Getting Started with ICD-10-PCS, Part 2

Lynn Kuehn, MS, RHIA, CCS-P, FAHIMA
Kuehn Consulting, LLC
Waukesha, WI 53186
(262) 574-1064
LKuehn1@wi.rr.com
Learning Objectives

• At the conclusion of this program, you will be able to:
  – Describe the system design for ICD-10-PCS
  – Explain how to build a code using the index and tables
  – Identify the root operations in the last five root operation groups
  – Identify the common feature within each of the last five root operation groups
  – Explain the use of the remaining PCS sections
System Structure - 16 Sections

- Medical and Surgical
- Obstetrics
- Placement
- Administration
- Measurement and Monitoring
- Extracorporeal Assistance and Performance
- Extracorporeal Therapies
- Osteopathic
- Other Procedures
- Chiropractic
- Imaging
- Nuclear Medicine
- Radiation Oncology
- Physical Rehabilitation and Diagnostic Audiology
- Mental Health
- Substance Abuse Treatment
ICD-10-PCS Index

• Provides the first three or four characters of the code
• Refers the coder to the correct code table
• The code tables must always be used to obtain the complete code
• No eponyms are included
ICD-10-PCS Tables

Each table contains four columns and a varying numbers of rows

Column: Specifies the allowable values for characters 4 through 7

Row: Specifies the valid combinations of values
<table>
<thead>
<tr>
<th>Body Part</th>
<th>Approach</th>
<th>Device</th>
<th>Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esophagus, Upper</td>
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<td>Z No Device</td>
<td>X Diagnostic, Z No Qualifier</td>
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<td>Esophagus, Middle</td>
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<td>Esophagus, Lower</td>
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<td>Stomach, Pylorus</td>
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<td>Large Intestine</td>
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<td>Ascending Colon</td>
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<td>Transverse Colon</td>
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<td>Descending Colon</td>
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<td>Sigmoid Colon</td>
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<td>Rectum</td>
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Colonoscopy with polypectomy of ascending colon = 0DBK8ZZ
<table>
<thead>
<tr>
<th>Root Operations</th>
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<tr>
<td>Alteration</td>
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<tr>
<td>Bypass</td>
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<tr>
<td>Change</td>
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<td>Control</td>
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<td>Map</td>
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<td>Occlusion</td>
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<td>Reattachment</td>
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<td>Release</td>
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<td>Removal</td>
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<td>Transfer</td>
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<td>Transplantation</td>
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</table>
Nine Root Operation Groups

- Root operations that take out some or all of a body part
- Root operations that take out solids, fluids, or gases from a body part
- Root operations that involve cutting or separation only
- Root operation that put in, put back, or move some or all of a body part
Nine Root Operation Groups

- Root operations that alter the diameter or route of a tubular body part
- Root operations that always involve a device
- Root operations that involve examination only
- Root operations that define other repairs
- Root operations that define other objectives
“Tubular” Group

Root operations that alter the diameter/route of a tubular body part

- Restriction
- Occlusion
- Dilation
- Bypass

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Tubular Body Parts

• Hollow structures that carry fluid or gas/air
• No openings – Circulatory and Lymphatic systems
• Opening at one end – Respiratory and nose, Genitourinary, ear canal
• Opening at both ends – GI system, including hepatobiliary tree
Restriction (V)

- **Definition:** Partially closing the orifice or lumen of a tubular body part
- **Explanation:** The orifice can be a natural orifice or an artificially created orifice
- **Classic examples:**
  - Esophagogastric fundoplication
  - Cervical cerclage
- **More challenging example:**
  - Clipping of cerebral aneurysm
  - Placement of restrictive stent in lacrimal duct
Occlusion (L)

Definition:
Completely closing the orifice or lumen of a tubular body part

Explanation:
The orifice can be a natural orifice or an artificially created orifice.

Examples:
- Fallopian tube ligation
- Embolization of vascular supply, intracranial meningioma
- Ligation of inferior vena cava
Dilation (7)

Definition:
Expanding an orifice or the lumen of a tubular body part

Explanation:
The orifice can be a natural orifice or an artificially created orifice. Accomplished by stretching a tubular body part using intraluminal pressure or by cutting part of the orifice or wall of the tubular body part.

Examples:
• Percutaneous transluminal angioplasty with or without stent
• Pyloromyotomy
Example 2
PTCA of Two Coronary Arteries; One with Stent and One Without

PTCA (percutaneous transluminal coronary angioplasty)

see Dilation, Heart and Great Vessels 027

Dilation

Fallopian Tube
  Left 0U76
  Right 0U75

Fallopian Tubes, Bilateral 0U77

Hymen 0U7K

Ileum 0D7B
Dilation of Heart and Great Vessels – 027 Table

<table>
<thead>
<tr>
<th>Section</th>
<th>0</th>
<th>Medical and Surgical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body System</td>
<td>2</td>
<td>Heart and Great Vessels</td>
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<tr>
<td>Operation</td>
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<th>Body Part</th>
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<th>Device</th>
<th>Qualifier</th>
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</thead>
<tbody>
<tr>
<td>0 Coronary Artery, One Site</td>
<td>0 Open</td>
<td>4 Intraluminal Device, Drug-eluting</td>
<td>6 Bifurcation</td>
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<tr>
<td>1 Coronary Artery, Two Sites</td>
<td>3 Percutaneous</td>
<td>D Intraluminal Device</td>
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<tr>
<td>2 Coronary Artery, Three Sites</td>
<td>4 Percutaneous Endoscopic</td>
<td>T Intraluminal Device, Radioactive</td>
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</tr>
<tr>
<td>3 Coronary Artery, Four or More Sites</td>
<td></td>
<td>Z No Device</td>
<td></td>
</tr>
</tbody>
</table>

PTCA of Two Coronary Arteries – One with Stent and One Without = 02703DZ and 02703ZZ
Bypass (1)

- Definition: Altering the route of passage of the contents of a tubular body part
- Explanation: Rerouting contents around an area of a body part to another distal (downstream) area in the normal route; rerouting the contents to another different but similar route and body part; or to an abnormal route and another dissimilar body part. It includes one or more concurrent anastomoses with or without the use of a device such as autografts, tissue substitutes and synthetic substitutes
Bypass (1)

• Classic examples:
  – Coronary artery bypass
  – Colostomy formation

• More challenging examples:
  – Ventriculoperitoneal shunt
  – Roux-en-Y gastric bypass to jejunum
## Bypass with Free Graft

<table>
<thead>
<tr>
<th>Body Part</th>
<th>Qualifier</th>
<th>Body Part</th>
<th>Qualifier</th>
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<tbody>
<tr>
<td>FROM</td>
<td>TO</td>
<td>NUMBER OF SITES TREATED</td>
<td>FROM</td>
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</tbody>
</table>

Non-Coronary  
Coronary Artery
Which Root Is It?

- Tracheostomy placement
  A. Bypass
  B. Dilation
  C. Occlusion
  D. Restriction
The answer is....

Tracheostomy placement

C. Bypass

A bypass is created from the trachea to the skin to allow air to pass into and out of the lungs.
Let’s Code – Poll Question

PTCA of one coronary artery site, bare metal stent inserted

Root operation?
1. Bypass
2. Dilation
3. Restriction
• PTCA of one coronary artery site, bare metal stent inserted

• Root operation?

• Dilation
<table>
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<th>Approach</th>
<th>Device</th>
<th>Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Coronary Artery, One Site</td>
<td>0 Open, 3 Percutaneous, 4 Percutaneous Endoscopic</td>
<td>4 Drug-eluting Intraluminal Device</td>
<td>6 Bifurcation, Z No Qualifier</td>
</tr>
<tr>
<td>1 Coronary Artery, Two Sites</td>
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<tr>
<td>2 Coronary Artery, Three Sites</td>
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<tr>
<td>3 Coronary Artery, Four or More Sites</td>
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<tr>
<td>F Aortic Valve</td>
<td>0 Open, 3 Percutaneous, 4 Percutaneous Endoscopic</td>
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<td>J Tricuspid Valve</td>
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<td>P Pulmonary Trunk</td>
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<tr>
<td>T Pulmonary Vein, Left</td>
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<tr>
<td>V Superior Vena Cava</td>
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<td></td>
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<tr>
<td>W Thoracic Aorta</td>
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</table>

Answer: 02703DZ
“Device” Group

Root operations that always involve a device

- Insertion
- Removal
- Revision
- Change
- Replacement
- Supplement

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Insertion (H)

Definition:

Putting in a non-biological appliance that monitors, assists, performs, or prevents a physiological function but does not physically take the place of a body part.

Examples:

- Insertion of:
  - radioactive implant
  - central venous catheter
  - Pacemaker

Note: Index states “Insertion of device in....” to remind you that this always involves a device.
Ureteral Stents

• Renal pelvis to the bladder
• Device name?
  – Intraluminal device
• Intent of the procedure?
  – Dilation
### Dilation versus Insertion

**Insertion:** Putting in a nonbiological appliance that monitors, assists, performs, or prevents a physiological function but does not physically take the place of a body part.

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<tr>
<th>Section</th>
<th>Body System</th>
<th>Operation</th>
<th>Approach</th>
<th>Device</th>
<th>Qualifier</th>
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<td>7</td>
<td>Via Natural or Artificial Opening</td>
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<td>Via Natural or Artificial Opening Endoscopic</td>
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<td>9 Ureter</td>
<td>0 Open</td>
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<td>4 Percutaneous Endoscopic</td>
<td>7 Via Natural or Artificial Opening</td>
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<td>3 Kidney Pelvis, Right</td>
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<td>6 Ureter, Right</td>
<td>7 Ureter, Left</td>
<td>8 Ureter, Bilateral</td>
<td>0 Open</td>
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</table>
Removal (P)

• Definition: Taking out or off a device from a body part
• Explanation: If the device is taken out and a similar device is put in without cutting or puncturing the skin or mucous membrane, the procedure is coded to the root operation Change. Otherwise, the procedure for taking out the device is coded to the root operation Removal and the procedure for putting in the new device is coded to the root operation performed
Removal (P)

• Classic examples:
  – Drainage tube removal
  – Cardiac pacemaker removal

• More challenging examples:
  – Removal of internal fixation hardware, infected surgical mesh, or neurostimulator lead

• Look for type of device
Revision (W)

- **Definition:** Correcting, to the extent possible, a malfunctioning or displaced device

- **Explanation:** Revision can include correcting a malfunctioning or displaced device by taking out or putting in components of the device such as a screw

- **Classic examples:**
  - Adjustment of pacemaker lead or hip prosthesis

- **More challenging example:**
  - Shortening intramedullary nailing system
Example 2
Percutaneous exchange of 1 screw in internal fixation plate of left tibia

Revision of device in continued
Tendon
  Lower 0LWY
  Upper 0LWX
Testis 0VWD
Thymus 07WM
Thyroid Gland 0GWK
Tibia
  Left 0QWH
  Right 0QWG
<table>
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<th>Body System</th>
<th>Operation</th>
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**Revision**: Correcting, to the extent possible, a portion of a malfunctioning device or the position of a displaced device.

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<th>Body Part</th>
<th>Approach</th>
<th>Device</th>
<th>Qualifier</th>
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<tbody>
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<td>2 Pelvic Bone, Right</td>
<td>0 Open</td>
<td>4 Internal Fixation Device</td>
<td>Z No Qualifier</td>
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<td>3 Pelvic Bone, Left</td>
<td>3 Percutaneous</td>
<td>5 External Fixation Device</td>
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<tr>
<td>6 Upper Femur, Right</td>
<td>4 Percutaneous Endoscopic</td>
<td>7 Autologous Tissue Substitute</td>
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<tr>
<td>7 Upper Femur, Left</td>
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<td>4 Synthetic Substitute</td>
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<tr>
<td>8 Femoral Shaft, Right</td>
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<td>5 Nonautologous Tissue Substitute</td>
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<td>9 Femoral Shaft, Left</td>
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<td>B Lower Femur, Right</td>
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<td>C Lower Femur, Left</td>
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<td>E Patella, Left</td>
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<td>H Tibia, Left</td>
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<td>R Toe Phalanx, Left</td>
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**Answer**: 0QWH04Z
Change (2)

- Definition: Taking out or off a device from a body part and putting back an identical or similar device in or on the same body part without cutting or puncturing the skin or a mucous membrane.
- Explanation: All Change procedures are coded using the approach *External*.
- Classic examples:
  - Urinary catheter change, Gastrostomy tube change.
Replacement (R)

• **Definition:** Putting in or on biological or synthetic material that physically takes the place and/or function of all or a portion of a body part.

• **Explanation:** The biological material is non-living, or the biological material is living and from the same individual. The body part may have been previously taken out, previously replaced, or may be taken out concomitantly with the *Replacement* procedure.
Replacement (R)

- If the body part has been previously replaced, a separate *Removal* procedure is coded for taking out the device used in the previous replacement

- Classic examples:
  - Total hip replacement,
  - Bone graft or free skin graft

- More challenging examples:
  - Corneal transplant from donor
  - Mitral valve replacement, porcine valve
Supplement (U)

• Definition: Putting in or on biological or synthetic material that physically reinforces or augments the function of a body part

• Explanation: The biological material is non-living, or the biological material is living and from the same individual. The body part may have been previously replaced. If the body part has been previously replaced, the Supplement procedure is performed to physically reinforce and/or augment the function of the replaced body part
Supplement (U)

- Classic examples:
  - Herniorrhaphy using mesh
  - Free nerve graft
  - Mitral valve ring annuloplasty
  - Place a new acetabular liner in a previous hip replacement
Which Root Is It?

Placement of a PICC line into Superior Vena Cava

1. Occlusion
2. Restriction
3. Insertion
4. Supplement
The answer is....
Placement of PICC line into Superior Vena Cava

C. Insertion

Peripherally inserted central catheter is coded to the location where the catheter terminates (ends)
Let’s Code – Poll Question

Full thickness skin graft from right thigh to left hand

Root operation?

1. Reposition
2. Supplement
3. Replacement
Full thickness skin graft from right thigh to left hand

Root operation?

Replacement
Answer: 0HRGX73
What else?
Excision of graft material
“Exam” Group

Root operations involving examination only

- Inspection
- Map

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Inspection (J)

Definition:
Visually and/or manually exploring a body part

Note: If procedure is attempted but stopped after “the first look,” code the root – Inspection.

Explanation:
Visual exploration may be performed with or without optical instrumentation. Manual exploration may be performed directly or through intervening body layer.

Examples:
• Diagnostic cystoscopy
• Exploratory laparotomy
• Diagnostic sinus endoscopy
Map (K)

• Definition: Locating the route of passage of electrical impulses and/or locating functional areas in a body part
• Explanation: Applicable only to the cardiac conduction mechanism and the central nervous system
• Examples:
  – Cardiac mapping or cortical mapping
Which Root Is It?

• Procedure discontinued due to cardiac arrhythmia, after thoracotomy but without any other procedure being performed
  A. Repair
  B. Inspection
  C. Map
  D. Dilation
The answer is....

Procedure discontinued after thoracotomy

B. Inspection

Guideline B3.3 – If the intended procedure is discontinued, code the procedure to the root operation performed. If a procedure is discontinued before any other root operation is performed, code the root operation Inspection of the body part or anatomical region inspected.
“Repair” Group

Root operations that define other repairs

› Repair
› Control

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Repair (Q)

Definition:
Restoring, to the extent possible, a body part to its normal anatomic structure and function

Explanation:
Used only when the method to accomplish the repair is not one of the other root operations

Examples:
- Herniorrhaphy
- Suture of laceration
Control (3)

- Definition: Stopping, or attempting to stop, post-procedure bleeding
- Explanation: The site of the bleeding is coded as an anatomical region and not to a specific body part
- Classic examples:
  - Control of post-prostatectomy or post-tonsillectomy hemorrhage
- More challenging example:
  - Exploration and ligation of post-op arterial bleed
Example 3
Repair of laceration, 3.7 cm of Right Forearm

Repair continued
Skin
Hand
Left **OHQGXZZ**
Right **OHQFXZZ**
Lower Arm
Left **OHQEXZZ**
Right **OHQDXZZ**
Lower Leg
Left **OHQLXZZ**
Right **OHQKXZZ**
“Left Overs” Group

Root operations that define other objectives

- Fusion
- Alteration
- Creation

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Training the Health Care Workforce
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Fusion (G)

- Definition: Joining together portions of an articular body part rendering the articular body part immobile.
- Explanation: The body part is joined together by fixation device, bone graft, or other means.
- Classic examples:
  - Spinal fusion
  - Ankle arthrodesis
- More challenging example:
  - Interphalangeal joint fusion using a pin.
Alteration (0)

- **Definition:** Modifying the anatomical structure of a body part without affecting the function of the body part.

- **Explanation:** Principal purpose is to improve appearance.

- **Classic examples:**
  - Face lift
  - Breast augmentation

- **More challenging example:**
  - Liposuction of abdomen
Creation (4)

- Definition: Making a new genital structure that does not take over the function of a body part
- Explanation: Used only for sex change operations
- Examples:
  - Creation of vagina in a male
  - Creation of penis in a female
Which Root Is It?

• Abdominoplasty (tummy tuck)
  A. Alteration
  B. Fusion
  C. Supplement
  D. Creation
The answer is....

Abdominoplasty (tummy tuck)

A. Alteration

This procedure is done specifically to enhance appearance without affecting function
Let’s Code – Poll Question

L1-L2 arthrodesis created using an interbody fusion device (cage), open approach through the back

Root Operation?

1. Repair
2. Fusion
3. Creation
• L1-L2 arthrodesis with an interbody fusion device (cage), open approach through the back
• Root Operation?
• Fusion
**Section**: Medical and Surgical  
**Body System**: Lower Joints  
**Operation**: Fusion: Joining together portions of an articular body part rendering the articular body part immobile

<table>
<thead>
<tr>
<th>Body Part</th>
<th>Approach</th>
<th>Device</th>
<th>Qualifier</th>
</tr>
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<tbody>
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<td>Open</td>
<td>7 Autologous Tissue Substitute</td>
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![Diagram of vertebrae](image)
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**Qualifier**

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**Answer:**

0SG000AJ
Obstetrics Section (1)

- Same character specification as Med-Surg
- Includes only procedures performed on the products of conception:
  - Fetus, placenta, amniotic sac, amniotic fluid and umbilical cord
- Operations on the pregnant female are coded in the Medical and Surgical section (e.g., episiotomy)
Example 4
Cesarean Delivery of Liveborn Infant, Low Cervical Delivery

Cesarean – see Extraction, Products of Conception 10D0
Forceps – see Extraction, Products of Conception 10D0
Manually assisted 10E0XZZ
Products of Conception 10E0XZZ
Vacuum assisted – see Extraction, Products of Conception 10D0

Cesarean deliveries are coded with root operation Extraction
## Cesarean Delivery – 10D Table

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<th>Body System</th>
<th>Operation</th>
<th>Description</th>
<th>Body Part</th>
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<td>8 Other</td>
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</table>

Cesarean Delivery of Liveborn Infant, Low Cervical = **10D00Z1**
Placement Section (2)

1. Section
2. Root Operation
3. Body System
4. Body Region
5. Approach
6. Device
7. Qualifier
Placement Section

- Roots are:
  - Change,
  - Compression,
  - Dressing,
  - Immobilization,
  - Packing,
  - Removal,
  - Traction

- Includes only those procedures performed without making an incision or puncture

- Device inserted as root operation of Insertion in Medical-Surgical Section

- Example: Cast, lower arm, left – 2W3DX2Z
Administration Section (3)

1. Section
2. Root Operation
3. Body System
4. Body Region
5. Approach
6. Qualifier
7. Substance
Administration

• Categorized according to substance administered

• Root operations are:
  – Introduction
  – Irrigation (includes cleansing solutions)
  – Transfusion (includes only blood and blood products)
  – Example: Antibiotic IM injection - 3E01329
Measurement & Monitoring Section (4)
Measurement and Monitoring

• Measurement – Determining the level of a physiological or physical function at a point in time
  – Example: EKG – 4A02X4Z

• Monitoring – ….. repetitively over a period of time
  – Example: Holter Monitor – 4A12X45
Extracorporeal Assistance, Performance (5) and Therapies (6)
Extracorporeal Sections

• Assistance and Performance
  – CPAP
  – Mechanical ventilation
  – CP Bypass
  – Cardioversion

• Therapies
  – Hyper- and Hypothermia
  – Pheresis
  – Ultraviolet light therapy (Bili-lites)
Other Procedures (8)
Other Procedures

Assigned based on the Method character:

- Fluid collection from an indwelling device
- Robotic assisted procedures
- Computer assisted procedures
Imaging Section (B)

1. Section
2. Root Type
3. Body System
4. Body Part
5. Contrast
6. Qualifier
7. Qualifier
Imaging

• Root Types:
  – Plain Radiography
  – Fluoroscopy
  – CT scan
  – MRI
  – Ultrasonography
  – Example: Chest X-ray, PA/Lat – BW03ZZZ
Nuclear Medicine Section (C)
Nuclear Medicine

• Root Types:
  – Planar Nuclear Medicine Imaging
  – Tomographic Nuclear Medicine Imaging
  – Positron Emission Tomography
  – Non-imaging Nuclear Medicine Uptake
  – Non-imaging Nuclear Medicine Probe
  – Non-imaging Nuclear Medicine Assay
  – Systemic Nuclear Medicine Therapy
  – Example: I-131 Thyroid uptake – CG42GZZ
Remaining Sections

• Osteopathic (7)
• Chiropractic (9)
• Radiation Therapy (D)
• Physical Rehabilitation and Diagnostic Audiology (F)
• Mental Health (G)
• Substance Abuse Treatment (H)
Summary

• Learned the system design concepts and how to use the index and tables
• Toured the last five groups of root operations
• Experienced the remaining sections of ICD-10-PCS
• Next step is Coding Scenarios in ICD-10-PCS, Part 3 in the series
Questions?
Thank you!

Contact Information:

Jennifer Frank,  
Vice President Education  
Wisconsin Hospital Association

O: 608-274-1820  
F: 608-274-8554  
jfrank@wha.org  
http://www.wha.org

Contact Information:

Lynn Kuehn, MS, RHIA, CCS-P, FAHIMA  
President  
Kuehn Consulting, LLC  
Waukesha, WI

O: 262-574-1064  
F: 262-574-0828  
lkuehn1@wi.rr.com  
www.KuehnConsulting.com