ICD-10-PCS From the Heart: Cardiovascular Procedures

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The complexity of ICD-10-PCS, as well as the need for a better understanding of anatomy and physiology and the technique of surgical procedures, has been well documented. The coding of cardiovascular procedures in ICD-10-PCS, in particular, requires focus.

Consider these procedures when coding in volume three of ICD-9-CM and think about how much—or little—knowledge is required to correctly apply the codes. Take those same procedures in ICD-10-PCS, and the need for extensive knowledge about all aspects of cardiovascular procedures is crucial to complete the code assignments.

First, a discussion of applicable ICD-10-PCS guidelines is essential. According to the Centers for Medicare and Medicaid Services' Official ICD-10-PCS Coding Guidelines:

> **ICD-10-PCS Guideline B3.6b.** Coronary arteries are classified by number of distinct sites treated, rather than number of coronary arteries or anatomic name of a coronary artery (i.e., left anterior descending). Coronary artery bypass procedures are coded differently than other bypass procedures, which is described in guideline B3.6a. Rather than identifying the body part bypassed from, the body part identifies the number of coronary artery sites bypassed to, and the qualifier specifies the vessel bypassed from.
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> **ICD-10-PCS Guideline 3.6c.** 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.
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> **ICD-10-PCS Guideline 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.
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> **ICD-10-PCS Guideline B4.4.** The coronary arteries are classified as a single body part that is further specified by number of sites treated and not by name or number of arteries. Separate body part values are used to specify the number of sites treated when the same procedure is performed on multiple sites in the coronary arteries.

Common Root Operations: Cardiovascular Procedures

While there are 31 root operations in the medical and surgical section of ICD-10-PCS, there are specific root operations common to cardiovascular procedures:

- Bypass: This root operation is most commonly used for coronary artery bypass graft (CABG) procedures.
- Destruction: In cardiovascular procedures, destruction is used for cardiac ablation procedures to treat cardiac arrhythmias.
- Map: Used in cardiac mapping procedures and for cardiac procedures, applicable only to the cardiac conduction mechanism.
- Dilation: This root operation is most commonly used for percutaneous transluminal coronary angioplasty (PTCA). The stent placement for these procedures is identified by the device character.
- Insertion: In cardiovascular procedures, the insertion root operation is used for pacemakers, defibrillators, and cardiac resynchronization devices. Similar to ICD-9-CM, pacemaker insertion in ICD-10-PCS requires a code for placement of the generator as well as insertion of the lead(s).
- Measurement: While this root operation is in the medical and surgical-related section, it is the choice for cardiac catheterization procedures. With cardiac catheters—right, left, or both—there are additional procedures including coronary angiography and left ventriculography, which are coded separately.

- Replacement: Use of this root operation is necessary for valve replacement procedures, including aortic, mitral, and pulmonary valves. The device character in this root operation identifies the type of graft: Autologous tissue substitute, zooplastic tissue, synthetic substitute, and nonautologous tissue substitute.
- Supplement: This root operation can often be difficult to apply, but with cardiovascular procedures, surgeries such as mitral valve annuloplasty would be coded to supplement.
- Performance: This root operation is also found in the medical and surgical-related section of ICD-10-PCS and is used to identify cardiopulmonary bypass in cardiovascular procedures.

While these root operations are not the only ones applicable to cardiovascular procedures, they are some of the most common.

Cardiovascular ICD-10-PCS Case Examples

The following are case examples illustrating how to code cardiovascular cases using ICD-10-PCS.

Coronary Artery Bypass Graft (CABG) x4

Coronary artery bypass is done from the left internal mammary artery (LIMA) to the left anterior descending artery, the diagonal artery, and the ramus artery. Greater saphenous vein graft is done to the obtuse marginal artery. A portion of the left greater saphenous vein was harvested using an open approach. The procedure was completed utilizing cardiopulmonary bypass.

The ICD-10-PCS code assignment for this case example is:

- 02120Z9, Bypass, artery, coronary, Three sites
- 021009W, Bypass, artery, coronary, One site
- 06BQ0ZZ, Excision, vein, greater saphenous, left
- 5A1221Z, Bypass, cardiopulmonary

Two codes are necessary to fully explain the CABG x4 with three vessels being bypassed with the LIMA and one vessel treated using the saphenous vein graft. The excision of the saphenous vein is coded separately and the documentation needs to indicate both laterality and greater or lesser saphenous vein. This is a documentation opportunity, which can be addressed with the provider.

Left Cardiac Catheterization with PTCA

A 64-year-old man is admitted for a left heart catheterization, coronary angiography of multiple coronary arteries and left ventriculography, using low osmolar contrast. Findings from these procedures resulted in the decision to perform a percutaneous transluminal coronary angioplasty (PTCA) of two separate lesions in the left anterior descending artery. One lesion was treated with a drug-eluting stent and the other lesion treated with PTCA only.

The ICD-10-PCS code assignment for this case example is:

- 4A023NZ, Catheterization, Heart
- B2151ZZ, Fluoroscopy, Heart, Left
- B2111ZZ, Fluoroscopy, Artery, Coronary, Multiple
- 027034Z, Angioplasty, Stent
- 02703ZZ, Angioplasty

The angiography and ventriculography procedures are completed using fluoroscopy, which can be found on table B21. Cardiac catheterizations and PTCA are done percutaneously using fluoroscopy for visualization. Two codes are necessary to correctly code the PTCA, as one lesion was treated with a stent and one without. Note that there were two lesions in one coronary artery; however, the guideline specifies the number of sites treated rather than the name or number of coronary arteries.

Dual Chamber Cardiac Pacemaker and Leads

To manage the patient's sick sinus syndrome, a permanent dual chamber pacemaker with atrial and ventricular leads was implanted. An incision was made into the left chest wall with the dual chamber pacemaker being placed in the subcutaneous pocket. Next, a small incision was made into the skin and the leads were percutaneously passed into the right ventricle and right atrium.

The ICD-10-PCS code assignment for this case example is:

- 0JH606Z, Insertion of pacemaker generator
- 02H63JZ, Insertion of device in atrium
- 02HK3JZ, Insertion of device in ventricle

It is important to note that the pacemaker generator is placed in the subcutaneous tissue of the chest. The correct body system is subcutaneous tissue and fascia. A common error occurs when using the Alphabetic Index, under Insertion, Chest Wall. This index entry directs the coder to table OWH8, which may appear to be correct until character 6, device. On this table, there is no device character to identify the dual chamber pacemaker. When using the tables in ICD-10-PCS, if a code seems "almost right," review the table to ensure the row of the table—or even the table itself—is correct.

Moving Ahead with Cardiovascular Coding in ICD-10-PCS

These examples provide a glimpse of several of the more common cardiovascular procedures in ICD-10-PCS. For additional exposure, consider reviewing table 021–02Y in the Heart and Great Vessels body system. Often, a review of the tables in ICD-10-PCS provides additional insight and information in procedure code assignment. It is also important to continue to learn about the mechanism of these and other cardiovascular procedures. With a clear understanding of the procedure, the provider's documentation makes more sense and code assignment does get easier.

One final thing to consider is working with cardiothoracic surgeons to educate them about documentation requirements for procedures in ICD-10-PCS, as well as an opportunity to increase coder knowledge about these procedures.

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