New ICD-9-CM Procedure Codes for FY 2011

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The new ICD-9-CM procedure codes go into effect October 1, 2010, for fiscal year 2011. This article highlights the new and revised codes for inpatient procedures performed in healthcare facilities across the United States.

The 2011 addenda with the all the changes to the ICD-9-CM procedure tabular and alphabetic index (volume 3) is located on the Centers for Medicare and Medicaid Services Web site at www.cms.gov/ICD9ProviderDiagnosticCodes/04_addendum.asp.

New Codes

Insertion of Stent into Peripheral Vessels

A new procedure code (00.60) was created for the insertion of drug-eluting stent(s) into the superficial femoral artery. A note follows code 00.60 in the tabular list to code also any angioplasty or atherectomy of other noncoronary vessels (39.50), the number of vascular stents inserted (00.45–00.48), the number of vessels treated (00.40–00.43), and the procedure on vessel bifurcation (00.44).

Treatment of peripheral arteries with stents can be a challenging procedure, particularly in the superficial femoral artery. This artery begins where the common femoral artery divides in the groin and runs the length of the thigh before it becomes the popliteal artery in the popliteal fossa behind the knee. Lesions in the superficial femoral artery tend to be complex with long or calcified plaque and total occlusions.

Physicians may identify the stent used as the Zilver PTX paclitaxel drug-eluting peripheral stent from Cook Medical. The stent is intended to treat symptomatic peripheral arterial disease in the above-the-knee vessel.

The title for code 00.55 was revised to "insertion of drug-eluting stent(s) of other peripheral vessel(s)," and an excludes note was added to the tabular list to exclude the insertion of drug-eluting stent(s) of superficial femoral artery (00.60).

Cranial Implantation, Replacement ,or Removal of Neurostimulator Pulse Generator

New procedure codes were created for the cranial implantation or replacement of neurostimulator pulse generator (01.20) and removal of cranial neurostimulator pulse generator (01.29). A code also note appears in the tabular list under code 01.20 to remind coders to also code any associated lead implantation (02.93).

The physician description for the cranial neurostimulator may be the RNS System, manufactured by NeuroPace. The RNS System uses responsive neurostimulation to monitor and interrupt abnormal electrical activity in the brain before seizures occur.

The device is intended to treat adults with medically refractory partial onset epilepsy originating from one or two locations in the brain. Partial onset epilepsy is a common form of epilepsy that is difficult to treat with medication.

The RNS System continuously monitors brain electrical activity. After identifying a preprogrammed abnormal pattern, the device delivers brief and mild electrical stimulation with the intention of suppressing the seizure before symptoms occur.

Implantation components include the RNS neurostimulator, depth leads, and cortical strip leads. The device is implanted within the skull bone and connected to one or two leads that are implanted near the patient's seizure focus or foci. External products

include a physician programmer and a patient remote monitor. Both products use proprietary software to enable communication with the implanted RNS neurostimulator.

Patients use the remote monitor to transmit electrocorticogram information stored in the neurostimulator to a secure data repository where physicians can review and analyze the information. The information is communicated over the Internet for the physician to monitor the patient's condition between office appointments.

Currently the RNS System is an investigational device, but NeuroPace submitted its Premarket Approval application to the US Food and Drug Administration (FDA). FDA approval could occur in early 2011.

Implantation of the cranial neurostimulator is performed in the hospital inpatient setting with patients under general anesthesia. The procedure typically takes three hours to complete.

New code 01.20 will also be used for the replacement of the neurostimulator pulse generator due to battery depletion, which on an average occurs every three years. Replacement of the neurostimulator can be done in either the inpatient or outpatient setting.

New code 01.29 for the removal of cranial neurostimulator pulse generator was created to describe the removal of a neurostimulator without replacement. Removal includes removal of the device and repair of the craniectomy defect using a cranioplasty to repair the portion of the skull that was removed when the device was inserted.

This procedure would occur in the inpatient setting with the patient under general anesthesia. The removal procedure is not anticipated to occur frequently.

Noncoronary Intraoperative Fluorescence Vascular Angiography

A new code (17.71) was created to describe noncoronary intraoperative fluorescence vascular angiography, or IFVA. The physician may identify the procedure as an intraoperative laser arteriogram, SPY arteriogram, or SPY arteriography. The code was requested to report intraoperative angiography performed in noncoronary procedures, including breast reconstruction and plastic reconstruction procedures on the face or other body parts.

The title of code 88.59, Intraoperative coronary fluorescence vascular angiography, was revised to include the word "coronary" to identify when the same type of imaging is performed intraoperatively on coronary vessels.

Physicians may refer to the equipment used for IFVA as the Novadaq or SPY imaging system. It uses a fluorescence imaging agent, which is injected into vessels for the angiography. It is safer for patients with or at risk for renal insufficiency and contraindicated for the dye used in traditional x-ray angiography.

IFVA or SPY imaging allows the surgeon to capture, review, print, and archive image sequences of blood flow in vessels, microvessels, tissues, and organ perfusion within minutes. It occurs in real-time during the course of performing the surgical procedure.

The equipment is a mobile imaging unit that can be moved from one operating room to another. SPY imaging has been approved by the FDA for use during coronary artery bypass and cardiovascular, plastic, reconstructive, and organ transplant procedures.

The imaging may be referred to as "completion angiography" to detect and treat any vascular defects or blood perfusion in tissues and organs before the completion of the surgical procedure.

Bronchoscopic Bronchial Thermoplasty, Ablation of Airway Smooth Muscle

Code 32.27 Bronchoscopic bronchial thermoplasty, ablation of airway smooth muscle, was created to identify a bronchoscopic procedure that uses the application of radio frequency–based technology to treat severe asthma. Bronchial thermoplasty ablates or reduces the airway smooth muscle in the lung.

Airway smooth muscle is located within the walls of the airways of the lung. Patients with asthma have a significant increase in the amount of airway smooth muscle in the lungs. This increased muscle mass has the potential to increase airway response to external stimuli, such as dust, allergens, cold air, or stress, and cause broncho-constriction, which produces asthma symptoms.

Most patients are treated with medications to prevent constriction of airway smooth muscle, but patients with severe persistent asthma have been proven to benefit from the reduction of airway smooth muscle using thermoplasty or ablation.

Physicians may refer to the equipment used as the Alair Bronchial Thermoplasty System, which includes a catheter with an electrode that delivers radiofrequency energy directly to the airways of the lungs through the bronchoscope. A controller unit generates and controls the energy. The thermal radiofrequency energy to the airway wall heats the tissue in a controlled manner in order to reduce airway smooth muscle mass or muscle thickness. Patients are treated in multiple sessions, each targeting a different area of the lungs.

Bronchoscopic bronchial thermoplasty is indicated for the treatment of severe persistent asthma in patients 18 years and older whose asthma is not well controlled with inhaled corticosteroids and long-acting beta-agonist medicines. The treatment has proven to reduce the number of severe asthma attacks in patients with severe persistent asthma.

Percutaneous Mitral Valve Repair with Implant

Code 35.97, Percutaneous mitral valve repair with implant, was added for a currently investigational procedure that is expected to gain FDA approval in early 2011. Physicians may refer to the procedure as the insertion of the "MitraClip" or MitraClip therapy.

The new device was developed by Evalve, which is currently owned by Abbott Laboratories. The MitraClip System is used for minimally invasive mitral valve repair. It is designed to clip the leaflets of the mitral valve together to reduce mitral regurgitation.

The mitral valve is the "inflow valve" for the left side of the heart, separating the left atrium (the chamber that collects blood from the lungs) from the left ventricle (the main pumping chamber). Mitral regurgitation is the most common type of heart valve insufficiency that prevents the mitral valve from closing completely, causing blood to flow backwards within the heart. It can lead to heart failure.

Traditionally, it has been corrected through open heart surgery to repair or replace the mitral valve. However, about 20 percent of patients diagnosed with mitral regurgitation are surgical candidates, with the other 80 percent treated for symptomatic relief only because they are high risk for open heart surgery.

The MitraClip System is used by interventional cardiologists usually in a cardiac catheterization procedure suite, and is considered a closed chest procedure or a percutaneous mitral valve procedure. A guide catheter is inserted into the femoral vein in the groin and advanced to the mitral valve. The clip delivery system is used to deliver and deploy the MitraClip device through the catheter.

While the heart is beating and pumping blood, the physician deploys the clip to grasp and fasten together the valve leaflets. This allows the mitral valve to close more precisely and eliminate most of the regurgitation. Sometimes the procedure requires the deployment and attachment of the second clip. The procedure does not involve a chest incision or the use of the heart-lung machine, potentially allowing patients to avoid the complications and long recovery time often associated with open heart surgery.

In October 2009, actress Elizabeth Taylor wrote on Twitter that she had an experimental procedure on her heart that involved repairing her leaky valve using a clip device without open heart surgery. It was later confirmed that the procedure used the MitraClip, and Cedars-Sinai was the only Los Angeles–area hospital using the new device.

With the creation of this new code, another procedure code had to be revised. The title of code 35.96 was changed from percutaneous valvuloplasty to percutaneous balloon valvuloplasty to identify another type of percutaneous heart valve procedure that is a balloon dilation of a heart valve.

Excision or Destruction of Other Lesion or Tissue of Heart, Thoracoscopic Approach

The procedure to excise or destroy other lesions or tissues of the heart is known more commonly as the maze procedure or maze heart surgery. Prior to October 2010, there were two ICD-9-CM procedure codes that included the maze procedure:

- 37.33, Excision or destruction of other lesion or tissue of heart, open approach, and
- 37.34, Excision or destruction of other lesion or tissue of heart, other approach.

Code 37.33 was revised in the tabular list to include the inclusion terms of incision of heart tissue and that by median sternotomy to emphasize the open chest approach for this procedure. The open approach is the oldest approach developed in 1987 by a surgeon, Dr James Cox of Washington University in St Louis and first called the CoxMaze procedure.

The title of code 37.34 was revised to change "other approach" to excision or destruction of other lesion or tissue of heart, "endovascular" approach. This code has been used for the endovascular or percutaneous approach, which is done in the cardiac catheterization procedure suite.

The third approach that can be used for the same procedure is by thoracoscopic approach. Procedure code 37.37 is added as excision or destruction of other lesion or tissue of heart, thoracoscopic approach. This procedure may also be referred to as the "mini-maze" or the Wolf Mini-Maze procedure developed by Dr Randall Wolf at University Hospital in Cincinnati.

Maze heart surgery is a complex procedure to treat atrial fibrillation. The heart surgeon creates multiple cuts into the right and left atrium of the heart in an intricate pattern or "maze." The surgeon then stitches together the incision to produce scars.

Because the scars in the heart do not carry electrical signals, the scars interfere with stray electrical impulses that cause atrial fibrillation. This restores the heart's regular, normal rhythm. Sometimes, the surgeon uses cryoablation or radiofrequency instead of incisions to make the "maze."

Maze surgery is usually reserved for patients' with atrial fibrillation not controlled by medications with symptoms that interfere with quality of life or for patients at high risk for blood clots or stroke.

Central Venous Catheter Placement with Guidance

Code 38.97 was created for central venous catheter placement with guidance. The guidance may be by electrocardiogram, fluoroscopy, or ultrasound. The newest approach to inserting indwelling vascular catheters involves the use of electrocardiographic guidance to assist with proper positioning of the catheter.

A new device from Bard Access Systems called the Sherlock 3CG Tip Positioning System combines electrocardiography (ECG) with catheter insertion in order to accurately place the catheter tip in the proper position in the superior vena cava. It is used for peripherally inserted central catheters. .

Two standard exterior ECG electrodes are placed on the left shoulder and left lower abdomen and used with the intravascular electrode located on the tip of the catheter. The optimal catheter tip placement is correlated with the appearance of the ECG signal and magnetic technology within the device. This allows the physician rapid feedback so that catheter misplacements can be easily detected and corrected, if necessary.

Implantation or Replacement of Carotid Sinus Stimulation Device

Nine new codes were added to describe the implantation or replacement of the carotid sinus stimulation device. Subcategory 39.8, Operations on carotid body, carotid sinus, and other vascular bodies, was expanded to the fifth-digit level to identify:

- Implantation or replacement of carotid sinus stimulation device, total system (39.81)
- Implantation or replacement of carotid sinus stimulation lead(s) only (39.82)
- Implantation or replacement of carotid sinus stimulation pulse generator only (39.83)
- Revision of carotid sinus stimulation lead(s) only (39.84)
- Revision of carotid sinus stimulation pulse generator (39.85)

- Removal of carotid sinus stimulation device, total system (39.86)
- Removal or carotid sinus stimulation lead(s) only (39.87)
- Removal of carotid sinus stimulation pulse generator only (39.88)
- Other operations on carotid body, carotid sinus, and other vascular bodies (39.89)

The new codes were created to address the use of the Rheos System, an implantable device to treat high blood pressure and heart failure developed by CVRx. Its patented Baroreflex Activation Therapy technology triggers the body's natural blood flow regulation system.

The system includes three components: the Rheos device, the carotid sinus leads, and the programmer system. A surgical implant procedure is used to place the device or generator under the skin near the clavicle. The electrodes or leads are placed on the carotid arteries, and the leads run under the skin and are connected to the generator.

The Rheos System electrically activates the baroreceptors, the body's natural blood flow regulation sensors that regulate cardiovascular function. The baroreceptors are located on the carotid artery and in the carotid sinus. When activated, signals are sent through neural pathways to the brain. The brain sends signals to other parts of the body to relax arteries to improve blood flow, slow the heart rate to allow more time for the heart to fill with blood, and reduce fluid build-up to decrease workload on the heart.

The device is currently investigational and is limited to use in clinical trials. The Hope4HF Trial is in progress in more than 20 academic centers in the US to demonstrate the safety and efficacy of the Rheos Baroreflex Activation Therapy System in patients with heart failure with an ejection fraction of 40 percent or greater.

Reverse Total Shoulder Replacement

New procedure code 81.88 was added to identify a reverse total shoulder replacement. This is an alternative procedure for patients whose shoulder disorder cannot be effectively managed with a conventional total shoulder replacement.

In a conventional total shoulder replacement, the damaged bone and cartilage are removed and replaced with metal and plastic implants. Typically three implants are used: a ball to replace the humeral head, a stem to anchor the ball into the shaft of the humerus, and a cup to form the socket on the glenoid.

This procedure is effective for treating patients with osteoarthritis and fractures of the humeral head. However, in patients with rotator cuff tear arthropathy, conventional replacement is not always indicated.

The rotator cuff is a group of tendons and muscles that surrounds and stabilizes the shoulder joint and enables rotation of the arm. Rotator cuff tear arthropathy involves irreparable cuff damage and leads to degeneration of the bone with severe displacement of the humeral head.

A reverse total shoulder replacement is a surgical option for patients with rotator cuff tear arthropathy, complex fractures, and a failed previous conventional total shoulder replacement.

In the reverse procedure, the ball and socket implant are implanted in opposite locations. The ball is placed on the glenoid and the socket is placed on top of the humerus. A baseplate, or metaglene, is screwed into the glenoid, and a metallic ball or glenosphere is attached to the baseplate. On the other side, a metallic stem and neck are implanted into the humerus to which the cup or polyethylene liner or insert is attached. A permanent spacer may also be used in the humerus.

Part of the procedure may involve releasing the biceps tendon as well as releasing and reattaching the subscapularis tendon. Debridement of the bone as well as bone grafting may often occur to repair defects in the glenoid surface. Transfer of nearby muscles and tendons are also performed to help restore rotation and ensure stability of the joint. The deltoid muscle is used to compensate for the irreparable rotator cuff damage.

The reverse total shoulder replacement has been performed on patients age 65 and older who have lower functional needs because the procedure may not restore full function to the shoulder but does provide important relief of shoulder pain and functionality of the upper limb.

Because this new code was added, the title for code 81.80 was revised to "other total should replacement." Code 81.80 will continue to be used for conventional total shoulder replacement coding.

Insertion of Sternal Fixation Device with Rigid Plates

Until October 2010 there was no unique code to identify the internal fixation of the sternum using rigid plates. This procedure had been identified with the more generic code 78.51, Internal fixation of bone without fracture reduction, scapula, clavicle, and thorax. New code 84.94, Insertion of sternal fixation device with rigid plates, was created to identify this specific type of bone fixation. An excludes note was added to subcategory 78.5 to refer coders to the new code 84.94 for the sternal fixation procedure.

The new code was requested to describe the fixation of the sternum with rigid plates for the prevention of sternal dehiscence and deep sternal wound infections after cardiothoracic surgery. The conventional approach to sternal closure after cardiothoracic surgery is sternal wiring. However, in patients at higher risk for sternal dehiscence (patients with obesity, diabetes, COPD, renal failure, steroid use, and tobacco use), the use of rigid fixation of the sternum has demonstrated significantly reduced incidence of sternal dehiscence and deep sternal wound infection.

Physicians may identify the fixation device used as the Synthes Titanium Sternal Fixation System. The system uses locking plate technology that functions like an external fixator but is applied internally to the sternum following cardiothoracic surgery in the inpatient setting. Plates link the two sternal halves, and screws link the plates to the sternum and the ribs.

The new code will be used to track and measure the use and effect of sternal fixation with rigid plates in preventing sternal dehiscence and deep sternal wound infections.

Fat Grafting for Reconstructive Surgery

Three new procedure codes were added for harvesting or placing fat grafts in reconstructive surgery:

- 85.55, Fat graft to breast
- 86.87, Fat graft to skin and subcutaneous tissue
- 86.90, Extraction of fat for graft or banking

Fat grafting is the process of harvesting, preparing, and injecting fat cells to correct soft tissue defects. Fat grafts are used in reconstructive procedures, most commonly in the breast following a lumpectomy or as an adjunct procedure with post-mastectomy reconstruction. They are used in cosmetic procedures, such as augmenting lips and filling in facial wrinkles.

The fat used for grafting is always autologous as it is harvested and grafted in the same patient. After injecting tumescent fluid, a standard liposuction catheter is placed subcutaneously, and adipose tissue is harvested, usually from the abdomen, flanks, or thighs. The lipoaspirate is processed conventionally by centrifuging it to remove extra fluid and obtain a more concentrated graft. New techniques have been developed to enrich the fat graft with more adipose progenitor cells to enhance graft survival.

The technique for placement into the recipient area is the same for conventional and enriched fat grafts. The graft material is loaded into a syringe. The needle or cannula is inserted into the subcutaneous tissue at the site of the defect, and small droplets of fat are injected. The needle is passed through different layers in different directions (called fanning) to ensure even distribution and maximal surface area of the fat grafts.

Fat grafting of the breast can be performed on a solo procedure; it can also be done during the same operative episode as breast reconstruction procedures such as myocutaneous flaps, breast implants, and mammoplasty for revision of previously reconstructed breasts.

Code 85.55 is intended to represent fat graft to breast with or without the use of enriched graft. It includes the extraction of fat for the autologous graft. Code 86.87, Fat graft of skin and subcutaneous tissue, also includes the extraction of fat for autologous graft and may be a fat graft with or without the use of enriched graft.

Code 86.90, Extraction of fat for graft or banking, is intended to identify the episode when there is a harvest of fat for extraction of cells for future use. This operative episode may be a liposuction to harvest a fat graft but the graft is not placed in the recipient area at the time of harvesting.

An excludes note appears with code 86.90 to state that extraction with graft at the same operative episode is coded with procedure codes 85.55 and 86.87.

Revised Codes

Spinal Fusion

The code titles for codes 81.02–81.08 were revised to add the location of the fusion as the anterior or posterior column for the cervical, dorsal, dorsolumbar, lumbar, and lumbosacral regions by anterior or posterior technique.

Similarly, the code titles for codes 81.32–81.38 were revised to add anterior column or posterior column for the refusion procedures of the cervical, dorsal, dorsolumbar, lumbar, and lumbosacral spine by anterior or posterior technique.

Biopsy of Soft Tissue Mass

Two revisions were made to codes identifying whether a biopsy was performed by an open or closed technique. Code 83.21, Biopsy of soft tissue, was retitled "open biopsy of soft tissue." Code 86.11, Biopsy of skin and subcutaneous tissue, was retitled "closed biopsy of skin and subcutaneous tissue."

Injection or Infusion of Immunoglobulin

The title of code 99.14 was revised from "injection or infusion of gamma globulin" to "injection or infusion of immunoglobulin" to more accurately describe the procedure. The injection or infusion of IgG, IVIG, or IVIg (immunoglobulin) continues to be coded to code 99.14.

Bronchial Lavage

The main term Lavage, subterm Bronchus, Diagnostic, in the alphabetic index was changed to distinguish between bronchoalverolar lavage (BAL) that is coded to 33.24 and minibronchoalveolar lavage (mini-BAL) that is now directed to be coded as 33.29.

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