

ICD-10-PCS
General
Code Set Training

2013

Part 6



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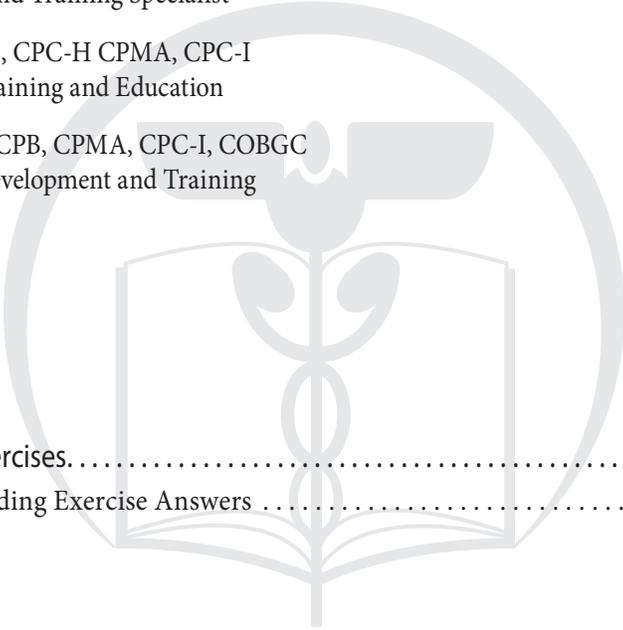
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Bonus Coding Exercises

Case 1

Preoperative Diagnosis: Coronary artery disease of the proximal left anterior descending artery, 80 percent and first diagonal branch, 75 percent.

Postoperative Diagnosis: Coronary artery disease of the proximal left anterior descending artery, 80 percent and first diagonal branch, 75 percent.

Procedure: The patient was brought to the operating room and placed in the supine position. After adequate endotracheal anesthesia was induced, appropriate monitoring lines were placed. Chest, abdomen and legs were prepped and draped in sterile fashion. The saphenous vein was harvested through several small incisions along the right thigh. The graft was prepared by ligating all branches with 4-0 silk and flushed with vein solution. The leg was closed with running 3-0 Dexon subcu and running 4-0 Dexon on the skin.

A sternal incision was then made and carried down to the sternum. The sternum was divided with a sternal saw and held open with the sternal spreader. The pericardium was opened and the patient placed on cardiopulmonary bypass and cooled.

The first diagonal branch was identified and opened and an end-to-side anastomosis was performed using the previously harvested vein graft. The vein was cut to length and anastomosed in a side to end fashion to the first diagonal branch distal to the area of stenosis. We then turned our attention to the left internal mammary artery and it was dissected free from its takeoff at the left subclavian bifurcation at the diaphragm and surrounded with papaverine-soaked gauze. The mammary was clipped distally, divided and spatulated for anastomosis. The left anterior descending was identified, opened and end-to-side anastomosis then performed with running 8-0 Prolene suture.

An incision was placed in the aorta and the vein was cut to fit this and sutured in place with running 5-0 Prolene suture. All anastomoses were inspected and noted to be patent and dry. The patient was weaned from cardiopulmonary bypass. Good hemostasis was noted.

A single mediastinal chest tube and bilateral pleural Blake drains were placed. The sternum was closed with figure-of-eight stainless steel wire. The sternal fascia closed with running #1 Vicryl, the subcutaneous was closed with running 2-0 Dexon, skin with running 4-0 Dexon subcuticular stitch. The patient tolerated the procedure well.

ICD-10-PCS code(s): _____

Case 2

Preoperative Diagnosis: Menorrhagia and irregular enlarged uterus

Postoperative Diagnosis: Menorrhagia and irregular enlarged uterus

Operation: TAH

Anesthesia: General

Gross Findings: Slightly irregular shaped uterus with increased vascularity. Normal tubes and ovaries

Operative Procedure: Patient was taken to the operating room where anesthesia was induced, prepped and draped in a sterile fashion in the supine position. A Pfannenstiel skin incision was made and carried down through the fascia and the fascia was incised and extended laterally and dissected off the rectus muscle. Rectus muscles were divided in the midline. Peritoneum tented up and entered sharply and extended superiorly inferiorly with good visualization of the bladder.

Upper abdomen explored. Kidneys were normal. There were adhesions of the omentum to the anterior abdominal wall.

O'Connor-Sullivan was placed into the incision, bowel packed away with moist laparotomy sponges and retracted bladder blade and bowel retractor were placed.

Uterus was grabbed and round ligaments were clamped bilaterally, transected and suture ligated. Next, windows were made and broad ligaments and the uterine ovarian ligaments were clamped, transected and doubly ligated. The peritoneum was taken down along the bladder flap and bladder flap pushed down with a sponge stick easily. The uterine artery was re-clamped bilaterally, transected and doubly ligated. Next, straights were used to take down the cardinal and uterosacral ligaments; these were clamped, transected and Heaney ligated. The anterior vagina was entered and the uterus and cervix were amputated using Jorgensen scissors. A running locking stitch 0 chromic was used to make the vaginal mucosal hemostatic. The uterosacral and cardinal ligaments were reimplanted and then 2-0 Chromic was used to close the cuff.

Irrigation was done. There was a small area of bleeding along the bladder flap. This was boved and all areas were hemostatic. T-drain was placed. The peritoneum closed over the cuff. Irrigation was done. All retractors, laps and sponges were removed. Peritoneum was closed with a running locking stitch of Chromic. Irrigation was done and the muscles were put together with a Chromic stitch. Irrigation was done again. All subfascial tissues were hemostatic. Fascia was closed with PDS. Irrigation was done again in the subcutaneous tissues; these were hemostatic and a flat drain was placed. Skin was closed with staples and interrupted 4-0 repeat. Sponge, lap and needle counts were correct x 2. Patient tolerated procedure well and was taken to recovery room.

ICD-10-PCS code(s): _____

Case 3

Procedure: CSF shunt replacement

After obtaining informed consent, the patient was placed in supine position. After adequate general anesthesia was obtained the patient's head, neck and abdomen were prepped and draped in the usual manner. An incision at the previous site of shunt insertions was made in the left posterior occipital area. The nonfunctioning ventricular shunt was removed through the previous burr hole and no additional burr holes were placed. The peritoneal end of the shunt was pulled out through the same incision. Next I placed a new ventricular catheter into the ventricle using the previous site as access to the ventricle. I then attached the ventricular catheter to a low-pressure bulb valve and secured this at the site.

Moving to the abdomen we made an incision directly below the previous site and using a trocar and a stab incision in the neck area we were able to tunnel the distal end of the shunt system catheter and connect it to the distal side of the low-pressure bulb valve. We then pumped the shunt until CSF was freely flowing from the other end. Dividing the rectus fascia and splitting the muscle I made an opening in the peritoneum and placed the shunt into the abdomen. All wound sites were closed and dressings applied. Patient tolerated the procedure well and was moved to PACU.

ICD-10-PCS code(s): _____

Case 4

Preoperative Diagnosis: Esophageal reflux; dysphagia; epigastric pain

Postoperative Diagnosis: Some mild inflammatory changes noted at the GE junction; hiatal hernia

Operation: EGD with biopsy using forceps.

Anesthesia: MAC

Complications: None

Specimen: Biopsy from GE junction

Gross Findings: No evidence of esophageal strictures or narrowing or varicosities but there was some inflammation noted at the GE junction on the stomach side. Representative biopsies were performed. Remaining part of the stomach and duodenum were unremarkable. She had moderate hiatal hernia.

Operative Procedure: Once the patient was properly identified and consent reviewed, the patient was brought to the endoscopy suite where the procedure was verified by patient as well as surgeon. Patient was placed in the supine semi-seated position. Flexible endoscope was passed under direct visualization into the esophagus. Esophagus was insufflated. Scope was advanced. Esophagus and GE junction were normal appearing. Right at the GE junction just distal to it on the stomach side, there were inflammatory changes and an area of inflammation. No evidence of active bleeding or ulceration. Representative biopsies were performed of this locale. Stomach was insufflated. Scope passed through the GE junction into the stomach. Stomach was insufflated. Scope was retroflexed. Cardia, fundus and antrum remaining parts were unremarkable. Scope was then advanced through the pylorus to the duodenum and passed duodenal sweep. Duodenum was unremarkable. Scope

was fully retrieved and patient was sent to the recovery room in stable condition. I instructed the patient to follow up with me in one week.

ICD-10-PCS code(s): _____

Case 5

Preoperative Diagnosis:

1. Medial meniscal tear, right knee.

Postoperative Diagnoses:

1. Small undersurface tear of the posterior horn, right medial meniscus.
2. Chondromalacia, medial femoral condyle.

Operation Performed: Arthroscopy with chondroplasty of the medial femoral condyle.

Anesthesia: General.

Description of Procedure: The patient was brought to the operating room and placed on the operating table in supine position. After induction of general anesthesia, the right thigh, knee, and leg were prepped with ChloroPrep and draped into a sterile field with sterile sheets and towels. A tourniquet on the proximal thigh was not inflated. A stab wound for a superolateral portal was made, and a cannula for inflow irrigation was introduced into the knee joint using a blunt trocar. The trocar was removed. The cannula was connected to the inflow irrigation. The knee joint was distended. A stab wound for an anterior portal was made just lateral to the patellar tendon, and the cannula for the arthroscope was introduced in the knee. In a similar manner, the blunt trocar was removed. The scope was inserted into the cannula, connected to the light source, video equipment, and suctioned. Careful examination of the knee was undertaken. Suprapatellar recess showed no evidence of loose bodies or joint pathology. Posterior surface of the patella was smooth. There was some minimal grooving on the trochlear surface of the femur. The lateral compartment showed normal articular cartilage on the femoral condyle and the tibial plateau. There was some mild degenerative fraying along the margins of the lateral meniscus, but no substantiative tears to inspection and probing. The intercondylar notch showed normal cruciate structures. The medial compartment showed normal articular cartilage on the tibial plateau. There was a small area of cartilage fraying and delamination along the medial aspect of the medial femoral condyle adjacent to the intercondylar notch and these were removed with sharp dissection. Inspection and probing of the medial meniscus revealed that the patient had a very small undersurface tear of the posterior horn of the medial meniscus. This was not a through-and-through tear and probing, it was definitely a stable tear. It was estimated to be only a few millimeters in length. I felt this certainly represented a stable tear and did not require meniscal resection.

ICD-10-PCS code(s): _____

Case 6

Preoperative Diagnosis(es):

1. Chronic ethmoid sinusitis.
2. Chronic maxillary sinusitis.
3. Deviated nasal septum, acquired.

Postoperative Diagnosis(es):

1. Chronic ethmoid sinusitis.
2. Chronic maxillary sinusitis.
3. Deviated nasal septum acquired.

Procedure(s) Performed:

1. Bilateral sinus endoscopy with ethmoidectomy.
2. Bilateral sinus endoscopy with maxillary antrostomy, with removal of tissue.
3. Septoplasty without cartilage graft.

Anesthesia: General.

Brief History: The patient is a 53-year-old female with a four to five month history of chronic sinusitis. This was maximally treated with steroid sprays, oral steroids and antibiotics without relief. CT scan revealed bilateral maxillary and ethmoid sinusitis with left nasal septal deviation. The decision was made to take the patient to the operating room for bilateral maxillary antrostomy, total ethmoidectomies, possible frontal sinus exploration and septoplasty. The risks and benefits of procedure were explained to the patient and she agreed to proceed.

Details of Procedure: The patient taken to the operating room, was placed in supine position on the operating room table. General face mask anesthesia was given until a deep plane of anesthesia was obtained. At that point, an endotracheal tube was placed by the anesthesiology service without difficulty. The table was then turned. Approximately 8 mL of 1 percent Lidocaine with 1:100,000 epinephrine was injected into the uncinata, middle turbinate and septum bilaterally. Afrin-soaked pledgets were then placed in the nasal cavities bilaterally. At that point, the patient was prepped and draped in routine fashion. Surgery began with the septoplasty. A hemitransfixion incision was performed in the left nasal cavity with a Cottle elevator. A suction Freer was then used to elevate a submucosal plane posteriorly to the anterior face of the sphenoid sinus on the left side. This was carried over the prominent region of the patient's deviated septum causing compression of the middle turbinate and middle meatus on the left side. A Cottle elevator was then used to transect the cartilage just anterior to the deviated segment. A submucosal plane was then elevated on the right side, through this cartilage transected region. The mucosal layer was elevated on the right side posteriorly again to the anterior face of the sphenoid sinus. Endoscopic scissors were then used to perform a superior and inferior cut of the cartilage back to the bony septum. This portion was removed with Takahashi rongeurs. The bony septum was then removed with Jansen-Middleton. The mucosal layers were then reapproximated, showing excellent room on both the left and right nasal cavities.

Attention was then turned towards the sinus surgery. Using a 0-degree nasal endoscope, the right nasal cavity was visualized. The middle turbinate was medialized in its inferior third with a Cottle

elevator. A sinus seeker was then used to infracture the uncinata. Back-biting forceps was then used to create a Parsons window in the uncinata. The uncinata was then taken down in full extent superiorly to the middle turbinate and posteriorly and inferiorly with a 4 mm StraightShot microdebrider. This allowed identification of the natural ostium on the right, which showed polypoid change. A large maxillary antrostomy was then performed with a StraitShot microdebrider. This allowed excellent visualization into the right maxillary sinus and there was no further evidence of disease. The right ethmoid bulla was then entered with a Cottle elevator in its midline. This allowed identification of the inside of the ethmoid bulla and face, micro-debriding of the ethmoid bulla in its inferior medial, superior anterior, posterior extent. The ethmoid bulla was removed up to the lamina papyracea. A large window was made in the basal lamella at that point, first with a Cottle elevator and then with a StraightShot microdebrider. This allowed removal of tissue into the right posterior ethmoid cells. The superior turbinate was identified and left intact. Removal of tissue was carried back to the anterior wall of the sphenoid sinus. The wound was then thoroughly irrigated with normal saline. An Afrin pledget was placed into the middle meatus on the right.

Attention was then turned towards the left nasal cavity. Again, the middle turbinate was identified and medialized in its inferior third. There was extensive polypoid change within the left medial meatus, including severe inflammation and purulent discharge from the left maxillary sinus. This was collected and sent for culture. The uncinata again was infractured with a sinus seeker. A back-biting forceps was used to create a Parsons window. Again, the uncinata was taken down with the 0 degree StraightShot microdebrider in its entire extent, inferiorly to superiorly, to its attachment to the middle turbinate. The natural ostium could not be identified secondary to severe inflammation. A sinus seeker was used to identify the natural ostium and the ostium was then back-fractured in the posterior and inferior direction. This allowed visualization of the left maxillary sinus, which was severely inflamed with purulent debris, which was suctioned with an olive tipped suction. A large maxillary antrostomy was then performed with 0 degree StraightShot microdebrider. This included the natural ostium secondary to palpation and back biting forceps of the anterior extent of the maxillary antrostomy to the nasal lacrimal canal. At that point, the ethmoid bulla was entered the midline with a Cottle elevator. The ethmoid bulla was then removed in its entire extent to the lamina papyracea with the StraightShot microdebrider. Again using a Cottle, the medial and inferior window was entered into the basal lamella, preserving an inferior strut, as was done on the right side. StraightShot microdebrider was then used to remove sinus tissue within the left posterior ethmoids, up to the skull base and posteriorly to the anterior wall of the sphenoid sinus. The superior turbinate was identified and preserved. The wound was then thoroughly irrigated with normal saline. The Afrin soaked pledgets were then removed. Absorbable NasoPore was placed into the middle meatus bilaterally to allow the preservation of the middle turbinate without lateralization and scarring. Doyle splints were then placed bilaterally between the middle turbinates and septum. This was sewn to the midline with a 4-0 Prolene stitch. The nasopharynx was then suctioned free of blood products. There was no further evidence of bleeding. At that point, the procedure was completed. The patient was awoken from general anesthesia, extubated and sent to the post anesthesia care unit in stable condition.

ICD-10-PCS code(s): _____

Case 7

Postoperative Diagnoses:

1. Chronic otitis media with effusion.
2. Chronic obstructive adenotonsillitis.
3. Failed medical therapy.

Procedures:

1. Bilateral microscopic tympanotomies with ventilation tube placement, 7 mm vent tubes.
2. Adenotonsillectomy.

Anesthesia: General.

Complications: None.

Procedure in Detail: A 2-year-old female taken to the OR, prepped and draped in a sterile manner. General anesthesia applied via endotracheal intubation by the anesthesia department. Operating microscope was brought in surgical field with direct visualization of the right external auditory canal via 3.5 mm ear speculum. All excessive cerumen was removed via loop. The patient had a preexisting PE tube that was lying within the external auditory canal. An incision was then manufactured in the anterior inferior quadrant of tympanic membrane utilizing the tympanostomy knife. The patient had significant mucopurulent debris within the middle ear cleft. It was evacuated with #5 Frazier lip suction. A 7 mm vent tube was then placed within the tympanic membrane without difficulty complications. Cortisporin drops along with the sterile cotton ball were applied. A similar procedure was performed in the contralateral side without difficulty, complications. Patient rotated to 90 degrees, the Mclvor oral retractor was then placed within the oral cavity suspended via the Mayo stand. Initially, the uvula was retracted superiorly, which revealed mild to moderate obstructive adenoidal hypertrophy. Adenoidectomy was then performed utilizing a small size curette. Approximately 1 tonsillar sponge was then placed within the posterior nasopharynx and left there for proximately 5 minutes. During this time, the tonsils were tentative. Upon physical examination, tonsils were +3 to 4 with definitely occluding the oropharyngeal airspace. Initially, the right tonsil was then grasped at the superior pole of the curved Allis and using electrocautery the right tonsil was dissected down access of the inferior pole. Hemostasis was easily obtained using suction cautery. Following this the left tonsil was then grasped with the superior pole of the curved Allis and again using electrocautery, the left tonsil was dissected down excess of the inferior pole. Hemostasis was easily obtained using suction cautery. The tonsillar sponge was removed from the posterior nasopharynx. The oral cavity and nasopharynx were irrigated with copious amounts of normal saline, which revealed no active hemorrhage or gross complications. The patient was sent to the recovery room in satisfactory condition and will be admitted for 23-hour observation for airway management with most probable discharge in the a.m.

ICD-10-PCS code(s): _____

Case 8

Physical Examination:

GENERAL, VITAL SIGNS: Reveals a well-developed, well-nourished female, who is afebrile with a pulse of 70, respirations 18, blood pressure 109/70.

HEENT: The tympanic membranes are gray and shiny. The nose reveals no obstruction or drainage. Oral cavity exam: No mucosal lesions. Nasopharynx: No mass, ulcerations. Hypopharynx and larynx are normal by indirect laryngoscopy.

NECK: Palpation of the neck reveals no adenopathy. There is a 1.5-2.0 cm midline thyroid mass.

A fine-needle aspiration biopsy of the thyroid gland was performed. She is to obtain an esophagram and return to the Otolaryngology Clinic in follow up.

ICD-10-PCS code(s): _____

Case 9

Preoperative Diagnosis:

1. Grade 3-4 cystocele.
2. Urinary stress incontinence
3. Urge incontinence.

Postoperative Diagnosis:

1. Grade 3-4 cystocele.
2. Urinary stress incontinence.
3. Urge incontinence.

Operation: Anterior Prolift cystocele repair and vaginal sling procedure with tension-free vaginal tape obturator approach.

Indications: A 45-year-old patient with a known history of urinary incontinence and a Grade 3-4 prolapse. The risks and complications of her procedures were explained, and she understands and gives written informed consent.

Procedure: After receiving adequate general anesthesia induction of laryngeal mask anesthesia, examination of the vaginal introitus was done revealing evidence of again a Grade 3-4 cystocele, a #18 French Foley catheter was left in place. Identification of the bladder neck was done by placing the Foley catheter against the bladder neck, and the first Allis was placed. The second Allis was placed to demarcate the area of the cervical os. Infiltration between the two areas with Ropivacaine 0.5 percent was done, and the patient then had incision made to the anterior vaginal fascia. The cystocele was dissected using sharp and blunt dissection using Kittner dissectors until the obturator foramina were identified on each side. Then the bladder was retracted away in essence from the area of the cystocele to this level. Markings were done parallel 2 cm from the inguinal site and the urethra, 2 cm over, 2 cm down, and incisions were made. Using the Prolift obturator passers, first advancing anterior the most anterior arms of the sling in passers and then posterior skating

through the arcade ligament before coming into the vagina. After each pass of the Prolift obturator and tunneler placement, cystoscopic exam was done with no perforation of the bladder seen.

Once the tunnelers were placed and passers were put in place, the actual Prolift mesh was fashioned so it would be flat against the bladder area. The tail end was trimmed by at least 3 cm to allow it to lie flat against the area of the vaginal incision, and we proceeded to then after tightening each arm and adjusting it so it was a nonocclusive-type hammock to the area, the redundant Prolift arms were then removed flush with the skin. These areas were closed with 4-0 chromic. At the end of the procedure Neomycin and Bacitracin irrigation was used to irrigate the vaginal incision site, and then closure of the vaginal incision site was done with a 2-0 Vicryl suture.

Our attention was then turned to the mid urethra where again infiltration of Ropivacaine and Xylocaine mixture with 1:100,000 of epinephrine was done with Xylocaine 1 percent, and once this was accomplished an incision was made. Dissection was done to the obturator foramen, approximately 1 cm over from the inguinal incision site, paralleling the urethra and 2 cm upward. Once this was done and dissection was done through each obturator foramen, the tunnel was put in place. In a clockwise fashion on the patient's right, counter-clockwise fashion on the patient's left, the deep venous thrombosis obturator was then put in place. A #12 French Hegar dilator was placed between the urethra and the sling to allow for the tension-free approach, and once this was done the patient then had irrigation of this incision site. The redundant TVT tape was also flush with the skin, and 4-0 chromics were used to close the exit and incision sites. The patient then had closure of this incision site with a 3-0 Vicryl suture. Vaginal pack was placed. The patient was taken to the Recovery Room in stable condition

ICD-10-PCS code(s): _____

Case 10

Indications: Patients abdomen is distended; it is moderately tender in the upper abdomen with severe tenderness in the left upper quadrant. There are no detectable masses. He has strong femoral pulses. He has palpable distal pulses. Normal rectal exam with no gross blood. There is a Foley catheter in place with clear urine

CAT scan without contrast shows a large amount of blood in the abdominal cavity surrounding the liver and very inhomogeneous area with a large amount of fluid collection and a different density in the area of the spleen. Introduction of low osmolar contrast reveals some evidence of active hemorrhage. There may be some slight contusion of the liver posterior on the right.

CT of the head and plain films of the pelvis and chest are all within normal limits.

ICD-10-PCS code(s): _____

Case 11

Preoperative Diagnosis: Abnormal mammogram right breast, two separate abnormal microcalcified areas.

Postoperative Diagnosis: Abnormal microcalcifications

Procedure: Right stereotactic core needle biopsy of two separate abnormal microcalcified areas. These were labeled as 12 o'clock and lateral.

Anesthesia: 1 percent Xylocaine.

Surgeon: Sam Brown MD

Complications: None.

Estimated Blood Loss: Negligible.

Technique: The 12 o'clock lesion was approached first. A craniocaudad approach was taken with Dr. Brown targeting of both lesions. Pre and post-fire films were taken and a ¼' incision made with Xylocaine infiltration. Core samples were obtained with the 8-gauge sampler in 4-quadrant biopsy and post-biopsy film as well as specimen radiography confirmed adequate sampling of the microcalcified areas. A clip was then placed at this site. The lateral lesion was approached with a craniocaudad approach as well. This area was targeted and a ¼' incision made. Post-placement film confirmed good placement of the sampler. Core samples were obtained with the 8-gauge sampler in four quadrants and post-biopsy film as well as specimen radiography confirmed adequate sampling. A clip was placed in the lateral lesion similar to the 12 o'clock lesion. Steri-Strips and Benzoin were applied. The patient was taken for film screen mammogram. A pressure dressing was applied and she will call for a pathology report.

ICD-10-PCS code(s): _____

Case 12

Preoperative Diagnosis: Fibular fracture, left ankle

Postoperative Diagnosis: Fibular fracture, left ankle.

Procedure Performed: Open reduction and internal fixation of fibular fracture, left ankle.

Anesthesia: General.

Estimated Blood Loss: Minimal

Material Used: 2-0 Vicryl, 3-0 Vicryl, 3-0 nylon, 4-0 nylon, and one 3.5 x 20 mm partially threaded cortical screw and one 3.5 x 22 mm partially threaded cortical screw.

Complications: None.

Description of The Procedure: The patient was brought into the operating room and placed on the operating room table in the supine position. A 24 cc of 0.5 percent Marcaine plain was injected in a block fashion to the left ankle. A well-padded thigh tourniquet was applied to her left thigh and

then left foot and lower leg were scrubbed, prepped, and draped in the usual aseptic manner. At this time, a 5 cm linear incision was made laterally over the fibula and the area with the fracture. This incision was deepened down to bone with care taken to avoid all neurovascular structures. The periosteum was partially reflected and revealed a large spiral fracture with a large posterior fragment. Large amount of hematoma was noted in and around the fracture site. This was suctioned and removed. There was still quite a bit of swelling in the subcutaneous tissue. Otherwise, the fracture was significant, but only two pieces were noted. Again, all the hematoma was removed and then the fracture site was reduced back into alignment and fracture fragments held in position with two bone clamps. C-arm fluoroscopy was utilized with dorsal lateral and ankle view to ensure that the bony fragments were in proper position and they were. Using standard AO technique, one 3.5 x 20 mm partially threaded cortical screw was placed across the fracture site and then one 3.5 x 22 mm partially threaded cortical screw was also placed across the fracture site. This brought adequate reduction and closure of the fracture. The bone clamps were removed. The C-arm again was utilized with dorsal and lateral view to ensure proper position of all screws and that proper alignment was maintained, and it was. The area was flushed copiously with normal saline and then closure was achieved using 2-0 Vicryl to close periosteum, 3-0 Vicryl for deep closure, and 3-0 nylon to close the proximal aspect of the skin incision and then 4-0 nylon to close the distal aspect of the skin incision. At this time, 12 cc of 0.5 percent Marcaine plain was injected and then around the incision site, and then dressing was applied consisting of Betadine soaked Adaptic, gauze, Kling, and a posterior mold applied in a mildly compressive manner. The thigh tourniquet was released and immediate warmth and perfusion was noted to all digits of the left foot. The patient was then transferred to recovery room with all vital signs stable and neurovascularly intact to the left foot.

The patient will follow up as outpatient.

ICD-10-PCS code(s): _____

Case 13

Preoperative Diagnosis: Upper airway obstruction.

Postoperative Diagnosis: Laryngomalacia.

Procedures: 1. Microdirect laryngoscopy. 2. Bronchoscopy. 3. Laser supraglottoplasty.

Anesthesia: General.

Indications for Procedure: The patient is a 9-year-old female who presents with a significant amount of upper airway obstruction. Sleep study seems mildly abnormal. However, when awake she is having multiple episodes of significant retractions and obstruction. She is brought to the operating room for an airway exam.

Findings: The patient was found to have 1 to 2+ tonsils that did not appear to be significantly obstructing. She was found to have about 30 percent obstruction from the level of the adenoids. She was found to have a floppy supraglottic airway that seems to collapse into her airway when dynamically breathing. This was found to be the most significant finding. The subglottic airway, tracheal airway, and bronchial airway were all normal.

Description of Procedure: The patient was brought to the operating room and placed supine on the operating table where general anesthesia was successfully induced. The table was turned 90 degrees. The patient was breathing spontaneously when a flexible laryngoscope was introduced into the nasal cavity and dynamically the airway was examined. The findings were very significant for mostly dynamic obstruction at the level of the supraglottic airway. There were no other significant abnormalities that were noted. The patient was then placed in suspension where a 13—laryngoscope was used and a Hopkins II telescope was used to examine the entire airway all the way down to the right and left main stem bronchus. Significant amounts of copious secretions were suctioned out of his airway. The patient was then placed in suspension and a laser supraglottoplasty was performed by first dividing the aryepiglottic fold on the right side and removing the superior portion of the cuneiform cartilage, identically done on the left side. Care was taken to avoid injury to the interarytenoid space. An approximately 3 to 4 mm piece of tissue was removed bilaterally. This procedure was successful. The procedure was then terminated. The patient was allowed to come out of anesthesia and was then transferred to the PACU in stable condition.

ICD-10-PCS code(s): _____

Case 14

Preoperative Diagnosis(es): Cortical cataract, left eye.

Postoperative Diagnosis(es): Cortical cataract, left eye.

Anesthesia: General anesthesia with retrobulbar anesthesia.

Procedures: Extracapsular cataract extraction by phacoemulsification via clear cornea temporal approach with implantation of an acrylic, foldable, posterior chamber intraocular lens in the left eye.

Summary: The patient was taken to the operating room and placed on the table in the supine position. A peribulbar and retrobulbar injection of 2 percent Lidocaine with epinephrine was performed. The skin around the left eye was prepped and draped in the usual sterile fashion. A lid speculum was put in place. A paracentesis was made 45 degrees to the left of the incision site. The anterior chamber was filled with viscoelastic. A 3.2 mm diamond keratome was used to make a clear cornea 1.5 mm tunnel incision into the anterior chamber temporally. An anterior capsulotomy was performed with capsulorrhexis technique. Hydrodissection was performed with balanced salt solution (BSS) through a blunt cannula. Phacoemulsification of the lens nucleus was performed without complication. The remainder of the lens cortex was removed with the irrigation and aspiration tip. The posterior capsule was left intact. No vitreous was lost. Provisc was placed in the bag and anterior chamber. The incision was extended to a 3.5 mm width with the diamond blade. An acrylic, foldable, posterior chamber lens was placed in the capsular bag. The Provisc was removed from the anterior chamber with the irrigation and aspiration tip. The wound closed adequately requiring no suture. The lid speculum was removed. Pilopine gel was placed on the cornea. The eye was covered with Dexadoin ointment. A clear shield was taped in place. The patient tolerated the procedure well and left the operating room in good condition.

ICD-10-PCS code(s): _____

Case 15

Preoperative Diagnosis: Low back pain and lumbar radiculopathy secondary to a herniated nuclear pulposus at L5–S1

Postoperative Diagnosis: Same

Procedure Performed: The patient presents for left transforaminal epidural injection at L5-S1.

Complications: None.

Description of Procedure: Patient was interviewed, consented. Patient was then brought to the treatment room in prone position. Betadine prep was done. Fluoroscopy was used at 15 degree oblique angle to open up the area for selective nerve block on the left side at L5–S1. A 25 gauge needle was utilized with 1 percent Lidocaine with localization. Skin wheal was done followed by 3-1/2 inch 20 gauge spinal needle was utilized in an oblique angle. It was advanced. Lateral view was also checked and the needle was in the L5–S1 left neural foramen. At that time there was negative aspiration and 1.5 mL of 0.25 percent bupivacaine with 4 mg of Kenalog was injected. Patient tolerated procedure. Patient was then brought to recovery in satisfactory condition. Patient will follow up in 7–10 days.

ICD-10-PCS code(s): _____

Case 16

Principal Diagnosis: Left ring finger ulnar digital nerve laceration.

Postoperative Diagnosis: Left ring finger ulnar digital nerve laceration.

Procedure Performed: Exploration and repair of left ring finger ulnar digital nerve with operating microscope.

Antibiotics: Ancef perioperative

Intraoperative Findings: Complete laceration of the ulnar digital nerve at the palmar digital crease.

Description of Procedure: The patient was brought to the operating theater where the metacarpal block anesthetic was administered by the surgeon consisting of 10 mL of 0.5 percent Marcaine and 2 percent Lidocaine plain mixed in 1:1 fashion at the base of the left ring finger. The tourniquet was placed high up on the left upper arm. The left and upper extremity were prepped and draped in the usual sterile fashion. The arm was exsanguinated with an Esmarch, and the tourniquet was inflated to 250 mm Hg. The arm was placed in a Strickland hand table for retraction and an oblique incision was made over the palm up to the palmar digital crease crossing obliquely and then extending distally along the ulnar aspect of the finger. The full-thickness skin flap was raised. The distal stump of the ulnar digital nerve was identified. This was noted to be scarred in and adherent to the adjacent flexor tendon sheath. The flexor tendons were identified and noted to be intact. The proximal stump of the ulnar digital nerve was identified and noted to have slight bulbous neuroma formation. The proximal and distal ends were then visualized under the operating microscope, and the stump ends were freed and mobilized. The segments of cut nerve ends were then resected back to healthy appearing fascicles. The nerves were mobilized once again and directly repaired using a

9-0 nylon suture, epineural stitch with operating microscope with the stitch held without tension with the digit in full extension. Additional 9-0 nylon sutures were placed at 90-degree angles with four epineural well-placed stitches. A tension free repair and anatomic repair was noted. The digit was then put through passive range of motion, no tension upon the repair. Copious irrigation was performed. The tourniquet was deflated excellent capillary refill returned to the fingertips with the flaps well maintained. The incision was closed with interrupted Prolene mattress sutures. Xeroform, moistened 4x4's, a Kling wrap, and Cohan dressing were then applied with the fingers held free at the IP joint. The patient was awakened and transported to the recovery room awake, alert, and in a good condition. The patient was able to demonstrate gentle IP range of motion and the fingers were warm and well perfused.

ICD-10-PCS code(s): _____

Case 17

Procedures Performed: 1. Left and right heart catheterization (for congenital anomaly)
2. Coronary angiography using high osmolar contrast

Indication: Secundum-type atrioseptal defect. Congestive heart failure, chronic, systolic.

Brief History of Present Illness: This is a 63-year-old patient who has chronic dyspnea on exertion consistent with CHF NYHA class III. Outpatient evaluation revealed pulmonary hypertension and a dilated pulmonary artery, following which subsequent noninvasive testing included an echocardiogram as well as coronary CT angiography. This revealed a large Secundum-type atrial septal defect. He has been managed with medical therapy and presents today for potential closure of this defect with a percutaneous septal occluder device. Risks/benefits ratio of procedure was explained, and informed consent was obtained.

Procedure: On arrival to the lab, the patient was in stable condition. Initially, a 5 French sheath was placed in the right common femoral vein, an 11 French sheath was placed in the left common femoral vein, a 5 French sheath was placed in the left common femoral artery. Hemodynamics were measured using sheath sidearms as well as using a 7 French pulmonary artery Swan-Ganz catheter (after upgrading sheaths to 11 French at a later point in time).

Complications: None immediate.

Hemodynamic Findings: 1. AC 120/78 (94 mm Hg mean) 2 LV 120/17 mm Hg 3 RA 16 (12 mm Hg mean) 4 RV 45/11 mm Hg mean 5 PA 45/17 (32 mm Hg mean) 6 PCWP 19 mm Hg mean. SVC 71 percent, RA 84 percent, PA 88 4 percent, FA 91 percent 8 Systemic blood flow 6.14 liters per minute. Pulmonary blood flow 47 liters per minute, with Qp/Qs ratio 7 69 (assumed hemoglobin of 15 7 gm/dL, assumed oxygen consumption of 258 mL per minute)

Angiographic Findings: LEFT MAIN: Normal. Has a very short left main

Left Anterior Descending: Normal.

Left Circumflex: Left circumflex artery terminates into 3 large CM branches without any significant disease.

Right Coronary Artery: Arising from a slightly anterior position in the right coronary cusp. This vessel has a very large conus branch arising almost in an anomalous fashion right at its origin, and supplies the right ventricle. This has multiple large branches. The main RCA and posterior descending arteries are free of significant disease.

A multipurpose 5 French catheter was advanced and initially this wire went to an area outside the right atrial free border. In light of the above, anomalous pulmonary venous drainage was suspected. This multipurpose catheter was advanced, and pulmonary vein angiography was performed. This was the right upper pulmonary vein, draining normally into the left atrium and was not anomalous pulmonary vein. There was a large secundum type atrial septal defect. There was no posterior rim detected in the midsegment. The anterior rim was adequate. In light of the above, we elected to assess the accurate sizing and flow cessation with a sizing balloon. An Amplatz Super-Stiff wire and subsequently a J-wire were parked in the left atrium, over which a 30 mm NMT sizing balloon was advanced and inflated across the interatrial septal. This balloon at 30 mm still had some residual minimal shunting on the posterior rim, and there was some give with motion. After detailed discussion with Dr. Jones, a pediatric interventional cardiologist, we elected to not proceed with any attempts at percutaneous device closure because of the above findings. All the equipment was removed, and access site hemostasis was to be achieved when ACT was less than 160 seconds.

Impression: 1. A large secundum-type atrial septal defect, and not suitable for percutaneous closure. 2. Elevated right heart filling pressure with mild pulmonary hypertension and significant left to right shunt at the atrial level (Qp/Qs ratio more than 7). 3. No significant epicardial coronary artery stenosis.

Plan and Recommendations: Mr. Lee's detailed intracardiac echocardiography and the right and left heart catheterization confirm hemodynamically significant secundum-type atrial septal defect. Based on the technical factors delineated above, this will be best served with surgical closure. I will discuss the case with a cardiothoracic surgery colleague, and then proceed further as appropriate. He will require close follow up, and I have taken the liberty of adding low-dose ACE inhibitor therapy to optimize his perioperative outcomes from a remodeling standpoint.

ICD-10-PCS code(s): _____

Case 18

Subjective: Patient presented to the ED with left nares epistaxis. Patient states her left nares began bleeding 30 minutes PTA and she could not stop it, so she came to the ED for control. She states there was no trauma, "it just started bleeding and wouldn't stop."

Past Medical History: She does have congestive heart failure and she is on Coumadin and aspirin.

Objective: Examination of the nasal cavity could not identify cause of bleeding. There is some dry, crusted blood in the left nares. I tried to suction away some crust and see if I could identify the source, but did not uncover any. Therefore, nasal packing was performed to control the bleeding.

Traditional gauze packing performed. Gauze was well soaked with BIPP. A combination of oxymetazoline and 4 percent Lidocaine was used as an anesthetic. No septal deviation or spurs were present in the left nares. Bayonet forceps were used to layer the gauze horizontally. The floor of the nose was packed first, then superiorly to fill the nose. Each layer was compressed to increase pres-

sure on the nasal cavity walls. Approximately 2 mm of packing was necessary. Patient tolerated the procedure well.

Assessment: Epistaxis, left nares. Packing performed. Patient instructed to see her primary care physician in 3–5 days for removal, or return back here if she wishes. She was also informed to return if the bleeding begins again or soaks through the packing.

ICD-10-PCS code(s): _____

Case 19

History: The patient is a 56-year-old right-handed female with longstanding intermittent right low back pain, who was involved in a motor vehicle accident in September of 2005. At that time, she did not notice any specific injury. Five days later, she started getting abnormal right low back pain. At this time, it radiates into the buttocks down the posterior aspect of her thigh and into the right lateral aspect of her calf. Symptoms are worse when sitting for any length of time, such as driving a motor vehicle. Mild symptoms when walking for long periods of time. Relieved by standing and lying down. She denies any left leg symptoms or right leg weakness. No change in bowel or bladder function. Symptoms have slowly progressed. She has had Medrol Dosepak and analgesics, which have not been very effective. She underwent a spinal epidural injection, which was effective for the first few hours, but she had recurrence of the pain by the next day. This was done four and a half weeks ago.

On examination, lower extremities strength is full and symmetric. Straight leg raising is normal.

Objective: Sensory examination is normal to all modalities. Full range of movement of lumbosacral spine. Mild tenderness over lumbosacral paraspinal muscles and sacroiliac joint. Deep tendon reflexes are 2+ and symmetric at the knees, 2 at the left ankle and 1+ at the right ankle.

Nerve Conduction Studies: Motor and sensory distal latencies, evoked response, amplitudes, conduction velocities, and F-waves are normal in the lower extremities. Right tibial H-reflex is slightly prolonged when compared to the left tibial H-reflex.

Needle Emg: Needle EMG was performed in both lower extremities and lumbosacral paraspinal muscles using the disposable concentric needle. It revealed increased insertional activity in the right mid and lower lumbosacral paraspinal muscles as well as right peroneus longus muscle. There were signs of chronic denervation in right tibialis anterior, peroneus longus, gastrocnemius medialis, and left gastrocnemius medialis muscles.

Impression: This electrical study is abnormal. It reveals the following:

1. A mild right L5 versus S1 radiculopathy.
2. Left S1 nerve root irritation. There is no evidence of active radiculopathy.
3. There is no evidence of plexopathy, myopathy or peripheral neuropathy.

MRI of the lumbosacral spine was personally reviewed and reveals bilateral L5-S1 neuroforaminal stenosis, slightly worse on the right. Results were discussed with the patient and her daughter. I would recommend further course of spinal epidural injections with Dr. XYZ. If she has no response, then surgery will need to be considered. She agrees with this approach and will follow up with you in the near future.

ICD-10-PCS code(s): _____

Case 20

Exam: Nuclear medicine lymphatic scan.

Reason for Exam: Left breast cancer.

Technique: 1.0 mCi of Technetium-99m sulfur colloid was injected within the dermis surrounding the left breast biopsy site at four locations. A 16-hour left anterior oblique imaging was performed with and without shielding of the original injection site.

Findings: There are two small foci of increased activity in the left axilla. This is consistent with the sentinel lymph node. No other areas of activity are visualized outside of the injection site and two axillary lymph nodes.

Impression: Technically successful lymph node injection with two areas of increased activity in the left axilla consistent with sentinel lymph node.

ICD-10-PCS code(s): _____

Case 21

Exam: Nuclear medicine tumor localization, whole body.

History: Status post subtotal thyroidectomy for thyroid carcinoma, histology not provided.

Findings: Following the oral administration of 4.3 mCi Iodine-131, whole body planar images were obtained in the anterior and posterior projections at 24, 48, and 72 hours.

There is increased uptake in the left upper quadrant, which persists throughout the examination. There is a focus of increased activity in the right lower quadrant, which becomes readily apparent at 72 hours. Physiologic uptake in the liver, spleen, and transverse colon is noted. Physiologic urinary bladder uptake is also appreciated. There is low-grade uptake in the oropharyngeal region.

Impression: Iodine-avid foci in the right lower quadrant and left upper quadrant medially suspicious for distant metastasis. Anatomical evaluation, i.e., CT is advised to determine if there are corresponding mesenteric lesions. Ultimately (provided that the original pathology of the thyroid tumor with iodine-avid) PET scanning may be necessary. No evidence of iodine added locoregional metastasis.

ICD-10-PCS code(s): _____

Case 22

Audiologic Evaluation

Ludwig Von Beethoven was seen for an initial hearing evaluation through the Appalachian State University Communication Disorders Clinic earlier this year.

Mr. Beethoven stated that he had experienced a hearing loss for several years, which interfered with his writing music. On the Hearing Handicap Inventory Mr. Beethoven scored 56 out of a possible 100 points, indicating moderate communication difficulties because of a hearing problem. No speech/language problems were noted during the client interview.

Conventional pure tone audiometric tests using earphones, bone conduction band and audiometer confirmed a moderate to severe sensorineural hearing loss at the right ear and a moderately severe to severe sensorineural hearing loss at the left ear.

Speech recognition thresholds (SRT) were obtained having Mr. Beethoven repeat spondaic words presented by monitored live voice. The levels of 50 dB HL at the right ear and 65 dB HL at the left ear were in a moderate and moderately severe hearing loss range respectively and were consistent with the pure tone test results, supporting the reliability of these data. Word recognition ability was obtained at 80 dB HL using the NU-6 Word List presented via recorded materials. Results were excellent as evidenced by scores of 92 percent at the right ear and 96 percent at the left ear, indicating no significant difficulty with suprathreshold word recognition. Otoscopic inspection was unremarkable. Immittance audiometry, including tympanometry and ipsilateral acoustic reflex patterns, was indicative of normal middle ear function bilaterally.

The results of the evaluation were discussed with Mr. Beethoven. Since he had excellent results for word recognition, he was a good candidate for amplification. He was reminded that hearing aids do not “cure” a hearing loss and he will have to continue to make modifications in his environment to promote good listening conditions.

The following recommendations were made:

1. Mr. Beethoven should consider purchasing binaural hearing aids from the hearing aid dispenser of his choice.
2. Annual hearing evaluations.

ICD-10-PCS code(s): _____

Case 23

S = "Pain on my back has improved from pain scale of 7/10 to 3/10."

O = VS:

BP = 120/80 mm Hg

RR = 12 cpm

PR = 80 bpm

To = 37o

Treatments provided:

- 1) Hot pack on lumbar area x 20 min. in prone.
- 2) Deep kneading massage on lumbar paraspinal muscles x 5 min. in prone.
- 3) Ice pack on lumbar area x 20 min. in prone.
- 4) Prone lumbar extensions x 20 reps.
- 5) Educated patient on:
 - a. Proper lifting techniques with 10 lb. box lift x 20 reps.
 - b. Proper sleeping techniques with emphasis on maintaining normal lumbar curve.

A = Patient tolerated treatment well and appears to be compliant with home exercise program.

P = Continue with current treatment plan. Caution - patient needs frequent verbal cuing with proper lifting techniques.

ICD-10-PCS code(s): _____

Case 24

Physical Therapy

Patient Name: Flintstone, Fred

Medical Record #:

Account #: 1234567892

Provider: Lakeside Rehabilitation

Date: 01/17/08

Provider #: 25489631

Primary Diagnosis: 12/25/06 844.2 Sprain Of Cruciate Ligament Of Knee

Other Diagnosis: 07/11/06 781.2 Abnormality Of Gait

DOB: 08/02/61

Treating Clinician: Thomas H, PT

Time In: 10:00 AM **Time Out:** 11:00 AM

PT Interventions and CPT® Codes Consisted of: CPT® Code Modifiers Minutes Units

Gait Training &/or Stair Climbing - Therapeutic Procedure - 1+ Areas 97116 59 15 1

Therapeutic Activities - Direct patient contact 97530 28 2

Ultrasound - Modality to 1+ Areas - Each 15 Min 97035 12 1

Total Minutes: 55 Total Timed Minutes: 55 Total Untimed Minutes: 0

Total Units: 4 Total Timed Units: 4 Total Untimed Units: 0

Pain In: 3 Pain Out: 0

Progressive Exercises:	Quantity	Unit	Sets	Reps
Knee - general strengthening and range of motion - right	3	lbs	3	15
Knee - Gluteal sets with heel elevated - right	10	secs	2	10
Knee - hamstring sets - right	10	secs	2	10
Knee - knee extension - seated - right	4	lbs	3	15

Impairment Observations:

The right knee is swollen and painful with palpation, movement and weight bearing > 25 percent on the right lower extremity. Edema now at 46 cm, 48 cm, and 38 cm. Ultrasound to right knee 1.5 watts/cm². BP 120/80.

Characterstics and Analysis:

Mr. Flinstone is improving, but continues to have difficulty in ambulation and requires moderate assistance with crutches on uneven terrain to maintain 25 percent weight bearing status for the right lower extremity. Due to this limitation, he is not able to propel his car or climb into the crane for work at the quarry.

Specific Joints:

Knee Current Level Right Left

Flexion 3/5 5/5 71° 145° 85° 145°

Extension 2+/5 5/5 -20° 0° -15° 0°

Knee Goal Right Left

Flexion 5/5 5/5 135° 145° 140° 145°

Extension 5/5 5/5 0° 0° 0° 0°

Current Plan: Three times weekly

Patient's Response to PT Interventions: Good

Patient's Progress Toward Established Goals: Good

ICD-10-PCS code(s): _____

Case 25

Preoperative Diagnosis: Right renal stone.

Postoperative Diagnosis: Right renal stone.

Procedure: Right shockwave lithotripsy, cystoscopy, and stent removal x 2.

Anesthesia: LMA.

Estimated Blood Loss: Minimal. The patient was given antibiotics preoperatively.

History: This is a 47-year-old male who presented with right renal stone and right UPJ stone. The right UPJ stone was removed using ureteroscopy and laser lithotripsy and the stone in the kidney. The plan was for shockwave lithotripsy. The patient had duplicated system on the right side. Risk of anesthesia, bleeding, infection, pain, MI, DVT, PE was discussed. Options such as watchful waiting, passing the stone on its own, and shockwave lithotripsy were discussed. The patient wanted to proceed with the shockwave to break the stone into small pieces as possible to allow the stones to pass easily. Consent was obtained.

Details of the Operation: The patient was brought to the OR. Anesthesia was applied. The patient was placed in the supine position. Using Dornier lithotripter total of 2500 shocks were applied. Energy levels were slowly started at O₂ increased up to 7; gradually the stone seem to have broken into smaller pieces as the number of shocks went up. The shocks were started at 60 per minute and slowly increased up to 90 per minute. The patient's heart rate and blood pressure were stable throughout the entire procedure.

After the end of the shockwave lithotripsy the patient was placed in dorsal lithotomy position. The patient was prepped and draped in usual sterile fashion and cystoscopy was done. Using graspers, the stent was grasped x 2 and pulled out, both stents were removed. The patient tolerated the procedure well. The patient was brought to recovery in stable condition. The plan was for the patient to follow up with us and plan for KUB in about two to three months.

ICD-10-PCS code(s): _____

Case 26

Description: Cesarean Section. An incision was made as noted above in the findings and carried down through the subcutaneous tissue, muscular fascia and peritoneum.

The patient was prepared and draped in the usual sterile manner for an abdominal procedure. An incision was made as noted above in the findings and carried down through the subcutaneous tissue, muscular fascia and peritoneum. Once inside the abdominal cavity, a low cervical transverse incision was made in the lower uterine segment after creating a bladder flap by both blunt and sharp dissection. With creation of the bladder flap, a transverse incision was made and the infant was delivered as a vertex. The placenta was then removed as well. With removal of the placenta and baby, cord blood was obtained. The infant was handed off to the nurses in attendance. The uterus was then exteriorized and brought out through the abdominal incision. We then closed the uterine incision in the usual manner with #1 Chromic suture in a running continuous manner. The bladder flap was inspected for hemostasis and closed with #2-0 Chromic in a running continuous manner as well. We then began closure of the abdominal incision. Number 0 Vicryl was used to close the

fascia in a running continuous manner. The subcutaneous tissue and peritoneum were closed with #2-0 Vicryl suture in a running continuous manner. The skin was closed as noted above. A Foley catheter had been inserted. Clear urine was noted. The sponge count was correct times 2. There were no complications at this point. The patient was then awakened and taken to the Recovery Room in good condition.

ICD-10-PCS code(s): _____

Case 27

Preoperative Diagnoses:

1. Abnormal uterine bleeding.
2. Status post spontaneous vaginal delivery.

Postoperative Diagnoses:

1. Abnormal uterine bleeding.
2. Status post spontaneous vaginal delivery.

Procedure Performed:

1. Dilation and curettage (D&C).
2. Hysteroscopy.

Anesthesia: IV sedation with paracervical block.

Estimated Blood Loss: Less than 10 cc.

Indications: This is a 17-year-old African-American female that presents 7 months status post spontaneous vaginal delivery without complications at that time. The patient has had abnormal uterine bleeding since her delivery with an ultrasound showing a 6 cm x 6 cm fundal mass suspicious either for retained products or endometrial polyp.

Procedure: The patient was consented and seen in the preoperative suite. She was taken to the operative suite, placed in a dorsal lithotomy position, and placed under IV sedation. She was prepped and draped in the normal sterile fashion. Her bladder was drained with the red Robinson catheter which produced approximately 100 cc of clear yellow urine. A bimanual exam was done, was performed by Dr. X and Dr. Z. The uterus was found to be anteverted, mobile, fully involuted to a pre-pregnancy stage. The cervix and vagina were grossly normal with no obvious masses or deformities. A weighted speculum was placed in the posterior aspect of the vagina and the anterior lip of the cervix was grasped with the vulsellum tenaculum.

The uterus was sounded to 8 cm. The cervix was sterilely dilated with Hank dilator and then Hagar dilator. At the time of blunt dilation, it was noticed that the dilator passed posteriorly with greater ease than it had previously. The dilation was discontinued at that time because it was complete and the hysteroscope was placed into the uterus. Under direct visualization, the ostia were within normal limits. The endometrial lining was hyperplastic, however, there was no evidence of retained products or endometrial polyps. The hyperplastic tissue did not appear to have calcification or other abnormalities. There was a small area of the lower uterine segment posteriorly that was suspicious for endometrial perforation, however this area was hemostatic, no evidence of bowel involvement and was approximately 1 x 1 cm in nature. The hysteroscope was removed and a sharp curette was placed intrauterine very carefully using an anterior wall for guidance. Endometrial curettings were obtained and the posterior aspect suspicious for perforation was gently probed and seemed to have clamped

down since the endometrial curetting. The endometrial sampling was placed on Telfa pad and sent to Pathology for evaluation. A rectal exam was performed at the end of the procedure which showed no hematoma formation in the posterior cul-de-sac. There was a normal consistency of the cervix and the normal step-off. The uterine curette was removed as well as the vulsellum tenaculum and the weighted speculum. The cervix was found to be hemostatic. The patient was taken off the dorsal lithotomy position and recovered from her IV sedation in the recovery room. The patient will be sent home once stable from anesthesia. She will be instructed to follow up in the office in two weeks for discussion of the pathologic report of the endometrial curettings. The patient is sent home on Tylenol #3 prescription as she is allergic to Motrin. The patient is instructed to refrain from intercourse, douching, or using tampons for the next two weeks. The patient is also instructed to contact us if she has any problems with further bleeding, fevers, or difficulty with urination.

ICD-10-PCS code(s): _____

Case 28

The patient is a 29-year-old, Caucasian, para 0, 40 weeks' pregnant who presented with contractions. Prenatal care has been in my office since the first trimester. Ultrasounds have been consistent with menstrual history. Factors identified for consideration during prenatal care included maternal history of Gilbert's syndrome.

The patient presented in the early morning hours of February 12, 2014, with contractions. The patient was found to be in false versus early labor and managed as an outpatient. The patient returned to labor and delivery approximately 12 hours later with regular painful contractions. There was minimal cervical dilation, but 80 percent effacement by nurse examination. The patient was admitted. Expected management was utilized initially. Stadol was used for analgesia. Examination did not reveal vulvar lesions. Epidural was administered. Membranes ruptured spontaneously. Cervical dilation progressed. Acceleration-deceleration complexes were seen. Overall, fetal heart tones remained reassuring during the progress of labor. The patient was allowed to "labor down" during second stage. Early decelerations were seen as well as acceleration-deceleration complexes. Overall, fetal heart tones were reassuring. Good maternal pushing effort produced progressive descent.

Spontaneous controlled sterile vaginal delivery was performed without episiotomy and accomplished without difficulty. Fetal arm was wrapped at the level of the neck with the fetal hand and also at the level of the neck. There was no loop or coil of cord. Infant was vigorous female sex. Oropharynx was aggressively aspirated. Cord blood was obtained. Placenta delivered spontaneously.

Following delivery, uterus was explored without findings of significant tissue. Examination of the cervix did not reveal lacerations. Upper vaginal lacerations were not seen. Multiple first-degree lacerations were present. Specific locations included the vestibula at 5 o'clock, left labia minora with short extension up the left sulcus, right anterior labia minora at the vestibule, and midline of the vestibule. All mucosal lacerations were reapproximated with interrupted simple sutures of 4-0 Vicryl with the knots being buried. Post-approximation examination of the rectum showed smooth, intact mucosa. Blood loss with the delivery was 400 mL.

Plans for postpartum care include routine postpartum orders. Nursing personnel will be notified of Gilbert's syndrome.

ICD-10-PCS code(s): _____

Case 29

Diagnosis: Stasis ulcers of the lower extremities

Operation: Split-thickness skin grafting a total area of approximately 15 x 18 cm on the right leg and 15 x 15 cm on the left leg.

Indications: This 84-year-old female presented recently with large ulcers of the lower extremities. These were representing on the order of 50 percent or more of the circumference of her lower leg. They were in a distribution to be consistent with stasis ulcers. They were granulating nicely and she was scheduled for surgery.

Findings: Large ulcers of lower extremities with size as described above. These are irregular in shape and posterior and laterally on the lower legs. There was no evidence of infection. The ultimate skin grafting was quite satisfactory.

Procedure: Having obtained adequate general endotracheal anesthesia, the patient was prepped from the pubis to the toes. The legs were examined and the wounds were Pulsavaced bilaterally with 3 liters of saline with Bacitracin. The wounds were then inspected and there was adequate hemostasis and there was only minimal fibrinous debris that needed to be removed. Once this was accomplished, the skin was harvested from the right thigh at approximately 0.013 inch. This was meshed 1:1.5 and then stapled into position on the wounds. The wounds were then dressed with a fine mesh gauze that was stapled into position as well as Kerlix soaked in Sulfamylon solution.

She was then dressed in additional Kerlix, followed by Webril, and splints were fashioned in a spiral fashion that avoided foot drop and stabilized them, and at the same time did not put pressure across the heels. The donor site was dressed with Op-Site. The patient tolerated the procedure well and returned to the recovery room in satisfactory condition.

ICD-10-PCS code(s): _____

Case 30

Indications: Thrombocytopenia

Procedure Performed: Bone marrow aspiration for biopsy

Procedure: Informed consent was obtained and the patient was seen in the preoperative suite. The patient was premedicated with 10 mg of morphine sulfate IV and 1 mg of Ativan IV. The right posterior iliac crest was prepped and draped in the usual sterile fashion. The skin and underlying tissues were anesthetized with 30 mL of 1 percent Lidocaine with epinephrine. A Kelly needle was introduced, and bone marrow aspirate was obtained without difficulty. The Kelly needle was removed and a trephine needle was advanced into the bone cavity. Bone marrow core biopsies were obtained without complications.

ICD-10-PCS code(s): _____

Case 31

Preoperative Diagnosis: Cervical spondylosis, central stenosis C4–C5.

Postoperative Diagnosis: Cervical spondylosis, central stenosis C4–C5.

Procedure: Anterior cervical arthrodesis anterior body C4–C5 using PEEK cages and DynaTran 16 mm Stryker plate, autologous local bone and putty.

Anesthesia: General anesthesia

Patient was placed in supine position on the operating table. The anterior aspect of the neck was prepped and draped in a sterile fashion. A transverse incision was made across the sternocleidomastoid on the right side, and the incision was carried down through the subcutaneous tissues controlling bleeding with unipolar cautery. Initial retraction was done, and the anterior border of the sternocleidomastoid was identified. The prevertebral space was identified and the longuscolli muscles were divided in the midline. The self-retaining blades of the Trimline retractor were placed underneath this muscle, and then we placed a marker at the C3–C4 level which was the most inferior still visible identifiable disk space.

From here I counted down to the C4–C5 level and proceeded with a minimal anterior cervical discectomy and decompression at C4–C5. The ventral osteophytes were removed and the disk incised using a 15-blade knife in the interspace distracted using the Caspar distraction system. The discectomy was performed using a combination of curettes and Midas Rex drill. The discectomy and bony removal was followed posteriorly until the posterior longitudinal ligament was identified. This was opened and removed and then working carefully over the dura, bilateral foraminotomies were performed.

After verifying that the spinal cord was well decompressed in the midline, the roots out laterally, the area was irrigated with an antibiotic saline solution. I then selected a 4 mm in height PEEK cage which was filled with some local bone that had been harvested as part of our pony removal combined with autologous bone putty. The cage was then tapped into position and distraction was released.

I then selected a 16 mm in length DynaTran translational plate and this was secured with two variable angle screws into C4 and two into C5. Once the screws were partially in position, the translational stops were removed and the screws were secured beyond the backup stops for all 4 screws. The muscles were reapproximated with 2-0 vicryl, a 2-0 vicryl subcutaneous closure including the platysma and a running 4-0 vicrylsubcuticular stitch in the skin.

ICD-10-PCS code(s): _____

Case 32

Indication: Pain and swelling of right ankle, non-weight bearing

32-year-old male with multiple injuries is seen by orthopedist after slipping and falling 3 steps of his front porch and twisting his right ankle. At the time of the incident he felt a pop and immediately could not bear weight on it.

Examination: Right ankle is diffusely swollen, particularly on the lateral aspect of the malleolus. Dorsalis pedis and posterior tibial pulses are strongly present, as is sensation on the dorsal and plantar aspects. Patient can flex his toes and foot.

X-ray Findings: Normal right ankle

Impression: Traumatic sprain of right talofibular ligament

Plan: Patient will be placed in static short leg splint and follow-up in three weeks.

ICD-10-PCS code(s): _____

Case 33

Preoperative Diagnosis: History of breast cancer.

Postoperative Diagnosis: History of breast cancer.

Operation Performed: Port-A-Cath removal, right subclavian vein.

Specimens: Port-A-Cath for gross.

Outcome: Good.

Estimated Blood Loss: Minimal.

Complications: None.

Indication for Procedure: This is a 52-year-old female with a history of left breast cancer. She is status post bilateral mastectomies. She has also completed her adjuvant chemotherapy treatment and has been cleared by her oncologist for Port-A-Cath removal. Risks, benefits and alternatives of the procedure were discussed with patient in the office. Informed consent was then obtained in the preoperative holding area.

Description of Procedure: After informed consent was obtained, the patient was taken to the operating room and placed in supine position. The right upper chest was prepped and draped in usual sterile fashion. Infiltration of local anesthetic was then performed into the skin and subcutaneous tissues. Her old scar was then entered with a knife down to subcutaneous tissue. Caution was used to maintain hemostasis as well as to dissect through the capsule containing the port. The port was removed intact and then pressure held on the right infraclavicular space for 5 minutes. Once 5 minutes had elapsed, the wound was inspected. There was no bleeding. The wound was closed with 3-0 Vicryl subcutaneous sutures, a running 4-0 Monocryl subcuticular stitch. It was then reinforced with 3-0 Prolene simple sutures x3. Steri-Strips were then applied. The patient tolerated the procedure well. There were no complications. All lap, sponge and needle counts were correct at the end. She was then allowed to recover from the sedative, transferred to a stretcher and taken to recovery in good condition.

ICD-10-PCS code(s): _____

Case 34

Nature of Operation: Left thoracotomy with wedge resections.

Preoperative Diagnosis: Metastatic osteosarcoma of femur.

Postoperative Diagnosis: Metastatic osteosarcoma of femur.

Complications: None.

Clinical Note: The patient is a nearly 15-year-old boy with metastatic osteosarcoma. He has had recurrence in both chests. He is 1-week status post right thoracotomy for resection of pulmonary metastases and is now planned for a left thoracotomy.

Procedure: On the afternoon of 04/27/2010, the patient was brought to the operating room, assisted to the operating table and placed in the supine position where general anesthesia was induced without difficulty. A double-lumen endotracheal tube was placed as were an arterial line and Foley catheter. The patient was repositioned in a right lateral decubitus position. His left chest was prepped and draped in the usual sterile fashion. The prior posterolateral skin incision was excised. Dissection was carried down through the muscles to the chest wall. The chest was entered through approximately the 6th intercostal space. Numerous adhesions from the lung to the parietal pleura were taken down sharply and with electrocautery so that the left upper and lower lobes could be mobilized. The nodule detected on the preoperative CT scan in the superior aspect of the left lower lobe was identified and removed with a wedge resection. Two additional smaller nodules were identified, one on the anterior surface of the left lower lobe and another on the anterior surface of the left upper lobe. These were also removed with small wedge resections. Finally, areas of air leak primarily in the left lower lobe were closed with multiple firings of the TA60 stapler each of which provided a small additional surgical specimen of the left lower lobe. Following completion of this, the lung was re-expanded. No air leak was noted. A #24 French chest tube was placed into the left chest through the previously healed tube thoracostomy site. The chest was irrigated with saline. Hemostasis was assured. The ribs were reapproximated with several pericostal 0 Vicryl sutures. The fascia layers were closed with running Vicryl and the skin closed with a subcuticular suture. Steri-Strips and sterile dressings were applied. The patient was extubated in the operating room and brought to the recovery room in stable condition. Sponge and instrument counts at the conclusion of the procedure were correct.

ICD-10-PCS code(s): _____

Case 35

Cystoscopy: Jack Jones is a 56-year-old male who presents for elective cystoscopy today as part of his workup for unexplained voiding symptoms. See my prior note which was reviewed in detail. There is no change in diagnoses, medications,

ROS: Uroimaging: Ultrasound in March showed a questionable bladder polyp.

Cystoscopy Consent: The indications were reviewed and his questions were encouraged and answered. The procedure, alternatives and risks were discussed and his informed consent obtained.

Procedure: Cystoscopy: Patient was consented, sterilely prepped and draped and had a flexible cystoscopy. Local anesthesia was instilled with Lidocaine jelly. The flexible cystoscope was passed

into the bladder with copious lubrication and irrigation. Anterior bulbar and membranous urethra were normal. Prostatic urethra demonstrated trilobar hypertrophy. Bladder was entered. No mucosal lesions were noted. Ureteral orifices: clear efflux R and L in their anatomically correct location. Cystoscope was removed. Bladder biopsy was taken and submitted for diagnostic purposes.

Assessment: No bladder tumor seen. Area on ultrasound probably just the intravesical intrusion of prostate from the middle lobe.

Plan: Cipro 500 mg now for prophylaxis. Urine cytology recommended. I will call patient if biopsy or cytology is abnormal. Return 6 months. Jack also instructed to expect some burning on urination and light bleeding in the urine for several days. Instructed to drink lots of fluids. Instructed to call back immediately or go to Urology clinic/ED if he has fever, chills, heavy bleeding in urine, difficulty urinating or emptying bladder or if there is pain that is not relieved by pain medication.

ICD-10-PCS code(s): _____



Bonus Coding Exercise Answers

Case 1

Correct Code(s): 0211093, 02110A3

Location Process: Begin by reviewing the code options listed under the main term Bypass. PCS divides code choices based upon the anatomic site being bypassed or for which the bypass is created. In this case the bypass is created for the coronary arteries which are further classified by the number of coronary arteries bypassed. In this case two coronary arteries were bypassed; left anterior descending and first diagonal providing the first four characters, 0211.

Once the table is accessed the values for the 5th character, Approach, 6th character, Device (graft material) and 7th character, Qualifier (destination site) are identified.

Approach	Device	Qualifier
0 - Open	9 - Autologous venous tissue	3 - Coronary artery
0 - Open	A - Autologous arterial tissue	3 - Coronary artery

Rationale: Although the 4th character, body part, identifies the two coronary artery sites are bypassed two distinct codes are needed to identify that a different graft material was used for each. If all bypasses are completed using the same graft material, only one code would be needed with the fourth character identifying the number of coronary arteries bypassed.

When Bypass is the root operation (identified by the 3rd character 1) the 7th character (Qualifier) identifies the destination site of the bypass.

Case 2

Correct Code(s): 0UT90ZZ, 0UTC0ZZ

Location Process: Referencing the common term, Hysterectomy, as the main term will provide two PCS root operation terms; Excision and Resection. The root operation for this procedure is Resection as the entire uterus and the entire cervix were removed. The index divides procedures listed under the main term Resection anatomically and provides the first four characters for resection of the uterus as 0UT9 and a resection of the cervix as 0UTC.

Once the table is accessed the values for the 5th character, Approach, 6th character, Device (graft material) and 7th character, Qualifier (destination site) are identified.

Approach	Device	Qualifier
0 - Open	Z - No Device	Z - No Qualifier

Rationale: PCS defines the root operation Resection as cutting out or off, without replacement, all of a body part. Although the root operation of Excision is also listed in the alphabetic index below the common term hysterectomy these code choices for excision procedures would identify removal of only a portion of the uterus or cervix as would be done in the case of a biopsy or wedge resection of these sites.

As the procedure performed was a total hysterectomy (removal of the uterus and cervix) and a fourth character defining the specific body part is available for both the uterus and cervix, two codes are needed to fully report the procedure performed. If the procedure performed had been a subtotal hysterectomy (removal of the uterus only) one code, 0UT90ZZ, would have been reportable.

Case 3

Correct Code(s): 00W630Z and 0WWG30Z

Location Process: Upon indexing the common procedure term “shunt” the coder is redirected to see the root procedure Revision. A Revision procedures are further classified by anatomic site and provides the first four characters for a bypass of the cerebral ventricle as 00W6.

A second code for the Revision of the distal end of the drainage device is needed and is also located under the root operation term, Revision with the anatomic subterm Peritoneal Cavity. The index provides the first four characters as 0WWG.

Reviewing the table for the 5th through 7th character values

Approach	Device	Qualifier
3 - Percutaneous	0 - Drainage device	Z - No Qualifier
3- Percutaneous	0 - Drainage device	Z - No Qualifier

Rationale: The guidelines state that a redo of a procedure needed for the correction of a malfunctioning device should be coded to the root operation of revision. Had this procedure been the initial placement of the CSF shunt, the root operation would have been Bypass and only one code would be needed to identify the body parts bypassed from and to.

As only minor incision through the skin, mucous membrane and other body layers were needed to provide entry of instrumentation used to complete the placement of both the ventricular and peritoneal catheters, the approach for both sites is percutaneous.

Case 4

Correct Code(s): 0DB48ZX

Location Process: The root operation term for a biopsy when only a portion of a body part is removed is Excision. The index further defines Excisions by the anatomic site excised, Esophago-gastric junction and provides the first four characters as 0DB4.

Reviewing the table for the 5th through 7th character values

Approach	Device	Qualifier
8 - Via natural or artificial opening endoscopic	Z - No Device	X - Diagnostic

Rationale: Although forceps would not normally be considered cutting instrument its use is defined by the intent of the procedure, excision. An additional code for the inspection of the remainder of the upper GI track is not coded. Per the guidelines (B3.11a.), inspection of a body part performed in order to achieve the objective of the procedure (biopsy) is not coded separately.

Case 5

Correct Code(s): 0SQC4ZZ

Location Process: The root operative term for a chondroplasty Repair. PCS further defines repair procedures by anatomic site (joint, knee) and provides the first four characters for a repair of the joint of the knee, right as 0SQC.

Accessing the table provides the remaining 3 character values

Approach	Device	Qualifier
4 - Percutaneous Endoscopic	Z - No Device	Z - No Qualifier

Rationale: The root operative term is based upon the intent of the procedure performed, in this case repair of the medial femoral condyle of the right knee. As the procedure performed an arthroscopy the approach is identified as percutaneous endoscopic.

Case 6

Correct Code(s): 09TV4ZZ, 09TU4ZZ, 099R4ZZ, 099Q4ZZ, 09QM3ZZ

Location Process: Begin by indexing the common or composite procedural terms for each procedure performed to determine the root operative terms available for each.

Ethmoidectomy: Depending upon the extent of the procedure performed, the root operation may be an excision or resection of the ethmoid sinus. Indexing the root operation Resection, PCS further classifies this root operation by the anatomic site and laterality providing separate four character sub codes of 09TU and 09TV for the right and left ethmoid sinus.

Antrostomy: Indexing this common procedural term, the coder is redirected to see root operation Drainage. This root operation term is also further classified by anatomic site and provides choices for the left and right maxillary sinus; 099R and 099Q.

Septoplasty: Reviewing the PCS index choices for this common procedural term the coder is directed to several root operation terms; Repair, Replacement, and Supplement. Indexing septum, nasal under the root operation repair provides the first four characters of 09QM.

	Approach	Device	Qualifier
Ethmoid sinus	4 - Percutaneous Endoscopic	Z - No Device	Z - No Qualifier
	4 - Percutaneous Endoscopic	Z - No Device	Z - No Qualifier
Maxillary sinus	4 - Percutaneous Endoscopic	Z - No Device	Z - No Qualifier
	4 - Percutaneous Endoscopic	Z - No Device	Z - No Qualifier
Nasal Septum	3 - Percutaneous	Z - No Device	Z - No Qualifier

Rationale: As all of the ethmoid sinus was removed, and not a portion of for a biopsy or removal of tissue such as polyps, the root operation is resection.

As a drainage device was not left in place during the anrostomy, the 6th character value of Z is used and a distinct code is needed as this procedure was performed bilaterally.

As the intent of the septoplasty was to restore to the extent possible, a body part to its normal structure and function, and the septum was removed not repositioned, the root operation selected is repair.

Case 7

Correct Code(s): 099780Z, 099880Z, 0CTPXZZ, 0CTQXZZ

Location Process: Indexing the common procedural term tympanotomy the coder is redirected to the root operation Drainage, Ear, Nose, Sinus and table 099.

Reviewing the table for the 4th through 7th character values

Body Part	Approach	Device	Qualifier
7 - Tympanic Membrane, Right	8 - Via Natural or Artificial Opening Endoscopic	0 - Drainage	Z - No Qualifier
8 - Tympanic Membrane, Left	8 - Via Natural or Artificial Opening Endoscopic	0 - Drainage	Z - No Qualifier

To report the second procedure, index the common procedural term, tonsillectomy. The PCS index directs the coder to see the root operation Resection, mouth and throat, table 0CT. This table also provides the body part character value to identify resection of the adenoids. An adenoidectomy may be indexed by the root operation Resection, Adenoids.

Reviewing the table for the 4th through 7th character values

Body Part	Approach	Device	Qualifier
P - Tonsils	X - External	Z - No Device	Z - No Qualifier
Q - Adenoids	X - External	Z - No Device	Z - No Qualifier

Rationale: As the objective of a tympanotomy is to allow the Eustachian tube to drain, the correct root operation is Drainage. The insertion of the drainage tube is identified by the 6th character value, Device. The approach for this procedure is endoscopic (microscopic) by way of a natural opening, the ear canal. As this procedure is performed bilaterally, two distinct codes are reported, one for the each side.

Total removal of the tonsils and adenoids is coded to root operation Resection. The root operation of excision for either of these sites would be correct if less than the all of the anatomic site classified was removed as in the case of a biopsy. PCS defines an external approach as either through the skin/mucous membrane or through an external orifice or opening which may be natural (mouth) or artificial (stoma).

Case 8

Correct Code(s): 0G9K3ZX

Location Process: Reviewing the common term aspiration the index directs the coder to the root operation Drainage. PCS classifies drainage procedures by anatomic site and provides the first four characters for drainage of the thyroid gland, 0G9K.

Review this table for the 5th through 7th character values

Approach	Device	Qualifier
3 - Percutaneous	Z - No Device	X - Diagnostic

Rationale: As the documentation states the procedure is a fine needle aspiration, the root operation is Drainage. The 7th character value identifies this procedure as a diagnostic biopsy.

Case 9

Correct Code(s): 0TUB0JZ

Location Process: The root operation term for this procedure is Supplement, which is further classified by anatomic site. Indexing Supplement, Bladder provides the first four character values of 0TUB.

Accessing the table provides the remaining 3 character values

Approach	Device	Qualifier
0 - Open	J - Synthetic Substitute	Z - No Qualifier

Rationale: First determine the root operation term by identifying the objective of the procedure which is to put in a device to lift the bladder from the vaginal wall by putting in a synthetic material that will physically reinforce the bladder. The PCS guidelines state that this is the definition of the root operation term Supplement. The root operation term insertion is incorrect. The PCS guidelines state that if a device is put in to meet an objective other than Insertion, then the root operation defining the underlying objective of the procedure is used and the device is specified by the device character value.

The cystoscopy is not coded separately as per PCS guidelines, inspection of a body part(s) performed in order to achieve the objective of a procedure is included in the procedure.

Case 10

Correct Code(s): BW2010Z, BW28ZZZ, BW03ZZZ, BR0CZZZ

Location Process: PCS classifies diagnostic imaging by the root type of imaging; computerized tomography, fluoroscopy, magnetic resonance imaging, plain radiography and ultrasonography. Each root type (type of imaging) is then further classified by anatomic site or region.

Indexing the root type computerized tomography, anatomic site, abdomen provides the first four character values BW20 and the anatomic site head the first four character values of BW28.

Contrast	Qualifier	Qualifier
1 - Low Osmolar	0 - Unenhanced and Enhanced	Z - None
Z - None	Z - None	Z - None

Plain films are located under the root type plain radiography and also classified by anatomic site. Indexing the anatomic site chest provides the code BW03ZZZ. Likewise indexing the anatomic site pelvis provides the code BR0CZZZ. Although full codes are provided in the index, be sure to consult the tables to validate these codes.

Rationale: Although CT scans are completed for both the abdomen and head, only the CT of the abdomen is documented as with and without contrast and as it is unknown if the CT of the head was completed prior to or after administration of contrast, it should be reported as without contrast.

Case 11

Correct Code(s): 0HBT3ZX, BH00ZZZ

Location Process: Indexing the common procedural term Biopsy, PCS redirects the coder to see root operation term Excision. The index further classifies Excisions by the anatomic site, Breast and provides the first four character values based upon laterality, 0HBT.

Accessing the table provides the remaining 3 character values

Approach	Device	Qualifier
3 - Percutaneous	Z - No Device	X - Diagnostic

Imaging: Indexing the root type, Plain Radiography, breast the full code is provided BH00ZZZ. Be sure to validate this code in the table.

Rationale: The documentation states that the procedure performed is an image guided (stereotactic) needle core biopsy of the right breast. As only minor incisions are made to allow the passage of the sampler, the approach is percutaneous.

Several plain films were taken during the procedure as well as a mammogram at the completion of the procedure. Reviewing the common term Mammogram in the index directs the coder to root type, Plain radiography. Multiple images of the same anatomic site or region are not coded separately.

Case 12

Correct Code(s): 0QSK05Z

Location Process: Begin by reviewing the root operation term Reposition. Subterms listed under Reposition are based upon anatomic site therefore the subterm Fibula which is further classified by laterality provides the first four character values for the left fibula as 0QSK.

Once the table is accessed the 5th through 7th character values are provided

Approach	Device	Qualifier
0 - Open	4 - Internal Fixation Device	Z - No Qualifier

Rationale: PCS defines the root operation, Reposition, as moving all or a portion of a body part to its normal location or other suitable location. Choices for the 6th character value Device include two choices of internal fixation; Internal Fixation Device (4) and Internal Fixation Device, Intra-medullary (6). The device was placed across the fracture site and not within the medullary cavity (hollow internal portion of the bone) therefore the correct Device character is 4.

Case 13

Correct Code(s): 0CQS8ZZ

Location Process: The root operation term for a supraglottoplasty is based upon the objective of the procedure, Repair. Reviewing the subterms provides the approximate anatomic site Larynx and the first four character values of 0CQS. (See rationale below).

Accessing the table provides the 5th thorough 7th character values

Approach	Device	Qualifier
8 - Via Natural or Artificial Opening Endoscopic	Z - No Device	Z - No Qualifier

Rationale: PCS defines the root operation, Repair, as procedures performed to restore a body part to its normal anatomic structure and function. PCS does not provide the specific body part supraglottis. However PCS guidelines direct that if a procedure is performed on a portion of a body part that does not have a separate body part value, to code the body part value corresponding to the whole body part. The supraglottis is the upper portion of the larynx posterior to the epiglottis.

Case 14

Correct Code(s): 08RK3JZ

Location Process: Begin by reviewing the subterms listed under the root operation Replacement. PCS divides the choices by anatomic site providing Lens as a specific site based upon laterality. In this case the left lens was replaced providing us with the first four character values of 08RK.

Approach	Device	Qualifier
3 - Percutaneous	J - Synthetic Substitute	Z - No Qualifier

Rationale: The objective of this procedure is to replace a cataractous lens of the eye the root operation Replacement and not Insertion is coded. PCS defines the root operation Replacement as putting in a biological or synthetic material that physically takes the place or function of a portion or all of a body part. As the lens is replaced by an acrylic lens, the Device character value is J, identifying a synthetic substitute.

PCS guidelines state (B3.1b) that components of a procedure specified in the root operation are not coded separately. The root operation Replacement implies that something being removed is replaced therefore extraction of the old lens to make space for the replacement is not coded separately.

Case 15

Correct Code(s): 3E0S33Z, 3E0S3CZ

Location Process: Begin by indexing the root operation term, Introduction. Next review the subterms provided for the location of the injection, Epidural Space. The index provides complete codes for each possible substance that may be introduced into the epidural space. Be sure to validate the codes for and anti-inflammatory and regional anesthetic in the table.

Rationale: As PCS does not include a combination code to identify the introduction of both an anti-inflammatory and regional anesthetic, a distinct code for each should be reported.

Case 16

Correct Code(s): 01Q40ZZ

Location Process: Begin by reviewing the root operation term that identifies the objective of this procedure, Repair. Repair procedures are further broken down in the PCS index by anatomic site, in this case Nerve and further classified by the specific nerve, Ulnar (see rationale), providing the first four character values of 01Q4.

Approach	Device	Qualifier
0 - Open	Z - No Device	Z - No Qualifier

Rationale: PCS does not provide a body part value the ulnar digital nerve. However, the guidelines (B4.2) direct that when a specific branch of a body part does not have its own body part value, the body part is coded to the closest proximal branch that has a specific body part value. In this case the closest body part value is the ulnar nerve.

Case 17

Correct Code(s): 4A023N8, B2110ZZ

Location Process: For the right and left heart catheterization, begin by reviewing the code options listed under the main term Catheterization. The Alphabetic Index instructs the user to see other procedures and gives the following choices:

- See Dilation
- See Drainage
- See Insertion of a device in
- See Irrigation
- Heart see Measurement, Cardiac
- Umbilical vein, for infusion

In this case Measurement, cardiac is referenced. PCS divides code choice based on body system, approach, and device. In this example, there was a cardiac measurement performed providing the first four characters: 4A02.

Once the table is accessed the values for the 5th character, Approach; 6th character, Function/Device; and 7th character, Qualifier are identified.

Approach	Function/Device	Qualifier
3 - Percutaneous	N - Sampling and Pressure	8 - Bilateral

For the coronary angiography, begin by reviewing the code options listed under the main term Angiography. The Alphabetic Index instructs the user to see other procedures and gives the following choices:

- See Fluoroscopy, Heart
- See Plain Radiography, Heart

In this case, the angiography would be Fluoroscopy. PCS divides code choice based on body part and contrast. In this case, the documentation states multiple coronary arteries were imaged with high osmolar contrast was used providing the first four characters, B211.

Once the table is accessed the values for the 5th character, Contrast; 6th character, Qualifier; and 7th character, Qualifier are identified.

Contrast	Qualifier	Qualifier
0 - High Osmolar Contrast	Z - None	Z - None

Rationale: For the Measurement and Monitoring section, the 3rd character is the root operation. There are two choices:

- Measurement: Determining the level of a physiological or physical function at a point in time
- Monitoring: Determining the level of a physiological or physical function repetitively over a period of time

The 6th character identifies the physiological or physical function being measured or monitored.

In the Imaging section, the 3rd character defines the type of imaging procedure. The following list includes all types in the Imaging section:

- Computerized tomography
- Fluoroscopy
- Magnetic resonance imaging
- Plain radiography
- Ultrasonography
- Coronary angiography is fluoroscopy.

The 5th character specifies whether the contrast material used in the imaging procedures is High, Low, or Other. In this case, the documentation states high osmolar contrast was used.

Case 18

Correct Code(s): 2Y41X5Z

Location Process: Begin by reviewing the code options listed under the main term Packing. PCS divides code choice based on body region. In this case, the left nares were packed providing the first four characters, 2Y41.

Once the table is accessed the values for the 5th character, Approach; 6th character, Device; and 7th character, Qualifier are identified.

Approach	Device	Qualifier
X - External	5 - Packing Material	Z - No Qualifier

Rationale: The Placement section includes five additional root operations, defined as follows:

- Compression: Putting pressure on a body region
- Dressing: Putting material on a body region for protection
- Immobilization: Limiting or preventing motion of an external body region
- Packing: Putting material in a body region or orifice
- Traction: Exerting a pulling force on a body region in a distal direction

In this case the root operation is Packing. The 6th character is always specified in this section (except for manual traction) and indicates the device placed during the procedures.

Case 19

Correct Code(s): 4A0FX3Z

Location Process: Begin by reviewing the code options listed under the main term Measurement. PCS divides code choices based upon the body system being measured and the type of measurement performed. In this case the EMG is considered to be performed on the musculoskeletal system, and the type of measurement is contractility, providing the first four characters, 4A0FX3Z.

Once the table is accessed the values for the 5th character, Approach; 6th character, Function/Device; and 7th character, Qualifier are identified.

Approach	Function/Device	Qualifier
X- External	3 - Contractility	Z - No Qualifier

Rationale: For the Measurement and Monitoring section, the 3rd character is the root operation. There are two choices:

- Measurement: Determining the level of a physiological or physical function at a point in time
- Monitoring: Determining the level of a physiological or physical function repetitively over a period of time

EMG is considered a measurement.

Case 20

Correct Code(s): CH11ZZ

Location Process: Begin by reviewing the code options listed under the main term Nuclear medicine. The Alphabetic Index instructs the user to see the type of imaging, and gives the following choices:

- See Nonimaging Nuclear Medicine Assay
- See Nonimaging Nuclear Medicine Probe
- See Nonimaging Nuclear Medicine Uptake
- See Planar Nuclear Medicine Imaging
- See Positron Emission Tomographic (PET) imaging
- See Systemic Nuclear Medicine Therapy
- See Tomographic (Tomo) Nuclear Medicine Imaging

PCS divides code choices based upon the type of scan and the body system or body part being imaged. In this case the nuclear medicine scan is planar, performed on the left breast, providing the first four characters, CH11.

Once the table is accessed the values for the 5th character, Radionuclide; 6th character, Qualifier; and 7th character, Qualifier are identified.

Approach	Qualifier	Qualifier
1 - Technetium 99m (Tc-99m)	Z - No Qualifier	Z - No Qualifier

Rationale: For the Nuclear Medicine section, the 5th character specifies the radionuclide. In this case, the stated radionuclide utilized is Technetium 99m. The 6th and 7th characters are qualifiers but are not specified in the Nuclear Medicine section; therefore the value is always Z, No Qualifier.

Case 21

Correct Code(s): CWINGZZ

Location Process: Begin by reviewing the code options listed under the main term Nuclear medicine. The Alphabetic Index instructs the user to see the type of imaging, and gives the following choices:

- See Nonimaging Nuclear Medicine Assay
- See Nonimaging Nuclear Medicine Probe
- See Nonimaging Nuclear Medicine Uptake
- See Planar Nuclear Medicine Imaging
- See Positron Emission Tomographic (PET) imaging
- See Systemic Nuclear Medicine Therapy
- See Tomographic (Tomo) Nuclear Medicine Imaging

PCS divides code choices based upon the type of scan and the body system or body part being imaged. In this case the nuclear medicine scan is planar, performed on the whole body, providing the first four characters, CW1N.

Once the table is accessed the values for the 5th character, Radionuclide; 6th character, Qualifier; and 7th character, Qualifier are identified.

Approach	Qualifier	Qualifier
G - Iodine 131 (I-131)	Z - No Qualifier	Z - No Qualifier

Rationale: For the Nuclear Medicine section, the 5th character specifies the radionuclide. In this case, the stated radionuclide utilized is Iodine 131. The 6th and 7th characters are qualifiers but are not specified in the Nuclear Medicine section; therefore the value is always Z, No Qualifier.

Case 22

Correct Code(s): F13Z21Z, F13ZD3Z, F13ZG4Z

Location Process: Begin by indexing the objective of the service or root type, Audiology, diagnostic. The coder is directed to see one of three choices based upon the objective of the service; Hearing Aid Assessment, Hearing Assessment, or Vestibular Assessment. In this case the service was to assess the patient's hearing, table F13.

Accessing the table provides the 4th through 7th character values for each assessment.

Body System/Region	Type Qualifier	Equipment	Qualifier
Z - None	2 - Pure Tone Audiometry, Air and Bone	1 - Audiometer	Z - None
Z - None	D - Tympanometry	3 - Tympanometer	Z - None
Z - None	G - Acoustic Reflex Patterns	4 - Electroacoustic Immitance/Acoustic Reflex	Z - None

Rationale: As each assessment measures a separate component of hearing for which separate type qualifiers are provided each assessment is coded separately. PCS guidelines state that when multiple root operations with distinct objectives are performed on the same body part, multiple procedures should be coded.

Case 23

Correct Code(s): F07G7ZZ, F07G0FZ

Location Process: Begin by reviewing the code options listed under the main term Physical Therapy. The Alphabetic Index instructs the user to see Motor Treatment, Rehabilitation. PCS divides code choices based upon the body system and type of treatment. In this case the massage and range of motion were performed on the lower back, providing the first four characters, F07G.

Once the table is accessed the values for the 5th character, Qualifier; 6th character, Equipment; and 7th character, Qualifier are identified.

Type Qualifier	Equipment	Qualifier
7 - Manual Therapy Techniques	Z - No Qualifier	Z - No Qualifier
0 - Range of Motion and Joint Mobility	F - Assistance, Adaptive, Supportive or Protective	Z - No Qualifier

Rationale: For the Physical Rehabilitation and Diagnostic Audiology, the 5th character is a type qualifier that further specifies the procedure performed. Appendix D contains definitions of these types of procedures. In this case, massage and range of motion exercises were performed. The 6th character specifies the equipment used. Specific equipment is not defined in the equipment value. The 7th character is not specified in the Physical Rehabilitation and Diagnostic Audiology section; therefore the value is always Z, No Qualifier.

Case 24

Correct Code(s): F07Z9FZ, F07G0FZ

Location Process: Begin by reviewing the code options listed under the main term Physical Therapy. The Alphabetic Index instructs the user to see Motor Treatment, Rehabilitation. PCS divides code choices based upon the body system and type of treatment. In this case gait training and range of motion were performed on the knee, providing the first three characters, F07.

Once the table is accessed the values for the 4th character, Body System/Region, 5th character, Type Qualifier; 6th character, Equipment; and 7th character, Qualifier are identified.

Body System/Region	Type Qualifier	Equipment	Qualifier
Z - None	9 Gait Training / Functional Ambulation	F Assistance, Adaptive, Supportive or Protective	Z - No Qualifier
G - Musculoskeletal System - Lower Back/ Lower Extremity	0 - Range of Motion and Joint Mobility	F - Assistance, Adaptive, Supportive or Protective	Z - No Qualifier

Rationale: For the Physical Rehabilitation and Diagnostic Audiology, the 4th character specifies the body region and/or system on which the procedure is performed. The 5th character is a type qualifier that further specifies the procedure performed. Appendix D contains definitions of these types of procedures. In this case, massage and range of motion exercises were performed. The 6th character specifies the equipment used. Specific equipment is not defined in the equipment value. The 7th character is not specified in the Physical Rehabilitation and Diagnostic Audiology section; therefore the value is always Z, No Qualifier.

Case 25

Correct Code(s): 0TF3XZZ, 0TF4XZZ

Location Process: Begin by reviewing the code options listed under the main term Lithotripsy. The Alphabetic Index instructs the user to see with Extirpation if there is removal of fragments, or see Fragmentation. In this case there is no documentation that the fragments were removed; therefore, it is a Fragmentation. PCS divides code choices based upon the body part and approach. In this case the procedure is performed on bilateral kidney by External approach, providing the first three characters, 0TF.

Once the table is accessed the values for the 4th character, Body Part, 5th character, Approach; 6th character, Device; and 7th character, Qualifier are identified.

Case 26

Correct Code(s): 10D00Z1

Location Process: Begin by reviewing the code options listed under the main term Cesarean Section. The Alphabetic Index instructs the user to see Extraction, Products of Conception. PCS divides code choice based on body part, approach, and type of extraction. The newborn is considered the products of conception and a cesarean is an Extraction, providing the first four characters, 10D0.

Once the table is accessed the values for the 5th character, Approach; 6th character, Device; and 7th character, Qualifier are identified.

Approach	Device	Qualifier
0 - Open	Z - No Qualifier	1 - Low Cervical

Rationale: The Obstetrics section has two additional root operations:

- Abortion: Artificially terminating a pregnancy
- Delivery: Assisting the passage of the products of conception from the genital canal.

A cesarean section is not a separate root operation because the underlying objective is Extraction (pulling out all or a portion of a body part). The body parts for this section are:

- Products of conception
- Products of conception, retained
- Products of conception, ectopic

The 7th character values are specific to the root operation and are used to specify the type of extraction (low forceps, high forceps, etc), the type of cesarean section (classical, low cervical, etc), or the type of fluid taken out during a drainage procedure (amniotic fluid, fetal blood, etc).

Case 27

Correct Code(s): 0UDB8ZZ

Location Process: Begin by reviewing the code options listed under the main term Curettage. The Alphabetic Index instructs the user to see Extraction or see Excision. PCS divides code choice based on body part. In this case the D&C is considered a root operation of Extraction and the body part is the endometrium, providing the first four characters, 0UDB.

Once the table is accessed the values for the 5th character, Approach; 6th character, Device; and 7th character, Qualifier are identified.

Approach	Device	Qualifier
8 - Via Natural or Artificial Opening Endoscopic	Z - No Qualifier	Z - No Qualifier

Rationale: In this case, D&C is considered a root operation of Extraction as force is used to pull or strip out all or a portion of a body part (endometrium). Since visualization instrumentation, a hysteroscope, was used to reach the site of the procedure, the approach is considered Via Natural or Artificial Opening, Endoscopic.

Case 28

Correct Code(s): 10E0XZZ

Location Process: Begin by reviewing the code options listed under the main term Delivery. The Alphabetic Index instructs the user to see the type of delivery and gives the following choices:

Cesarean see Extraction, Products of Conception

Forceps see Extraction, Products of Conception

Manually Assisted

Products of Conception

Vacuum assisted see Extraction, Products of Conception

In this case, no forceps were utilized, making this a manually assisted delivery. PCS lists one code for this procedure: 10E0XZZ. The first three characters, 10E can lead you to the PCS table.

Once the table is accessed the values for the 4th character, Body Part, 5th character, Approach; 6th character, Device; and 7th character, Qualifier are identified.

Body Part	Approach	Device	Qualifier
0 -Products of Conception	X - External	Z - No Device	Z - No Qualifier

Rationale: The Obstetrics section has two additional root operations:

- Abortion: Artificially terminating a pregnancy
- Delivery: Assisting the passage of the products of conception from the genital canal.

Since this is not a cesarean section, it is considered the root operation of Delivery. According to the guidelines (B3.1b), the repair would not be separately reportable as procedural steps necessary to reach the operative site and close the operative sites are not coded separately.

Case 29

Correct Code(s): 0HRLX74, 0HRKX74

Location Process: Begin by reviewing the code options listed under the main term Graft. The Alphabetic Index instructs the user to see Replacement or see Supplement. In this case the graft is replacing the patient's skin. PCS divides the code choice by body part and type of graft. In this case the graft is placed on the right and left lower leg, so two codes are necessary. The first three matching characters are: 0HR.

Once the table is accessed the values for the 4th character, Body Part, 5th character, Approach; 6th character, Device; and 7th character, Qualifier are identified.

Body Part	Approach	Device	Qualifier
L - Skin, Left Lower Leg	X - External	7 - Autologous Tissue Substitute	4 - Partial Thickness
K - Skin, Right Lower Leg	X - External	7 - Autologous Tissue Substitute	4 - Partial Thickness

Rationale: Since there is not a bilateral body part code choice, two codes are necessary to report the complete procedure. The 6th character indicates the device and is used only to specify devices that remain after the procedure is completed. There are four general types of devices:

- Grafts and Prostheses
- Implants
- Simple or Mechanical Appliances
- Electronic Appliances

For skin replacement, the types of devices listed in the tables are as follows: autologous, nonautologous, and synthetic. The operative report indicates harvesting from the patient's thigh, making this an autologous device. The 7th character further specifies the type of graft. The three valid choices in the tables for skin of the lower legs are as follows: full thickness, partial thickness, and No qualifier. In this case, the grafts were documented as split-thickness grafts.

Case 30

Correct Code(s): 07DR3ZX

Location Process: Begin by reviewing the root operation, Extraction. Extraction procedures are divided based upon anatomic site and bone marrow is further defined by the specific site from which the marrow is extracted. In this case the specific site is the Iliac crest and the index provides the first four character values, 07DR.

Review the table for the 5th through 7th character values

Approach	Device	Qualifier
3 - Percutaneous	Z - No Device	X - Diagnostic

Rationale: PCS defines the root operation, Extraction, as the use of force to pull or strip out or off all or a portion of a body part. Bone marrow is withdrawn by the use of force from the interior portion of the bone. As this procedure was completed by a trephine needle inserted through the skin the approach character value is percutaneous.

Case 31

Correct Code(s): 0RG10A0

Location Process: Begin by locating the root operation, Fusion. Subterms listed below this Fusion are divided anatomically and include choices listed under the Cervical Vertebral subterm to indicate the number of vertebral bodies fused. In this case only 2 bodies were fused, providing the first four characters of the code, 0RG1.

Reviewing the table provides 5th through 7th character values

Approach	Device	Qualifier
0 - Open	A - Interbody Fusion Device	0 - Anterior Approach, Anterior Column

Rational: As the objective of this procedure is to fuse the vertebra to stabilize and maintain the intervertebral space the root operation is Fusion. In order to meet the objective of the procedure the intervertebral disc must be removed, therefore its removal is a component of the root operation and not coded separately. The device used in this case was 4 mm PEEK cage that is placed between the two vertebral bodies and is commonly known as an interbody fusion device.

Case 32

Correct Code(s): 2W3LX1Z

Location Process: Begin by indexing the common procedural term Splinting. The PCS index provides the root operation, Immobilization. Reviewing the term Immobilization is divided first by anatomic subterms for regions of the body and provides choices for the Extremity defined by lower and upper extremities and laterality. For immobilization of the right lower extremity the index provides the first five character values of 2W3LX.

Accessing the table provides the 6th and 7th character values

Device	Qualifier
1 - Splint	Z - No Qualifier

Rationale: PCS defines the application of a split by the objective of the procedure, to limit or prevent motion of an external body region; Immobilization.

Case 33

Correct Code(s): 05PY03Z

Location Process: Begin by reviewing the code options listed under the main term Removal. PCS divides code choice based on body part, approach, and type of device. In this case, the device is removed from an upper vein providing the first four characters, 05PY.

Once the table is accessed the values for the 5th character, Approach; 6th character, Device; and 7th character, Qualifier are identified.

Approach	Device	Qualifier
0 - Open	3 - Infusion Device	Z - No Qualifier

Rationale: Device removals for the vein are separated in the tables by upper veins and lower veins. In this case the Port-a-Cath was removed from the subclavian. The 6th character identifies the device and is used only to specify devices that remain after the procedure is completed. If the objective of the procedure is to remove the device, then the root operation is Removal.

Case 34

Correct Code(s): 0BBJ0ZZ, 0BBG0ZZ

Location Process: Begin by reviewing the code options listed under the main term Excision. PCS divides code choice based on body part and approach. In this case, the wedge resections of the left upper lobe and left lower lobe were performed, but there is not a multiple sites choice for the body part character. The first three matching characters are: 0BB.

Once the table is accessed the values for the 4th character, Body Part, 5th character, Approach; 6th character, Device; and 7th character, Qualifier are identified.

Body Part	Approach	Device	Qualifier
J - Lower Lung Lobe, Left	0 - Open	Z - No Device	Z- No Qualifier
G - Upper Lung Lobe, Left	0 - Open	Z - No Device	Z- No Qualifier

Rationale: Although listed as a resection on the operative report, since the entire lobes were not removed, the root operation is considered Excision. According to the guidelines (B3.2.a) if the same root operation is performed on different body parts as defined by distinct values of the body part character, multiple procedures are coded.

Case 35

Correct Code(s): 0TBB4ZX

Location Process: Begin by reviewing the code options listed under the main term Excision. PCS divides code choice based on body part, approach, and qualifier. In this case, a cystoscopy of the bladder is performed providing the first four characters: 0TBB.

Once the table is accessed the values for the 5th character, Approach; 6th character, Device; and 7th character, Qualifier are identified.

Approach	Device	Qualifier
4 - Percutaneous Endoscopic	Z - No Device	X - Diagnostic

Rationale: Since a piece of the bladder was taken for diagnostic purposes, the root operation is considered Excision. The 7th character identifies the qualifier. The qualifier contains unique values for individual procedures. In this a biopsy is taken of the bladder; therefore the Qualifier is Diagnostic. According to the guidelines (B3.11a) inspection of a body part(s) performed in order to achieve the objective of a procedure is not coded separately.