CODING LUMBAR SPINAL FUSION IN ICD-10-PCS
Understanding Lumbar Spinal Fusion Procedures and How to Code Them in ICD-10-PCS

Spinal fusion (arthrodesis) procedures are performed every day around the world. Coding spinal fusion in outpatient or ambulatory surgery center (ASC) settings with CPT® is an entirely different animal than coding for spinal fusion in the inpatient setting with ICD-10-PCS. Understanding spinal anatomy is key to extrapolating core procedural steps from operative notes and converting that information into codes that represent a procedure properly and fully. Spinal anatomy can at first appear quite crowded and complex, and there are a great many variations of spine fusion procedures — making coding these procedures confusing for even seasoned coders. For the purposes of this article, we’ll focus on only one of the five regions of the spine — the lumbar region.

CPT® vs ICD-10-PCS
While one five-digit CPT® code can capture several, if not all, portions of a complex surgical procedure, PCS codes are “built” character by character to capture the specifics of the procedure. PCS has a logical, consistent structure that enables one to build a code one character at a time with code tables, based on the details of the procedure, including specific features of the lumbar anatomy and biomechanics, as well as common spine surgery approaches.

Lumbar Anatomy and Biomechanics
The spinal cord is protected by the irregular bones of the vertebral column (Fig. 1). The spinal canal housing the cord passes through the vertebral foramen (Latin for opening) in the center of the vertebrae. The spinal cord is protected anteriorly by the cylindrical vertebral body and posteriorly by the posterior elements of the vertebrae, forming a bony ring surrounding the spinal canal. Projecting posteriorly from the vertebral body are the pedicles. They are two short, stout, cylindrical portions of bone that extend around the sides of the spinal canal to meet the broad, flat plates of the laminae, which form the posterior portion of the vertebral arch that encircles the spinal canal and protects it. The spinous process projects posteriorly from the point where these laminae connect and creates an attachment point for spinal muscles and ligaments. The transverse processes project out on each side at the point where the pedicles join the laminae, also creating an attachment point for spinal muscles and ligaments.

Figure 1 – Lumbar Anatomy
Each lumbar vertebra is made up of the vertebral body and the posterior elements:

- The various processes to which spinal muscles and ligaments are attached, as well as the facet joints (synovial joints) which enable movement — flexion, extension, and twisting
- Foramina through which the spinal cord and its exiting nerve roots pass
The motion segments of the spine facilitate flexion (bending forward), extension (bending backward), and twisting. The functional units of these motion segments are made up of two adjacent vertebrae, their shared intervertebral disc, two facet joints and capsules, and the connecting ligaments (Figs. 2 & 3). For each adjacent pair of vertebrae, there are four articular processes joining the two vertebral segments: two at the top (superior articular processes) and two at the bottom (inferior articular processes). It’s these facet joints and their interconnectedness that does most of the work of keeping the spine stable during movement. It’s also these facet joints that can be a major player in back pain, whether due to trauma or degenerative conditions such as osteoarthritis.

On the anterior column of the spine are the large, round vertebral bodies. The vertebral body consists of an outer ring of very strong, very dense cortical bone, surrounding the softer, spongy cancellous (aka trabecular) bone in the center. Between each vertebral body lies a disc of tough, very strong tissue called fibrocartilage. These discs perform as a shock absorber for the spine when there is impact from activity. Much like the vertebral bodies, the intervertebral disc is made up of a strong, tough outer layer and a softer, spongy center (Fig. 4). The outer layer of the disc is the annulus fibrosus and it’s made up of lamellae — layers of collagen fibers with great tensile strength. The inner structure of the disc is the nucleus pulposus, which is gelatinous with a high water content and can resist axial forces. The disc is often a source of pain due to degeneration called degenerative disc disease (DDD).

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Screws are often placed in the pedicles during spinal fusion, due to their strength and thickness.

Figure 2 – The Facet Joints

Each vertebra has 4 articulate processes, 2 at the top on each side (Superior Articulate Processes) and 2 at the bottom on each side (Inferior Articulate Processes). These connect with the adjacent vertebrae to enable movement.

Figure 3 – The Intervertebral Disc and Facet Joint Capsule

Between adjacent vertebrae lies the intervertebral disc, also a connection/linking point for spinal segments. Also in this illustration, you can view the facet joint capsule, also known as the zygapophysis or zygapophyseal joint. This capsule is made of connective tissue and, within the capsule, is the synovial lining, supplying synovial fluid to the joint to assist in lubrication and reducing friction with movement of the joint.

Figure 4 – The Intervertebral Disc

On the right is a superior view of the disc, showing the very strong concentric layers of the annulus fibrosus sealed around the gelatinous nucleus pulposus. The illustration on the left reveals the lamellae, the rings of tough collagen fibers that form the annulus fibrosus. The lamellae serve to evenly distribute the force and pressure applied to the disc.
The spinal canal is afforded additional protection in the non-bony intervertebral spaces by the posterior longitudinal ligament (PLL) — a flat, ribbon-like ligament, which runs along the anterior of the vertebral foramen, and the ligamentum flavum, which is situated on the posterior of the vertebral foramen (Fig. 5). Hypertrophy (enlargement due to thickening) of the ligamentum flavum is a common cause of spinal canal stenosis (narrowing).

Not to be confused with the central vertebral foramen of the spinal column, nerve roots exit the spinal column via lateral spaces of each vertebral segment in the cervical, thoracic, and lumbar regions of the spine, and are called neural foramina or intervertebral foramina (Fig. 6). Degenerative changes to the vertebrae and/or disc can cause these foramina to narrow and compress the nerves, leading to pain, numbness, and/or loss of function.

Most people have five lumbar vertebrae at the base of their spine, superior to the sacrum and pelvis. (Rarely, some may have an additional segment, called a transitional vertebra.) The lumbar spine contains the largest vertebrae of the vertebral column to allow for their significant load-bearing responsibilities.

CPT ® divides the spine into three columns – the “anterior (anterior two-thirds of the vertebral body), middle (posterior third of the vertebral body and the pedicle), and posterior (articular facets, lamina, and spinous process).” For coding purposes for lumbar spinal fusion in ICD-10-PCS, the spine is divided into two columns – anterior (i.e. interbody) and posterior – represented by the 7th character, Qualifier (Fig. 7).

Approach ‘approach’ with caution:

The term ‘approach’ can have different meanings in relation to spinal surgery and coding.
1: anatomical access point to the spine through a surgical opening; referred to generally as anterior or posterior (through the front or back sides of the body, respectively), but can be further broken down within those two categories, e.g. Oblique Lateral Interbody Fusion [OLIF], which is considered an anterior approach; Transforaminal Lumbar Interbody Fusion [TLIF], which is a posterior approach.
2: The 5th character in the OSG table in ICD-10-PCS represents the invasiveness of the procedure – whether open, percutaneous, or percutaneous endoscopic. The 7th character, Qualifier, denotes the ‘approach’ as it’s known in #1 above, plus the portion of the spinal column that is being fused, i.e. anterior column or posterior column.
What Is Spinal Fusion?

Arthrodesis is the fusion of bones across a joint space, thereby limiting or eliminating painful movement and promoting vertebral stability. Arthrodesis can occur spontaneously or as a result of a surgical procedure, such as fusion of the spine. Typically in spinal fusion procedures, instrumentation (plates, screws, rods, etc.) provides mechanical stability, while bone graft induces or supports biological bone formation over the next few months. Spinal fusion may be deemed medically-necessary for patients suffering from Degenerative Disc Disease (DDD), spinal canal stenosis with instability, recurrent disc herniation, spondylolisthesis (slipping forward of a vertebral body on to the vertebrae underneath), or other painful, debilitating conditions.

Arthrodesis can be achieved with many different techniques or a combination of techniques, often after removal of arthritic bone and decompression of the spine and/or its exiting nerve roots. There are two general types of spinal arthrodesis procedures – interbody fusion and/or posterior fusion (non-interbody). Sometimes the two may be combined. In the next section, we’ll break down each of the two overarching spinal arthrodesis procedure types into several, specific surgical approaches.

**Interbody Fusion** – Fusion in the interbody space is achieved by bone graft placed in an intervertebral cage or with the use of an allograft spacer, which is placed between the bodies of two contiguous vertebrae after some or all of the disc is removed, and after the vertebral endplates are prepared to facilitate fusion. Additionally, arthritic bone restricting and/or compressing the spinal column and nerves may be removed with laminectomy, laminotomy, foraminotomy, or facetectomy, or a combination thereof (Fig. 8). Fusion is performed on the anterior column of the spine, via an anterior or posterior approach.

**Posterior Fusion** – The posterior structures of contiguous vertebrae are fused – either the laminae, facets, transverse processes, spinous processes, or a combination thereof. Just like in interbody fusion, arthritic bone restricting and/or compressing the spinal column and nerves may be removed with laminectomy, laminotomy, foraminotomy, or facetectomy, or a combination thereof (Fig. 8). A posterior column fusion can be performed using a posterior, posterolateral, or lateral transverse technique. This technique differs from that of interbody fusion in that there is no interbody spacer or cage placed, and the posterior/lateral elements of the spine are fused (posterior column) and not the interbody space (anterior column).
For either type of fusion, surgeons often use hardware (e.g. plates and screws, rods and screws, interbody cages, allograft spacers, etc.) to stabilize the spine while the fusion takes place over approximately 3-6 months. If the bone graft does not work and there is no fusion (i.e. pseudarthrosis), then the hardware could eventually break; thus, the two are often used together to ensure the best possible outcome. There are many types of bone graft that can be employed, but the two most common options are:

- Autograft – harvested from the patient’s iliac crest or elsewhere; bone removed during decompression of neural elements/spinal canal or bone marrow aspirate (auto- means ‘self’)
  - ICD-10-PCS Device Character: 7 “Autologous Tissue Substitute”
- Allograft – donor tissue (allo- means ‘other’)
  - ICD-10-PCS Device Character: K “Nonautologous Tissue Substitute”

When coding for spinal fusion in ICD-10-PCS, one common mistake is to equate instrumentation insertion with fusion. However, the hardware alone does not constitute fusion. Bone graft or bone graft substitute must be employed for fusion to be reported, per the root operation definition of Fusion in ICD-10-PCS.

![Figure 8 – Spinal or Neuroforaminal Decompression](image)

There are many ways to decompress the spine and its nerve roots. An understanding of the distinctions from one technique to the next can be helpful when coding.

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**Posterior Approach vs Posterior Column Fusion**

Take care not to confuse a posterior approach with a posterior column fusion. Remember, ‘posterior approach’ refers to the anatomical access point to the spine, i.e. the site of the incision the surgeon makes. However, a posterior column fusion refers to the portion of the spinal column that is being fused, i.e. the posterior column of the spine (not anterior/interbody).

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**Spinal Fusion Surgical Approaches**

Along with the different options for the fusion we’ve discussed so far, the surgeon also has several approaches to choose from to access the spine. The surgeon chooses the approach most clinically-appropriate for each patient and their individual circumstances and needs. There are generally two types of approaches with which the surgeon can access the patient’s spine – posterior or anterior (Fig. 9). All interbody fusions are performed on the anterior column of the spine, as the bone graft is placed in the interspace between two adjacent vertebrae. An anterior column (interbody) fusion can be achieved with either an anterior or posterior approach. However, a posterior column fusion cannot be achieved via an anterior approach. Within these two approach categories (anterior versus posterior) are many variations – each designed for a specific purpose (e.g. an Oblique Lateral
approach that avoids dissection or splitting of the psoas muscle and the lumbosacral plexus nerves that run through that muscle; see Fig. 14).

**Figure 9 – Lumbar Spinal Fusion Approaches**

Center line divides the columns of the spine. Approaches above the line are all coded as Anterior Approaches to the Anterior Column of the spine. Those below the line are either coded as Posterior Approach to the Anterior Column of the spine, i.e. PLIF & TLIF, or Posterior Approach to the Posterior Column of the spine, i.e. PLF. Arrows illustrate the trajectory of the surgical instruments accessing and working on the spine.

**Posterior Interbody Fusion Approaches**

*Posterior Lumbar Interbody Fusion* [PLIF] – The patient is prone (lying on their stomach), and the incision is made in the back (Fig. 10).

*Transforaminal Lumbar Interbody Fusion* [TLIF] – The patient is prone, and the incision is also made in the back, only unilaterally to one side of the spine, to access the vertebral body at an angle via an opening made by removing some of the facet joint (Fig. 11). May also be repeated on the contralateral side, if decompression is needed on both sides to properly free entrapped nerves and/or restore proper lordotic curvature of the vertebral column.

**Figure 10 – Posterior Lumbar Interbody Fusion [PLIF]**

Shown within the encircled areas in the center of this illustration are the portions of the annulus fibrosus the surgeon removed to gain access to the disc space and remove the degenerated disc. The surgeon prepares, i.e. decorticates, the endplates of each of the adjacent vertebral bodies (to encourage bony ingrowth) and inserts interbody devices into the intervertebral space, packed with bone graft. The surgeon adds more bone graft to the remaining empty disc space, to ensure good opportunity for successful fusion. The spine is stabilized with pedicle screws and rods may also be attached to those screws.
Unlike in PLIF, the posterior disc space is accessed via a transforaminal approach, whereby the motion segments of the spine are distracted (stretched) by way of pedicle screws that are inserted prior to cage insertion. This technique can also preserve the contralateral lamina and the spinous process, leaving more surface area for fusion of the lateral elements of the spine (PLF), if indicated.

Both the PLIF and TLIF procedures allow for an interbody fusion through a posterior approach (with the patient positioned on their stomach, i.e. prone). The interbody space is part of the anterior column of the spine. Both procedures can be combined with a posterior or posterolateral fusion of the posterior elements of the spine, i.e. PLF. The combination is oftentimes referred to as a '360° fusion,' without the need to reposition the patient to perform the second fusion on the posterior column, as they would if the interbody fusion was performed via an anterior approach (with the patient positioned face up, i.e. supine, or on their side, i.e. lateral).

**Anterior Interbody Fusion Approaches**

**Anterior Lumbar Interbody Fusion |ALIF|** – The surgical approach to the interbody space is anterior, through the abdomen – and may require an access surgeon (e.g. vascular surgeon to safeguard the aorta and vena cava, which are directly anterior to the spine), with the patient placed in the supine position (lying on their back) (Fig. 12).

**Direct Lateral Interbody Fusion |DLIF|** – The surgical approach to the interbody space is anterior, on the side of the abdomen, with the patient placed in the lateral decubitus position (left or right side up) (Fig. 13).

**Oblique Lateral Interbody Fusion |OLIF|** – The surgical approach to the interbody space is anterior, in an oblique trajectory and away from the nerves in the psoas muscle, with the patient placed in the lateral decubitus position (Fig. 14).
All three anterior procedures allow for an anterior interbody fusion through an anterior approach. The interbody space is part of the anterior column of the spine. These procedures can also be combined with a posterior or posterolateral fusion of the posterior elements of the spine, i.e. PLF, also known as 360° fusion, sometimes without the need for repositioning the patient.

**Posterior or Posterolateral Fusion Approach [PLF]**
The patient is prone, and the incision is made overlying the vertebrae. Sometimes, this type of fusion procedure may be referred to as a “gutter” fusion or the placement of the bone graft referred to as “in the gutters.” (Fig. 15)

These procedures allow for posterior column fusion through a posterior, posterolateral, or lateral transverse approach. The posterior/lateral elements are part of the posterior column of the spine. An interbody device cannot be reported with a posterior column fusion, as interbody indicates an anterior column fusion. However, these procedures can be combined with an anterior interbody or posterior interbody fusion of the anterior column of the spine, i.e. TLIF, OLIF, etc.; also known as 360° fusion, sometimes without the need for repositioning the patient.

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**Figure 13 – Direct Lateral Interbody Fusion [DLIF]**
Like ALIF, this approach enables access to the disc space without disrupting or risking damage of the spinal cord or neural structures. It allows for large interbody device insertion, thereby increasing the intervertebral foramina space and allowing for indirect decompression of the exiting nerve roots. Unlike ALIF, this approach also avoids disrupting the aorta and vena cava. Additionally, the spinal ligaments aren’t disturbed with this technique, preserving their support to spinal alignment and stabilization.

**Figure 14 – Oblique Lateral Interbody Fusion [OLIF]**
Like other anterior approaches, this technique avoids disrupting the neural elements laterally or opening the spinal canal. This approach avoids trauma of the psoas muscle by allowing the surgeon access to the spine anterior to the psoas muscle and the lumbosacral plexus nerves that run through it.
What Is ICD-10-PCS?

Since 1893, the World Health Organization (WHO) has maintained the International Classification of Diseases (ICD) for reporting cause of death. ICD-10-PCS is a code set that facilities use to report inpatient procedures, and PCS stands for Procedural Coding System. The ICD-10-PCS code set used in the US was developed by 3M for the Centers for Medicare & Medicaid Services (CMS). It replaced Volume 3 of ICD-9-PCS back in 2015 in the US.

There were certain attributes that were desired and drove the development of ICD-10-PCS as it is today:

- Expandability for new procedures within the code set, without disrupting its structural integrity.
- Completeness through a unique code for all substantially different procedures.
- Codes comprising independent characters, that maintain their meaning throughout a broad range of codes.
- Standardized terminology, with each term assigned a specific, unique meaning, and with no eponyms or common procedure terms for full clarity.
- Specificity, regardless of frequency – each procedure currently performed has its specific code in ICD-10-PCS – and “Not Otherwise Specified” (NOS) options are very limited, because a certain level of specificity is needed to build a code.
- Limited “Not Elsewhere Classified” (NEC) options, as all significant components of a procedure are represented within the characters of the code – however, there is the option to select a slightly nondescript qualifier for new devices, e.g. “other device,” before the device is explicitly added to ICD-10-PCS.
- Diagnostic information is no longer included in ICD-10-PCS codes; ICD-10-CM codes report diseases and disorders.

The code set is divided into sixteen sections. All codes are 7 characters long and one of 34 values can be assigned to each character in a code – numbers 0 through 9, or letters A-Z (except the letters I and O, to avoid confusion with numerals 1 and 0). A code is derived by choosing a specific value for each of the seven characters, based on the details of the procedure performed.
### Lumbar Spinal Fusion Coding in ICD-10-PCS

When beginning to build a code using ICD-10-PCS, the first 3 characters are most important – they’re the roadmap that takes you to the correct code table of the code set, so that you may find the rest of the options to build the 4th-7th characters of your code. Imagine visiting a large library, with books on every possible medical, surgical, imaging, etc., procedure in the world! You would certainly need to begin with what **Section** (Character 1) you wanted to search for your book. Since lumbar fusion is a surgical procedure, it would fall under the **Medical and Surgical** section of the code set, denoted by the number ‘0.’ Next, we need to know what **Body System** (Character 2) to focus on, so we can get to the right stack in the library. The lumbar spine falls under ‘Lower Joints’ in ICD-10-PCS, which is assigned to the letter ‘S.’ Lastly, you want to know the **Root Operation** (Character 3) you’re looking for, so you can go right to the exact shelf and find the book you need. The **Root Operation** of Fusion in the code set is indicated by the letter ‘G.’ So, now that you have the exact book with the exact info you need, you just need open it up and find the remaining 4 characters to complete your code. That’s where the code table comes in.

Given the first three characters of **0SG**, you then select the appropriate 4th character (**Body Part**), 5th character (**Approach**), 6th character (**Device**), and 7th character (**Qualifier**); based on the details of the procedure. Notice that the term “approach” is in the table below multiple times and there is a distinction to be made between the 5th character, **Approach**, and the 7th character, **Qualifier**, in which the approaches to the lumbar spine are listed. The 5th character in the OSG table represents the invasiveness of the procedure – whether open, percutaneous, or percutaneous endoscopic. The 7th character, **Qualifier**, denotes the anatomical entry point used to access the spinal column, i.e. anterior or posterior, and the portion of the spinal column that is being fused, i.e. anterior column or posterior column.

<table>
<thead>
<tr>
<th>Body Part</th>
<th>Approach</th>
<th>Device</th>
<th>Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>0*– Lumbar Vertebral Joint</td>
<td>0* – Open</td>
<td>7 – Autologous Tissue Substitute</td>
<td>0* – Anterior Approach, Anterior Column</td>
</tr>
<tr>
<td>1 – Lumbar Vertebral Joints, 2 or more</td>
<td>3 – Percutaneous</td>
<td>J – Synthetic Substitute</td>
<td>1 – Posterior Approach, Posterior Column</td>
</tr>
<tr>
<td>0*– Lumbar Vertebral Joint</td>
<td>0* – Open</td>
<td>A – Interbody Fusion Device</td>
<td>0* – Anterior Approach, Anterior Column</td>
</tr>
<tr>
<td>1 – Lumbar Vertebral Joints, 2 or more</td>
<td>3 – Percutaneous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 – Lumbosacral Joint</td>
<td>4 – Percutaneous Endoscopic</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Remember, the letter ‘O’ does not appear in the ICD-10-PCS tables, so the table above includes only zeros for any of the code values.

**As we discussed earlier, bone graft or bone graft substitute is required to constitute fusion and not just insertion of instrumentation/hardware. However, there currently is a Z value (‘No Device’) for the 5th character (‘Device’) in the OSG table. This contradicts the requirement that bone graft or bone graft substitute be performed to constitute fusion, so the ICD-10 Coordination and Maintenance Committee intends to delete value ‘Z-No Device’ from the table in future iterations of the code set.
Furthermore, ICD-10-PCS clarifies the distinction between the options for the 5th character, Approach, in Appendix A: Components of the Medical and Surgical Approach Definitions (table excerpt below).

<table>
<thead>
<tr>
<th>ICD-10-PCS Value</th>
<th>Definition</th>
<th>Access Location</th>
<th>Method</th>
<th>Type of Instrumentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open (0)</td>
<td>Cutting through the skin or mucous membrane and any other body layers necessary to expose the site of the procedure.</td>
<td>Skin or mucous membrane, any other body layers</td>
<td>Cutting</td>
<td>None</td>
</tr>
<tr>
<td>Percutaneous (3)</td>
<td>Entry, by puncture or minor incision, of instrumentation through the skin or mucous membrane and any other body layers necessary to reach the site of the procedure</td>
<td>Skin or mucous membrane, any other body layers</td>
<td>Puncture or minor incision</td>
<td>Without visualization</td>
</tr>
<tr>
<td>Percutaneous Endoscopic (4)</td>
<td>Entry, by puncture or minor incision, of instrumentation through the skin or mucous membrane and any other body layers necessary to reach and visualize the site of the procedure</td>
<td>Skin or mucous membrane, any other body layers</td>
<td>Puncture or minor incision</td>
<td>With visualization</td>
</tr>
</tbody>
</table>

Notice the difference between Approach Value 3, *Percutaneous*, and the Approach Value 4, *Percutaneous Endoscopic*, is whether visualization via an endoscope is employed.

The other appendices in the ICD-10-PCS manual can help clarify definitions and device values, when in doubt. The appendices may differ from publisher to publisher, and the ‘Expert’ editions may include more appendices than others. There are some appendices which appear to be common among them all, including to be Root Operations definitions, the Body Part Key, the Device Key, and the Device Aggregation Tables. The Body Part Key provides guidance on which anatomical description or site should be coded, when the site in the documentation doesn’t appear within the table you’re using, e.g. the iliac crest doesn’t have its own specific value in ICD-10-PCS, but the Body Part Key identifies the pelvic bone as the closest proximal value one can code. The Device Key and Device Aggregation Table help you find which value should be reported for a specific device or type of device, e.g. looking up ‘Interbody fusion (spine) cage’ instructs you to select ICD-10-PCS Device Value (6th character) *Interbody Fusion Device in Upper Joints* or *Interbody Fusion Device in Lower Joints*.

**What vs. Why**

CPT® coding focuses most often on the *what*, while ICD-10-PCS focuses more on the *why*. For instance, neuroforaminal decompression is the removal of certain portions of the vertebra that are entrapping a nerve root, and the CPT® code is selected based on what specific areas of the vertebra are removed (e.g. foraminotomy, facetectomy, laminotomy, or all three combined, etc.) and to what extent (e.g. hemilaminectomy vs full laminectomy; See Fig 14). The CPT® code is representative of exactly *what* the surgeon did during the procedure. However, in ICD-10-PCS, neuroforaminal decompression is coded with the root operation of *Release*, because its *intent* is to surgically release an entrapped nerve root, i.e. *why* the surgeon performed the procedure, and not *what* the surgeon did to release the entrapped nerve root. Likewise, spinal instrumentation hardware is coded separately in CPT®, but fixation is integral to the *intent* of the fusion procedure, so it’s already included in the root operation *Fusion* in ICD-10-PCS.
However, a single ICD-10-PCS code may not fully represent an entire spinal surgery. If the surgeon harvests bone graft from the patient’s iliac crest to use in the spinal fusion, that would be represented by another ICD-10-PCS code, as the intent of that portion of the procedure is excision of bone. A single code is not sufficient if both columns of the spine are fused, as a different qualifier (7th character) would be required for the second column fused, necessitating a second whole PCS code. If more than one vertebral joint is fused in a single procedure, and the second (or more) joint has a different device (6th character) or qualifier (7th character), it would require another code for each different device/qualifier.

**It’s the Simple Things**

Coding for lumbar spinal fusion in ICD-10-PCS can be quite simple, when you understand the anatomy and begin with a focus on the intent of each procedure (or portion of the procedure). Once you’ve identified that, the next step is to confirm the approach used to access the spine, the column(s) of the spine being fused, and any device(s) used. It’s as simple as that!

‘Solidify’ Your New Coding Skills for Lumbar Spinal Fusion

Below is a case study for a lumbar spinal fusion, which you can use to test drive your new coding skills. What follows are the recommended codes and references to the specific ICD-10-PCS guidelines which direct each code choice.

**CASE STUDY**

A patient with spinal stenosis and instability at L2-L5 presents for spinal fusion. The patient was placed in prone position on the operating room table after induction of anesthesia. The appropriate levels were identified, and the lumbar spine was then prepped and draped. A midline incision was made and extended down through the skin, subcutaneous tissue, and fascia exposing the posterior elements of L2-L5. Pedicle screws were placed bilaterally at L2, L3, L4, & L5. Complete bilateral excision of lamina was performed on L4. Bilateral foraminotomies and facetectomies were also performed to ensure the nerve roots were freely movable/decompressed. Distraction was then carried out across the disc space of L4-L5. The dura was retracted medially, and the disc was completely removed. The endplates were decorticated, and a PEEK interbody fusion device packed with bone graft harvested from the laminectomy was placed in the interbody space of L4-L5. The transverse processes of L2-L5 were decorticated. Local bone and morselized allograft were placed in the posterolateral gutters. Rods were placed at L2-L5. The posterior lumbar spine was then closed in layers.
Recommended codes:

- **0SG00AJ**, *Fusion of Lumbar Vertebral Joint with Interbody Fusion Device, Posterior Approach, Anterior Column, Open Approach* – for the L4-L5 posterior interbody fusion
- **0SG1071**, *Fusion of 2 or more Lumbar Vertebral Joints with Autologous Tissue Substitute, Posterior Approach, Posterior Column, Open Approach* – for the L2-L5 posterolateral fusion
- **0ST20ZZ**, *Resection of Lumbar Vertebral Disc, Open Approach* – for the total discectomy at L4-L5
- **01NB0ZZ**, *Release Lumbar Nerve, Open Approach* – for the nerve decompression

Notes:

- The fixation (rods, plates, screws) is included in the fusion, and no additional code is assigned.
  - (Sources: ICD-10-PCS Guideline B3.1b; AHA Coding Clinic for ICD-10-PCS, 4th Quarter, 2017; AHA Coding Clinic for ICD-10-PCS, 3rd Quarter, 2014; AHA - ICD-10-CM and ICD-10-PCS Coding Handbook with Answers – 2019)
- If autograft is obtained from a different body part, then a separate procedure is coded (e.g. 0QB20ZZ – Excision of right pelvic bone with an open approach).
  - (Sources: ICD-10-PCS Guideline B3.9; ICD-10-PCS Body Key [identifies pelvic bone as the closest proximal value for the iliac crest, which doesn’t have its own distinct value in ICD-10-PCS.])
- If multiple joints are fused, a separate procedure is coded for each vertebral joint that uses a different device and/or qualifier.
  - (Source: ICD-10-PCS Guideline B3.10b)
- If a provider performs a discectomy with spinal fusion, it should be coded as *Excision* of disc. If, however, the provider documents "total discectomy," it should be coded as disc *Resection*.
  - (Source: ICD-10-PCS Guideline B3.8)
- The insertion of an interbody fusion device is included in the 6th character device value (A), and not coded separately.
- If an interbody fusion device is used (alone or containing other material like bone graft), report the device value as Interbody Fusion Device.
  - (Source: ICD-10-PCS Guideline B3.10c)
- If bone graft is the only device used, report the device value as nonautologous or autologous tissue substitute.
  - (Source: ICD-10-PCS Guideline B3.10c)
- If a mixture of autologous and nonautologous bone graft is used, report the device value as autologous tissue substitute.
  - (Source: ICD-10-PCS Guideline B3.10c)
- More than one fusion code is required if both the anterior and posterior columns of the spine are fused.