

ICD-10-PCS: Coronary Artery Bypass Graft (CABG)

What is a CABG?

Coronary artery bypass graft surgery (CABG) is one procedure used to treat coronary artery disease. Coronary artery disease (CAD) is the narrowing of the coronary arteries, caused by a buildup of plaque within the walls of the arteries. This buildup causes the inside of the arteries to become narrowed, limiting the supply of oxygen-rich blood to the heart muscle.

One way to treat the blocked or narrowed arteries is to bypass the blocked portion of the coronary artery with another piece of blood vessel. Blood vessels, or grafts, used for the bypass procedure may be pieces of:

- A vein taken from the legs, usually the saphenous
- An artery in the chest, usually the left internal mammary (LIMA)
- An artery from the wrist, the radial

If the vein or artery is fully dissected out of the patient it will generally code to root operation **Excision** in the **Medical and Surgical** section if ICD-10-PCS.

Most commonly the chest is opened in the operating room and the heart is stopped for a time. The sternum is cut in half and spread apart. Tubes are inserted into the heart so that the blood can be pumped through the body during the surgery by a cardiopulmonary bypass machine. In ICD-10-PCS cardiopulmonary bypass is coded to the root operation **Performance** in the **Extracorporeal Assistance and Performance** section.

One end of the graft is attached above the blockage, usually to the aorta, and the other end is attached below the blockage. Thus, the blood is rerouted around, or bypasses, the blockage through the new graft to reach the heart muscle. In ICD-10-PCS the root operation would be **Bypass** in the **Medical and Surgical** section.

Newer, less invasive techniques have been developed such as "Off-pump" procedures, in which the heart does not have to be stopped. Other minimally-invasive procedures are increasingly being used, such as:

- Key-hole surgery (performed through very small incisions) and
- Robotic procedures (performed with the aid of a moving mechanical device)

Other surgical improvements for persons undergoing CABG are endoscopic vein harvesting and endoscopic radial artery harvesting. In both of these procedures surgeons use an endoscope to locate blood vessels that will be used for bypassing the blocked coronary arteries. Veins are generally harvested from the inner thigh and calf areas of the legs, while the radial artery is harvested from the wrist.

Traditional harvesting approaches involve making long surgical incisions down the inner thigh and/or calf. Research comparing traditional approaches with endoscopic methods indicates that patients generally have fewer complications, less leg pain, and shorter hospital stays with the endoscopic harvesting methods. Some persons, however, may not be eligible for these newer methods.

Example of a CABG Procedure:

Procedure: 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

Description of Procedure: After obtaining adequate anesthesia, the patient was prepped and draped. A primary median sternotomy incision was made and the pericardium was opened. The left internal mammary artery was dissected as a pedicle; at the same time a portion of the greater saphenous vein was harvested endoscopically from the left lower extremity. Cardiopulmonary bypass and cardioplegia were instituted and the patient was taken to a mild degree of hypothermia. The saphenous vein graft was placed end-to-end with the posterior descending artery, then a separate graft was placed to obtuse marginal. The left internal mammary artery was subsequently placed end-to-side with the left anterior descending coronary artery. Following completion of grafts, warm blood was administered and the patient was weaned from cardiopulmonary bypass. Incision was closed and patient was taken to recovery in good condition.

What does the coder need to know to code a CABG?

- How many coronary artery sites are bypassed
 - How many different devices (veins, arteries, autologous, nonautologous, synthetic) were used
 - How many different qualifiers (point of origin for new blood supply to the heart, e.g. the aorta) were used
- Was the patient on cardiopulmonary bypass
- Was an autologous vein and/or artery harvested
 - From what site(s)
 - See AHA Coding Clinic for ICD-10-CM and ICD-10-PCS 3rd Quarter 2014, page 8, for directions on coding grafts
- Laterality of the donor site

Example Part 1:

A portion of the greater saphenous vein was harvested endoscopically from the left lower extremity. **06BQ4ZZ**

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Excision

Vein

Greater Saphenous
Left **06BQ** ←
Right **06BP**

ICD-10-PCS Tabular

Section	0	Medial and Surgical	
Body System	6	Lower Veins	
Operation	B	Excision: Cutting out or off, without repalcement, a portion of a body part	
Body Part	Approach	Device	Qualifier
C Common Iliac Vein, Right D Common Iliac Vein, Left F External Iliac Vein, Right G External Iliac Vein, Left H Hypogastric Vein, Right J Hypogastric Vein, Left M Femoral Vein, Right N Femoral Vein, Left P Greater Saphenous Vein, Right Q Greater Saphenous Vein, Left	0 Open 3 Percutaneous 4 Percutaneous Endoscopic	Z No Device	X Diagnostic Z No Qualifier

Example Part 2:

The left internal mammary artery was dissected as a pedicle. Because the artery is being used as a pedicle graft and not completely dissected out of the patient, this will not be coded as a "harvested" artery. Please see: AHA Coding Clinic for ICD-10-CM and ICD-10-PCS 3rd Quarter 2014, page 8.

No code

Example, Part 3:

Cardiopulmonary bypass and cardioplegia were instituted. Only the cardiopulmonary bypass will be coded as the cardioplegia is considered to be an auxiliary procedure done to support the surgical procedure. Please see: AHA Coding Clinic for ICD-10-CM and ICD-10-PCS 3rd Quarter 2013, page 18. **5A1221Z**

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Bypass, cardiopulmonary 5A1221Z

ICD-10-PCS Tabular

Section	5	Extracorporeal Assistance and Performance	
Body System	A	Physiological Systems	
Operation	1	Performance: Completely taking over a physiological function by extracorporeal means	
Body System	Duration	Function	Qualifier
2 Cardiac	0 Single	1 Output	Z Manual
2 Cardiac	1 Intermittent	3 Pacing	Z No Qualifier
2 Cardiac	2 Continuous	1 Output 3 Pacing	Z No Qualifier

Example, Part 4:

The saphenous vein graft was placed end-to-end with the posterior descending artery, then a separate graft was placed to obtuse marginal. Notes: We are bypassing two (2) coronary arteries, and the point of origin for the new blood supply will be the aorta "... vein graft from the aorta..." **021109W**

ICD-10-PCS Index

Bypass

Artery

Coronary

Four or More Sites **0213**

One Site **0210**

Three Sites **0212**

Two Sites **0211** ←

ICD-10-PCS Tabular

Section	0	Medial and Surgical	
Body System	2	Heart and Great Vessels	
Operation	1	Bypass: Altering the route of passage of the contents of a tubular body part	
Body Part	Approach	Device	Qualifier
0 Coronary Artery, One Site 1 Coronary Artery, Two Sites 2 Coronary Artery, Three Sites 3 Coronary Artery, Four or More Sites	0 Open	9 Autologous Venous Tissue A Autologous Aterial Tissue J Synthetic Substitute K Nonautologous Tissue Substitute	3 Coronary Artery 8 Internal Maammary, Right 9 Internal Maammary, Left C Thoracic Artery F Abdominal Artery W Aorta

Example, Part 5:

The left internal mammary artery was subsequently placed end-to-side with the left anterior descending coronary artery. Notes: We are bypassing one (1) coronary artery and the point of origin for the new blood supply will be the left internal mammary artery. The left internal mammary artery is not considered to be a device because it was not completely dissected out of the patient. **02100Z9**

ICD-10-PCS Index

Bypass

Artery

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Operation	1	Bypass: Altering the route of passage of the contents of a tubular body part	
Body Part	Approach	Device	Qualifier
0 Coronary Artery, One Site 1 Coronary Artery, Two Sites 2 Coronary Artery, Three Sites 3 Coronary Artery, Four or More Sites	0 Open	Z No Device	3 Coronary Artery 8 Internal Maammary, Right 9 Internal Maammary, Left C Thoracic Artery F Abdominal Artery

Final codes for this case:

1. Saphenous vein graft from the aorta to the obtuse marginal, and posterior descending artery - **021109W**
2. Left internal mammary artery to the left anterior descending artery - **02100Z9**
3. Cardiopulmonary bypass - **5A1221Z**
4. Greater saphenous vein was harvested endoscopically from the left lower extremity - **06BQ4ZZ**

Note: The coder must be guided by documentation in the medical record of each individual case to make the correct code selections.