th>
<th>Device</th>
<th>Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Open</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>Percutaneous</td>
<td>3</td>
<td>Bifurcation</td>
</tr>
<tr>
<td>2</td>
<td>Percutaneous Endoscopic</td>
<td>4</td>
<td>No Qualifier</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Tips to determine the Device

* Make use of Appendix F-Device Key (sample below) and Appendix G-Device Definitions in the ICD-10-PCS 2016 codebook

<table>
<thead>
<tr>
<th>TAXUS® Liberté® Paclitaxel-eluting Coronary Stent System</th>
<th>Use: Intraluminal Device, Drug-eluting in Heart and Great Vessels</th>
</tr>
</thead>
</table>

* Teach your physicians to state whether the stent is Drug-eluting (DES, drug coated, medicated) or Non-drug-eluting (Bare Metal)

* Keep a list handy of the most used stents in your facility—have the physician provide you with the list and whether they are drug-eluting or not.
Some Common Cardiac Stents

* Drug-eluting
  * Cypher (coated with sirolomus)*
  * Endeavor (Medtronic-coated with zotarolimus)*
  * Taxus (coated with paclitaxel)*
  * Heparin-coated

* Non Drug-eluting
  * Bare metal-no coating or covering but can be mesh-like tube over thin wire
The patient came to the hospital with unstable angina. He was taken emergently to the cardiac cath lab and underwent left heart cath Judkins technique, coronary angiography, left ventriculogram via femoral artery puncture. (Low osmolar contrast used) Findings were near total occlusion of the RCA and 80% stenosis of the left circumflex. Decision was made to do a PTCA and stent insertion. The RCA had angioplasty reducing the stenosis to 10%; a drug eluting stent was then placed in the RCA. The left circumflex had angioplasty with placement of a stent. He tolerated the procedure well. He was monitored post operatively. He was instructed on smoking cessation related to his nicotine addiction, smoking 2 packs of cigarettes per day. Final diagnosis is unstable angina due to coronary arteriosclerosis. He will follow up in the office in two weeks.
PCS Codes:

- Left heart catheterization 4A023N7
- Coronary angiography B2111ZZ
- Left ventriculogram B2151ZZ
- PTCA RCA with drug eluting stent 027034Z
- PTCA Left circumflex with plain stent 02703DZ
Questions
Thank You!