CentraMed

Welcome to the June edition of Net Revenue Matters, a publication of CentraMed.

We have devoted this month's issue to a special topics discussion of ICD-10-CM. The material is presented by Marty Beckman, MA, RHIT, CCS, AHIMA-Approved ICD-10-CM/PCS Trainer and his article is titled, "ICD-10-CM: Special Topics Related to Coding and Documentation of Traumatic Fractures."

We hope that you find the content informative and useful.

Also, please be sure to note our client corner and upcoming events. We don't want you to miss anything.

Inside this issue:

ICD-10-CM: Special Topics Related to Coding and Documentation of Traumatic Fractures

With the ICD-10-CM and PCS implementation date likely being extended until October 1, 2014, facilities will have an additional year to prepare for the enhanced granularity and complexity of the new coding classification system, an opportunity to get physicians and coders alike up to speed on some of the more daunting challenges that lie ahead in mastering the added level of detail. One of the areas that will undergo some dramatic changes is the coding of traumatic fractures in ICD-10-CM.

In ICD-9-CM, selecting the correct fracture code depends on identifying the bone fracture and ascertaining whether the fracture was pathological or traumatic and whether it was open or closed. The new system will require all this as well, but more information will be needed to determine the sixth and seventh digits of the ICD-10-CM fracture codes. For the former, the coder needs to find out if the bone is displaced and which side of the body is involved with the injury. Even more detail is needed for the latter. The seventh digit is intended to further characterize the nature of the encounter as initial, subsequent or sequela; the status of the fracture as open or closed with some types of open fractures needing additional information pertaining to the extent of the associated soft tissue injury; and the status of bone healing as routine, delayed, nonunion or malunion.

The aforementioned describes the general items needed to accurately code any traumatic fracture, but several specific types and sites of fractures will pose some new and unique challenges for coders. Among these will be learning the terms associated with types of fractures of the shaft of long bones as well as thoracolumbar vertebrae and understanding the classification systems pertinent to soft tissue injuries in the setting of open fractures and particular fracture sites such as the proximal humerus and sacrum, all of which will be discussed below.

Gustilo-Anderson Classification of Open Fractures

As stated previously, some open fracture sites (i.e., radius, ulna, femur, patella, tibia, and fibula) in ICD-10-CM require a seventh digit character that describes the grade of soft tissue injury associated with the open fracture. The risk of wound infection and nonunion increases with the increasing grade of the fracture. A number of grading systems have been developed over the years, but the one most commonly used in the United States, and the one incorporated into ICD-10-CM, is the Gustilo-Anderson classification. This grading system takes into account the following aspects: the size and dimension of the wound, the degree of wound contamination, the degree of communition (i.e., fragmenting or splintering) or periosteal stripping, and the presence or absence of neurovascular injury.

"...some open fracture sites (i.e., radius, ulna, femur, patella, tibia, and fibula) in ICD-10-CM require a seventh digit character..."

A wound classified as **Grade I** would be less than 1 cm long and typically involve a moderately clean puncture through which a spike of bone has pierced the skin. There is usually little soft tissue damage and no sign of crushing injury. The fracture itself exhibits only a minimal degree of communition.

In **Grade II**, the laceration overlying the open fracture is more than 1 cm long but with no extensive soft tissue damage, flap, or avulsion. There may be slight or moderate crushing injury, moderate contamination of the wound, and moderate communition of the fracture.

Grade III wounds are also more than 1 cm long but do exhibit extensive soft tissue damage along with a high degree of contamination, communition, and instability. These wounds are further subdivided as Grades **IIIA**, **IIIB**, or **IIIC**. Grade IIIA denotes that soft tissue coverage of the fractured bone is adequate without need for local or distant flap repair. Grade IIIB describes extensive injury to, or loss of, soft tissue with periosteal stripping and exposure of bone, massive contamination, and severe communition of the fracture. A local or free flap repair will be needed to cover the wound. Grade IIIC represents any open fracture associated with an arterial injury requiring repair, regardless of the extent of soft tissue injury.

As an example, if a patient is diagnosed, on the initial encounter, with a displaced open fracture of medial condyle of the right tibia with Grade IIIA soft tissue damage, the correct code assignment would be S82.131C. The first five characters of the code identify this as tibial medial condyle fracture. The sixth character denotes that this is a displaced fracture involving the right tibia. The seventh character of C captures the initial encounter and designates this as an open fracture with any type III soft tissue wound grade. Documentation of the Gustilo-Anderson classification level is a prerequisite for selecting the appropriate seventh digit of this code.

Specific Terms for Shaft Fractures of Long Bones

ICD-10-CM contains separate fifth digit subcategories based on terminology describing the various types of long bone (i.e., humerus, radius, ulna, femur, tibia, and fibula) shaft fractures. Some of these terms have been nonessential modifiers for closed fractures in ICD-9-CM but otherwise do not impact code assignment as they clearly will in the new coding classification system. Definitions for the more important of these terms are as follows:

Comminuted: A fracture in which the bone has broken into three or more pieces or fragments.

Greenstick: An incomplete fracture, largely seen in children, involving a partial break or bending of the bone on the convex side.

Oblique: A fracture line that runs at a diagonal along the long axis of the bone shaft with the bone cortices of both fragments in the same plane.

Segmental: Several large fractures in the same bone shaft where the two principal fragments are not adjacent. This also may be referred to as a **double fracture.**

Spiral: A fracture caused by twisting or rotation forces with a fracture line that spirals along the long axis of a bone.

Transverse: A fracture line that is straight across or at a right angle to the long axis of a bone.

As an example, if a patient is diagnosed, on the initial encounter, with a nondisplaced closed transverse fracture of the left radial shaft, the correct code assignment would be S52.325A. The first four characters identify this as a radial shaft fracture. The fifth character denotes the fracture type as transverse. The sixth character characterizes this as a nondisplaced fracture on the left side, while the seventh character signals that this represents an initial encounter for a closed fracture.

Salter-Harris Classification of Growth Plate Fractures

Physeal fractures, also referred to as Salter-Harris fractures, occur along the epiphyseal growth plates in bones that have not attained their full growth and in which the plates are still open and filled with cartilage; consequently, these fractures are encountered exclusively in pediatric patients. Before discussing the various types of Salter-Harris fractures, some consideration must be given to defining the anatomical terms pertinent to this area:

Diaphysis: The shaft of a long bone.

Epiphysis: The distal or proximal end of a long bone that develops from a secondary ossification center apart from the shaft and that remains separated from the shaft by a layer of cartilage called the epiphyseal cartilage until the bone growth process has been completed.

Metaphysis: The section of bone between the epiphysis and diaphysis of long bone.

Physis: Synonymous with epiphyseal cartilage or growth plate.

Salter-Harris fractures are classified into nine types. In ICD-10-CM, they are listed in the alphabetical index under the main term "fracture" and then by site under the term "physeal." Documentation of type is needed to assign the most specific code. Types I-IV have specific codes for the majority of sites. Types V-IX are reported under other physeal fracture. Unspecified codes are available for physeal fracture cases where no type is identified.

Types I-IV are the most frequently encountered types and have the following features:

Salter Harris Type I: This represents a transverse fracture through the physis only, thereby widening the latter. The most critical part of the growth plate usually remains attached to the epiphysis. About 5% of Salter-Harris fractures consist of this type.

Salter Harris Type II: This involves fracture through the physis and metaphysis but with no epiphyseal involvement. Comprising roughly 75% of the total cases, this is the most common of the Salter-Harris fracture types.

Salter Harris Type III: Here the physis and epiphysis are affected, typically resulting in damage to the reproductive part of the physis. Chronic disability may arise due to involvement of the articular surface. This type accounts for approximately 10% of cases.

Salter Harris Type IV: This represents fracture through the epiphysis, physis, and metaphysis. As with type III, involvement of the articular surface leads to chronic disability. Damage to the growing cartilage poses a high risk of premature bone fusion and future growth disturbance. Surgery is required to realign the growth plate. This type also accounts for about 10% of the total cases.

Types V-IX are rarely encountered, comprising less than 1% of all Salter-Harris fractures. Again, these less common types do not have their own specific codes but instead would all be included in the code for other physeal fracture.

"To provide a coding example,..."

To provide a coding example, if a patient came in for subsequent treatment related to nonunited type IV Salter-Harris fracture of the lower end of the right

femur, correct code assignment would be S79.141K. The first four characters identify this as a physeal fracture of the lower end of the femur. The fifth character denotes the specific type of Salter-Harris fracture as type IV. The sixth character specifies the laterality as the lower end of the right femur. The seventh character clarifies that this represents a subsequent encounter for a nonunion of fracture.

Neer Classification of Proximal Humerus Fractures

According to the Neer classification, the proximal humerus consists of four sections or parts: the anatomical neck, greater tuberosity, lesser tuberosity, and the surgical neck. The anatomical neck comprises the widened articular surface of the humeral head. The greater tuberosity is located lateral to the humeral head on the superior aspect of the humerus and forms the attachment for the supraspinatus, infraspinatus, and teres minor rotator cuff muscles of the shoulder. The lesser tuberosity, located on the anterior surface of the humerus, forms the attachment for the subscapularis rotator cuff muscle. The surgical neck represents a narrowed area of the proximal humeral shaft lying just below or distal to the tuberosities and the humeral head.

Fractures of the proximal humerus in the Neer classification involve the counting of displaced or nondisplaced parts. A part is defined as displaced if >1 cm of fracture displacement or >45 degrees of angulation occurs.

A **one-part fracture** indicates the absence of any displaced fragments regardless of the number of fracture lines; in other words, the fracture sites within the proximal humerus are all nondisplaced and all nondisplaced sections constitute one part. Up to 85% of proximal humerus fractures are one-part or completely nondisplaced.

A **two-part fracture** means that any one of the four proximal humerus sections is displaced or separated from all the others; thus, there is one part displaced and the remaining three nondisplaced areas are counted as one part for a total of two parts. The surgical neck is the most commonly displaced fragment site for a two-part fracture, whereas anatomical neck displacement is quite rare.

In a **three-part fracture,** two fragments are displaced from the remaining two nondisplaced segments, the latter again counted as one part, for a total of three parts. A **four-part fracture** signifies that three fragments are displaced from the remaining part for a total of four parts. Both the three-part and four-part types of proximal humerus fractures involve displacement of the surgical neck. In the former, displacement of either the greater or lesser tuberosity accompanies the surgical neck; in the latter, both tuberosities are displaced along with the surgical neck.

ICD-10-CM's application of the Neer classification to the proximal humerus fracture subcategories is somewhat eccentric. Although two-part fractures can involve displacement of any of the four segments of the proximal humerus, ICD-10-CM only has a specific two-part fracture subcategory for the surgical neck. While separate subcategories do exist for the greater tuberosity, lesser tuberosity, and anatomical neck, no mention is made of the "two-part" terminology in any of them. These subcategories, however, do offer coding options for displaced or nondisplaced fractures. Coders just have to know that one-part proximal humerus fractures are implicitly nondisplaced and two-part proximal humerus fractures are implicitly displaced in order to arrive at proper code selection.

As an example, if a physician documents that a patient is having an initial encounter for a two-part closed fracture of the greater tuberosity of the right humerus, the correct code assignment would be S42.251A. The first four characters would classify this as a fracture of the upper end of or proximal area of the humerus. The fifth character would further specify this as a fracture of the greater tuberosity of the proximal humerus. The sixth character denotes that this is a displaced fracture of the greater tuberosity with right-sided laterality. The seventh character defines this as representing an initial encounter for a closed fracture. Since two-part fractures in the Neer classification are inherently displaced, selecting the code describing this as a displaced fracture would be the appropriate choice. This same logic

would be applied to displaced fractures of the lesser tuberosity and anatomical neck. Likewise, a diagnosis of a one-part fracture would be coded to the nondisplaced options within these subcategories.

"Coding of surgical neck fractures... is...problematic in at least one area."

Coding of surgical neck fractures in ICD-10-CM is also problematic in at least one area. Under the subcategories for three-part surgical neck (i.e, surgical neck with either greater or lesser tuberosity involvement) and four-part surgical neck (i.e., surgical neck with involvement of both tuberosities) fractures, the code options do not mention the terms "displaced" or "nondisplaced." This makes sense given the fact that these types of fractures would be considered inherently displaced, rendering the use of such terms within the code descriptors superfluous. However, this same logic should have been incorporated into the subcategory for two-part fractures of the surgical neck. Instead, in this instance, separate coding options are offered for two-part displaced and two-part nondisplaced surgical neck fractures, even though the phrase "two-part nondisplaced surgical neck fracture," in the context of the Neer classification system, represents a contradiction in terms. In the absence of any official guidance, it remains unclear when or if the codes describing a two-part nondisplaced surgical neck fracture should be reported.

Wedge Compression and Burst Fractures of the Thoracolumbar Vertebrae

Fractures of the thoracic and lumbar vertebrae may be classified into four different groups based on the mechanism of injury. Spinal areas affected include the anterior column (e.g., anterior longitudinal ligament and anterior half of the vertebral body and intervertebral disc.), middle column (e.g., posterior half of the vertebral body and intervertebral disc and posterior longitudinal ligament), and posterior column (pedicles, facets, laminae, spinous processes, and posterior ligamentous complex).

Flexion Compression (Wedge Compression Fractures): This fracture typically stems from a compression injury to the anterior column of the spine, resulting in a wedge-shaped fracture of the anterior vertebral body.

Axial Compression (Burst Fracture): The mechanism involved here is compression failure of the anterior and middle columns under an axial load causing the vertebral body to be crushed in all directions. Fracture may be stable or unstable. Among the signs of an unstable burst fracture are >50% loss of posterior vertebral body height, >50% spinal canal compromise, >15 to 25 degrees of kyphosis, and angulation >20 to 30 degrees. Also, in stable burst fractures, the posterior column is usually intact, whereas unstable burst fracture exhibits severe insult to this area.

Flexion-Distraction Injuries: These injuries result in compression failure of the anterior column and tension failure of the posterior and middle columns. One example of flexion-distraction injury is the **Chance fracture**, characterized by horizontal splitting of spinous process, transverse process, pedicles, and vertebral body.

Fracture-Dislocations: This set of injuries results from lateral flexion and rotation. The three subsets of fracture-dislocations include **flexion-rotation pattern** resulting in failure of the middle and posterior columns and compression of the anterior column with vertebral body dislocation, **flexion-distraction pattern** with failure of the posterior and middle columns and disruption of the pars articularis, and the **shear (sagittal slice) pattern** leading to failure of all three spinal columns.

ICD-10-CM thoracic and lumbar vertebra fracture codes feature separate specific subcategories for wedge compression fractures, stable burst fractures, and unstable burst fractures. Flexion distraction injuries and fracture-dislocations would be classified to the other specified vertebral fracture subcategory.

Fractures of the Sacrum

Most sacral fractures appear in tandem with pelvic ring fractures, but isolated fractures of the sacrum do occur. They are usually classified as either vertical, transverse, or oblique based on the direction of the fracture line.

The most frequently used scheme for vertical sacral fractures is the Denis classification of sacral fracture zones. **Zone I** describes vertical sacral ala fractures lateral to the neuroforamina with possible extension into the sacroiliac joint. Neurological injury is rare but, when present, typically involves the L4 and L5 nerve roots. **Zone II** denotes vertical transforaminal sacral fracture without spinal canal involvement. Neurological injury occurs in over one-quarter of cases and usually involves the L5-S2 nerve roots. **Zone III** represents any vertical sacral fracture involving the spinal canal. Neurological injury occurs in over one-half of cases. Bladder dysfunction and cauda equina syndrome are potential complications depending on the severity of fracture displacement. Fractures within this zone may also have a transverse component.

Transverse fractures of the sacrum may be divided into four types based on the Roy-Camille and modified Strange-Vognsen classification system. **Type 1** describes a transverse sacral fracture with anterior flexion but no sign of displacement. **Type 2** denotes transverse sacral fracture with anterior flexion and horizontal posterior displacement. **Type 3** represents a transverse extension fracture of the sacrum with anterior displacement and neurological impingement. **Type 4** transverse sacral fractures exhibit segmental communition of the S1 vertebral body caused by axial loading of the lumbar spine into the cephalad (i.e., anterior) part of the sacrum.

Oblique fractures may involve both the sacrum and lumbosacral junction. Typically, an oblique sacral fracture will occur at the base of the S1 facet or go directly through the facet joint, thereby increasing the likelihood of spinal instability.

ICD-10-CM has separate fifth digit subcategories (S32.11-S32.13) for the three vertical sacral fracture zones. Under each of these subcategories, sixth digit code options exist to further specify the vertical sacral fracture as nondisplaced, minimally displaced, or severely displaced. Separate subcategories (S32.14-S32.17) have also been created for the four transverse sacral fracture types. Since zone III vertical sacral fractures sometimes occur concurrently with transverse sacral fractures, a tabular list note instructs coders to use two codes if both vertical and transverse fractures are present. Oblique sacral fractures would be reported to the other fracture of sacrum subcategory (S32.19). As mentioned previously, sacral fractures most often occur in the setting of pelvic ring fractures. To accommodate this fact, ICD-10-CM has provided a tabular list note at the beginning of the sacral fracture code section instructing coders to code also any associated fracture of the pelvic ring.

Recommendations

Even a cursory review of the above information reveals the importance of physician documentation in accommodating these pending changes in fracture coding. The first preparatory step that facilities should undertake is to perform an audit on the current state of physician documentation as it relates to the fracture types discussed in this article. The results of this audit should prove instructive. Some physicians may be more consistent than others in documenting Salter-Harris types for growth plate fractures. Information pertaining to types of shaft fractures can often be found within the body of the chart or in the radiology reports. The item that will likely require the greatest attention is the Gustilo-Anderson classification of open fractures. This grading system is rarely documented, which is not surprising given the fact that it has never impacted code assignment in ICD-9-CM. However, physicians will have to become accustomed to providing this information since seventh digit selection for some open fracture codes is impossible to assign without it. The prudent approach would be to address the issue prophylactically well ahead of the ICD-10 implementation date in order to avoid the onslaught of query forms that will ensue if this data continues to go undocumented.

"Even a cursory review of the above information reveals the importance of physician documentation in accommodating these pending changes in fracture coding."

After completing and evaluating the initial audit, the coding and physician documentation improve-

ment staff members should discuss the results with the physicians, particularly those who specialize in orthopedics, trauma care, and emergency medicine, and offer training directed toward clarifying exactly what new level of detail will be required in the documentation and why this added granularity will be important, not only for enhancing coding compliance, but also for reflecting more accurately the severity of trauma encountered and the level of treatment rendered. Once this education process has been completed, a follow-up physician documentation audit should be administered, after a suitable period of time, to ascertain how effectively the physicians are incorporating the new data into their reports and progress notes. Contingent upon the findings of this second audit, some additional education and training may be required.

"Along with the physicians, coders and clinical documentation improvement analysts will also need to become acclimated to the added level of detail..."

Along with the physicians, coders and clinical documentation improvement analysts will also need to become acclimated to the added level of detail required to code fractures accurately in ICD-10-CM. Approximately six to nine months prior to the October 2014 implementation date, coders and CDI specialists should begin their education in earnest to prepare for the challenges posed by the new coding classification system. Since the coding of fractures will be one of the areas undergoing the most extensive changes, this should be considered as a particular area of focus for ICD-10 training. This training can take on many forms, everything from attending conferences, webinars, and audioseminars, studying books and articles pertinent to the subject, or coding practice charts and case studies related to fractures. Only by engaging seriously in a comprehensive, vigorous, and timely education program, one that includes physicians, coders, CDI specialists, and other important healthcare stakeholders, can facilities appropriately prepare themselves for the special concerns created by the implementation of ICD-10-CM, the coding of fractures being chief among them.

Sources

The website links listed below comprise the primary source material for this article and will prove useful for future reference and education.

Gustilo-Anderson Classification of Open Fractures

http://www.rcsed.ac.uk/fellows/lvanrensburg/classification/commonfiles/open.htm

http://www.wheelessonline.com/ortho/gustillo_classification_of_open_tibial_frxs

http://ourmedicalnotes.blogspot.com/2012/01/gustilo-anderson-classification.html

Types of Shaft Fractures

http://medical-dictionary.thefreedictionary.com/Fractures

http://orthoinfo.aaos.org/topic.cfm?topic=A00522

http://boneandspine.com/fractures-dislocations/a-comprehensive-review-of-fracture-terminology/

Salter Harris Classification for Growth Plate Fractures

http://medinfo.ufl.edu:8050/~radelect/presentations/msk/salter_harris_fracture_alex_duckworth.pdf

http://www1bpt.bridgeport.edu/~gwl/salter-harrisclassification.htm

http://emedicine.medscape.com/article/412956-overview

Neer Classification for Proximal Humerus Fractures

http://www.gentili.net/fracture.asp?ID=61

http://emedicine.medscape.com/article/825488-workup

http://www.rcsed.ac.uk/fellows/lvanrensburg/classification/humerus/proximal%20humerus/default.htm

Wedge-Compression and Burst Fractures of the Thoracolumbar Spine

http://www.spineuniverse.com/conditions/spinal-fractures/burst-fractures-defined-diagnosed

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Client Corner

Employee of the Quarter

Congratulations to Erin K. Draper, Data Integrity Specialist at CentraMed. Erin was selected as the Employee of the Quarter for January through March 2012. This honor was in recognition of Erin's outstanding contribution to the organization.

Erin assumed additional responsibilities in the Data Integrity Division as the workload increased and she continues to meet requests from internal and external customers with a helpful and cheerful attitude.

Please join us in recognizing Erin as a CentraMed star.

Employe of the Quarter Winter 2012
Erin K. Draper
Data Integrity Specialist

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http://www.spineuniverse.com/conditions/osteoporosis/compression-wedge-fractures

http://www.spineuniverse.com/conditions/spinal-fractures/types-spinal-fractures

http://emedicine.medscape.com/article/248236-overview#a0104

Fractures of the Sacrum

http://www.rcsed.ac.uk/fellows/Ivanrensburg/classification/pelvis/sacrum.htm

http://health-7.com/Skeletal%20Trauma/Chapter%2035%20-%20Fractures%20of%20the%20Sacrum

http://www.orthobullets.com/trauma/1032/sacral-fractures

http://www.scientificspine.com/spine-scores/denis-sacral-fracture-classification.html

Please Note

All CBR (Code-Based Reimbursement)/CCDR (Compliant Coding and Documentation Review) activity for the month must be entered into the CBR/CCDR Software applications, including DRG Catalyst, prior to the 10th of the following month.

Be sure to follow the steps below so that results from retrospective CBR/CCDR audits translate onto the Executive Summary:

Inpatient (DRG Catalyst)

- The rebill checkbox must be checked. (Please make sure that you send the checked accounts to PFS for rebilling!)

Outpatient (CBR Database)

- The completion date must be entered under the CBR/CCDR Utilities tab, and
- The rebill checkbox must be checked. (Please make sure that you send the rebill accounts to PFS for rebilling!)
- Before the database closes each month, we recommend that you complete the following checklist:
  - Confirm that all completed retrospective audits for the month have an end date entered into the CBR/CCDR database.
  - Check the rebill box in the CBR/CCDR database or DRG Catalyst for each retrospective claim that has been approved for rebilling.
  - Complete a Summary of Audit Findings form for any projects you closed this month and submit it to the coding Subject Matter Expert (SME).
  - Ensure that data is entered for all accounts audited for the current month.

Upcoming Webinars

Client RMD/RID Webinars

Jul 10: ICD-10 Forum

Potential Topics

Medicare Managed Care

Auditing ICU Accounts

How to Handle Adversity

Silent PPOs

How to Interact with Internal Customers

Write-Off Analysis

Software Reporting

Injections and Infusions

Introduction to Inpatient Audits

Inpatient Mechanical Ventilation

POA and HAC

Device Dependent APCs

Observation and One-Day Stays

Pain Management

Outpatient Orders

Spine Surgery

Chemotherapy

Pathology

Brachytherapy

Moderate Sedation

Radiology Imaging

Erythropoiesis Stimulating Agents

Discharge Dispositions

Emergency Department

Vascular Access Devices

Neurostimulators

GI Endoscopy

Tracking and Trending CCI Edits

Please watch for your e-mail invitation approximately three weeks prior to the scheduled event.

Thank You

If you have questions or would like to submit information for a future newsletter, please contact:
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