



BRIEF INTRODUCTION TO ICD-10-CM/PCS CODES

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INTRODUCTION

This document provides an overview of key differences between ICD-9-CM and ICD-10-CM/PCS.¹ It summarizes the differences in the coding structure of ICD-10-CM/PCS codes and presents examples to demonstrate the level of attention that researchers will need to apply when working with data involving both ICD-9-CM and ICD-10-CM/PCS codes. A more detailed comparison of the ICD-9-CM and ICD-10-CM-PCS coding systems is available in the Healthcare Cost and Utilization Project (HCUP) Methods Series Report #2016-02, [Impact of ICD 10-CM/PCS on Research Using Administrative Databases](#).

In October 2015, the United States transitioned to a modified version of the World Health Organization International Classification of Diseases, Tenth Revision (ICD-10-CM/PCS), replacing the ICD-9-CM diagnosis and procedure coding system with the ICD-10-CM diagnosis coding system for most inpatient and outpatient medical encounters and the ICD-10-PCS procedure coding system for inpatient hospital procedures.

DIAGNOSIS CODES

Comparison of the ICD-9-CM and ICD-10-CM Code Structure

Table 1 and Figure 1 compare the two diagnosis coding systems with respect to organization and structure, code composition, and level of detail of diagnosis codes. They are followed by examples illustrating some of these differences.

Table 1. Brief Comparison of ICD-9-CM and ICD-10-CM Diagnoses, October 1, 2015

ICD-9-CM	ICD-10-CM ^a
14,025 codes	68,069 codes
17 chapters in ICD-9-CM Code Book	21 chapters in ICD-10-CM Code Book New separate chapters for: <ul style="list-style-type: none">• Diseases of Eye and Adnexa• Diseases of Ear and Mastoid Process Incorporated into main chapters: <ul style="list-style-type: none">• External Causes of Morbidity• Factors Influencing Health Status and Contact with Health Services In addition, certain diseases have been reclassified to new chapters based on current medical knowledge
3–5 characters	3–7 characters
First character is numeric or alpha (V or E)	First character is alpha (every letter, except U)
Characters 2–5 are numeric	Character 2 is numeric Characters 3–7 can be alpha or numeric

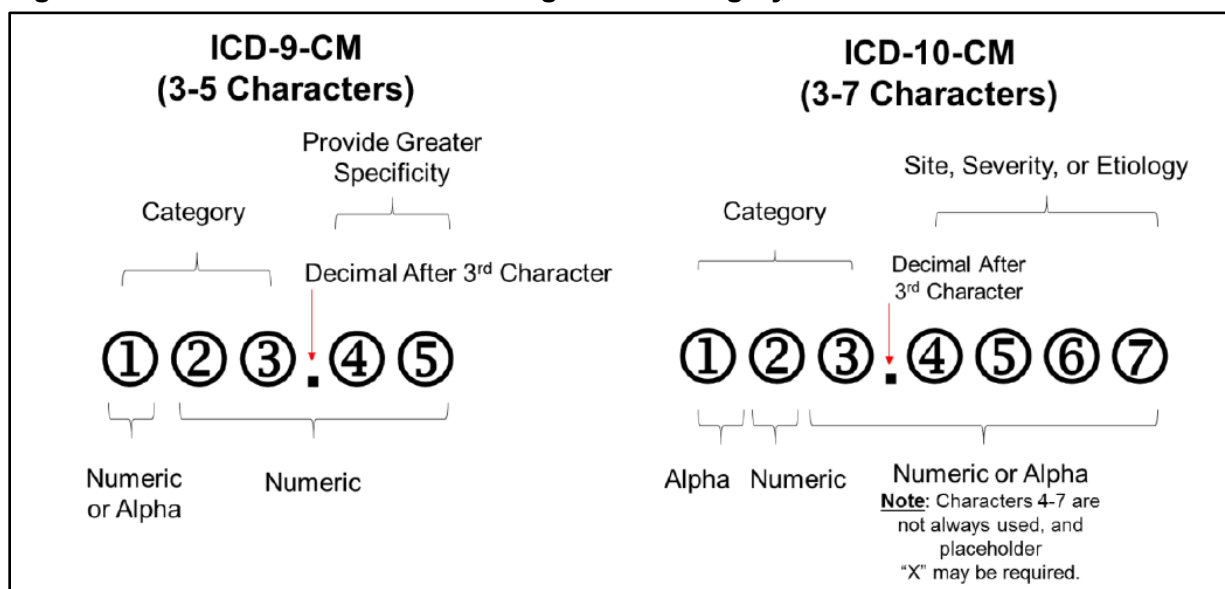
¹ ICD-9-CM: International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM/PCS: International Classification of Diseases, Tenth Revision, Clinical Modification/Procedure Coding System.

ICD-9-CM	ICD-10-CM ^a
Decimal after 3 characters (except E codes)	Decimal after 3 characters
No placeholder character	The placeholder “X” may be used when a code contains fewer than six characters and a seventh character applies
Limited use of combination codes	Include combination codes for conditions and common symptoms or manifestations; include combination codes for poisonings and external causes
Postoperative complications listed under Injury and Poisoning chapter	Postoperative complications moved to procedure-specific body system chapters
Lack of information on laterality	Designate the left or the right side of the body when describing the location of conditions and injuries
No encounter information	Character 7 identifies whether the encounter was the initial, subsequent, or sequela-related
Lack of information on timing	Inclusion of trimesters in obstetric codes and information on time frame specified in other certain codes
Injuries grouped by type	Injuries grouped by site of the body and then by type

Abbreviations: ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification.

^a Information about ICD-10-CM diagnosis codes was obtained from the American Health Information Management Association (Anne B. Casto, Consulting Editor). *ICD-10-CM Code Book, 2016*; Chicago, IL: 2016.

Figure 1. ICD-9-CM and ICD-10-CM Diagnosis Coding Systems



Abbreviations: ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification.

Source: Gibson T, Casto A, Young J, et al. Impact of ICD-10-CM/PCS on Research Using Administrative Databases. HCUP Methods Series Report #2016-02. Rockville, MD: Agency for Healthcare Research and Quality; 2016. <http://www.hcup-us.ahrq.gov/reports/methods/methods.jsp>

The first three characters of the ICD-10-CM diagnosis code define the following categories:²

- A00-B99: Certain infectious and parasitic diseases
- C00-D49: Neoplasms
- D50-D89: Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism
- E00-E89: Endocrine, nutritional, and metabolic diseases
- F01-F99: Mental, behavioral and neurodevelopmental disorders
- G00-G99: Diseases of the nervous system
- H00-H59: Diseases of the eye and adnexa
- H60-H95: Diseases of the ear and mastoid process
- I00-I99: Diseases of the circulatory system
- J00-J99: Diseases of the respiratory system
- K00-K95: Diseases of the digestive system
- L00-L99: Diseases of the skin and subcutaneous tissue
- M00-M99: Diseases of the musculoskeletal system and connective tissue
- N00-N99: Diseases of the genitourinary system
- O00-O9A: Pregnancy, childbirth, and the puerperium
- P00-P96: Certain conditions originating in the perinatal period
- Q00-Q99: Congenital malformations, deformations, and chromosomal abnormalities
- R00-R99: Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified
- S00-T88: Injury, poisoning and certain other consequences of external causes
- V00-Y99: External causes of morbidity
- Z00-Z99: Factors influencing health status and contact with health services.

The meaning of characters 4–7 of the ICD-10-CM diagnosis code depend on the category. The character “X” is used as a placeholder.

² Information about ICD-10-CM diagnosis codes categories was obtained from the American Health Information Management Association (Anne B. Casto, Consulting Editor). *ICD-10-CM Code Book, 2016*; Chicago, IL: 2016.

Example of One ICD-9-CM Code Mapping to Many Potential ICD-10-CM Codes

In some cases, there is one diagnosis code in ICD-9-CM that is very similar to one diagnosis code in ICD-10-CM. In other cases, there may be multiple ICD-10-CM codes with detailed specificity in the ICD-10-CM system compared with one diagnosis code in the ICD-9-CM system, as shown in Table 2. Phlebitis and thrombophlebitis of the iliac vein is an example illustrating that ICD-10-CM codes are more specific than ICD-9-CM codes, in this case with respect to laterality. In such cases, multiple ICD-10-CM codes map to one ICD-9-CM code.

Table 2. Coding of Phlebitis and Thrombophlebitis of the Iliac Vein in the ICD-9-CM and ICD-10-CM Coding Systems

ICD-9-CM Code	Description	ICD-10-CM Code	Description
451.81	Phlebitis and thrombophlebitis of the iliac vein	180.211	Phlebitis and thrombophlebitis, <u>right</u> iliac vein
		180.212	Phlebitis and thrombophlebitis, <u>left</u> iliac vein
		180.213	Phlebitis and thrombophlebitis <u>bilateral</u> iliac veins
		180.219	Phlebitis and thrombophlebitis <u>unspecified</u> iliac veins

Abbreviations: ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification.

Example of ICD-10-CM Combination Codes

In other instances, because of combination codes, one ICD-10-CM code may map to multiple ICD-9-CM codes, such as for severe sepsis and septic shock as shown in Table 3.

Table 3. Coding of Severe Sepsis and Septic Shock in the ICD-9-CM and ICD-10-CM Coding Systems

ICD-9-CM Code	Description	ICD-10-CM Code	Description
995.92	Severe sepsis	R65.21	Severe sepsis with septic shock
785.52	Septic shock		

Abbreviations: ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification.

Example of Multiple ICD-10-CM Diagnosis Codes Required to Translate a Single ICD-9-CM Code

In some instances, more ICD-10-CM codes are required for reporting conditions and complications, as shown in Table 4. Reporting skull fractures with hemorrhage and loss of consciousness requires two codes in ICD-10-CM, whereas only one code was required in ICD-9-CM. Therefore, conditional logic is required to find patients with fracture with loss of consciousness using ICD-10-CM data. However, it is important to note that ICD-10-CM provides separate codes for a traumatic subdural hemorrhage (subcategory S06.5) versus a traumatic subarachnoid hemorrhage (subcategory S06.6). This increased level of detail that specifies the type of hemorrhage could enhance outcome studies involving patients with skull fractures.

Table 4. More Diagnosis Codes Required in ICD-10-CM—Intracranial Injuries and Skull Fractures

ICD-9-CM Code	Description	ICD-10-CM Code	Description
801.21	Fracture of base of skull closed, with subarachnoid, subdural, and extradural hemorrhage, with no loss of consciousness	S02.19XA	Other fracture of base of skull, initial encounter for closed fracture, AND
		S06.5X0A	Traumatic subdural hemorrhage without loss of consciousness, initial encounter, OR
		S06.6X0A	Traumatic subarachnoid hemorrhage without loss of consciousness, initial encounter

Abbreviations: ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification.

PROCEDURE CODES

Comparison of the ICD-9-CM and ICD-10-PCS Code Structure

Table 5 and Figure 2 compare the two procedure coding systems with respect to organization and structure, code composition, and level of detail of procedure codes. They are followed by examples illustrating some of these differences.

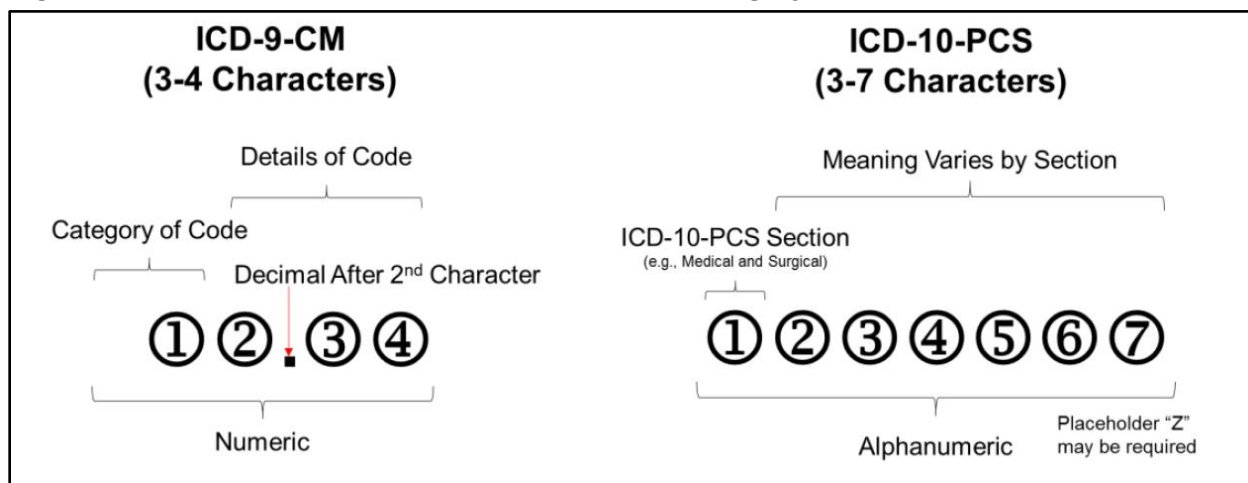
Table 5. Brief Comparison of ICD-9-CM and ICD-10-PCS Procedures, October 1, 2015

ICD-9-CM	ICD-10-PCS ^a
3,824 codes	72,589 codes
Chapters organized by body system	Multiaxial structure to chapters
3–4 characters	7 characters must be used
All characters are numeric	Each character can be alpha (A–H, J–N, P–Z) or numeric (0–9)
Decimals after 2 characters	No decimal
No placeholder character	The placeholder “Z” is used when a code contains fewer than 6 characters
Include combination codes in which procedures typically performed together are combined into one procedure code	Do not include combination codes; may require multiple codes to capture what a surgeon considers a single procedure
Lack information on laterality	Designate the left or the right side of the body when describing the location of procedures
Lacks descriptions of methodology and approach	Provides detailed descriptions of methodology and approach
Generic terms for body parts	Specific terms for body parts
Generic terms for device used	Specific terms for device used
May contain diagnostic information (i.e., diagnoses and procedures may be linked)	Do not contain diagnostic information (i.e., diagnoses and procedures are not linked)
Contains code options for “not otherwise specified” and “not elsewhere classified”	No explicit “not otherwise specified” codes and limited use of “not elsewhere classified”
Limited space for adding new codes	Flexible for adding new codes

Abbreviations: ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-PCS, International Classification of Diseases, Tenth Revision, Procedure Coding System.

^a Information about ICD-10-PCS procedure codes was obtained from the American Health Information Management Association (Anne B. Casto, Consulting Editor). *ICD-10-PCS Code Book, 2016*; Chicago, IL: 2016.

Figure 2. ICD-9-CM and ICD-10-PCS Procedure Coding Systems



Abbreviations: ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-PCS, International Classification of Diseases, Tenth Revision, Procedure Coding System.

Source: Gibson T, Casto A, Young J, et al. Impact of ICD-10-CM/PCS on Research Using Administrative Databases. HCUP Methods Series Report #2016-02. Rockville, MD: Agency for Healthcare Research and Quality; 2016. <http://www.hcup-us.ahrq.gov/reports/methods/methods.jsp>

The different characters of the ICD-10-PCS codes have specific meanings:³

- First character identifies the section
 - Values include (0) Medical and Surgical, (1) Obstetrics, (2) Placement, (3) Administration, (4) Measurement and Monitoring, (5) Extracorporeal Assistance and Performance, (6) Extracorporeal Therapies, (7) Osteopathic, (8) Other Procedure, (9) Chiropractic, (B) Imaging, (C) Nuclear Medicine, (D) Radiation Therapy, (F) Physical Rehabilitation and Diagnostic Audiology, (G) Mental Health, (H) Substance Abuse Treatment, (X) and New Technology
- Second character identifies the body system
 - Values include (0) Central Nervous System, (1) Peripheral Nervous System, (2) Heart and Great Vessels, (3) Upper Arteries, (4) Lower Arteries, (5) Upper Veins, (6) Lower Veins, (7) Lymphatic & Hemic Systems, (8) Eye, (9) Ear/Nose/Sinus, (B) Respiratory System, (C) Mouth & Throat, (D) Gastrointestinal System, (F) Hepatobiliary System & Pancreas, (G) Endocrine System, (H) Skin & Breast, (J) Subcutaneous Tissue & Fascia, (K) Muscles, (L) Tendons, (M) Bursae & Ligaments, (N) Head & Facial Bones, (P) Upper Bones, (Q) Lower Bones, (R) Upper Joints, (S) Lower Joints, (T) Urinary System, (U) Female Reproductive System, (V) Male Reproductive System, (W) Anatomical Regions/ General, (X)

³ Information about ICD-10-PCS characters was obtained from the American Health Information Management Association (Anne B. Casto, Consulting Editor). *ICD-10-PCS Code Book, 2016*; Chicago, IL: 2016.

Anatomical Regions / Upper Extremities, and (Y) Anatomical Regions / Lower Extremities

- Third character identifies the root operation
 - Values include (0) Alteration, (1) Bypass, (2) Change, (3) Control, (4) Creation, (5) Destruction, (6) Detachment, (7) Dilation, (8) Division, (9) Drainage, (B) Excision, (C) Extirpation, (D) Extraction, (F) Fragmentation, (G) Fusion, (H) Insertion, (J) Inspection, (K) Map, (L) Occlusion, (M) Reattachment, (N) Release, (P) Removal, (Q) Repair, (R) Replacement, (S) Reposition, (T) Resection, (U) Supplement, (V) Restriction, (W) Revision, (X) Transfer, and (Y) Transplantation
- Fourth character identifies the body part with values that are specific to the root operation
- Fifth character identifies the approach
 - Values include (0) Open, (3) Percutaneous, (4) Percutaneous Endoscopic, (7) Via Natural or Artificial Opening, (8) Via Natural or Artificial Opening Endoscopic, (F) Via Natural or Artificial Opening Percutaneous Endoscopic, and (X) External
- Sixth character identifies the device which includes only devices that remain after the procedure is completed such as electronic appliances, grafts, prostheses, implants, and simple or mechanical appliances
- Seventh character includes a qualifier with values that are specific to the root operation

The character “Z” is used as a placeholder.

Example of One ICD-9-PCS Code Mapping to Many Potential ICD-10-CM Codes

Table 6 shows an example of how the ICD-10-PCS system provides more specific information on the body part, including laterality, approach, and device involved in a procedure, compared with the ICD-9-CM system.

Table 6. Coding of Angioplasty in the ICD-9-CM and ICD-10-CM Coding Systems

ICD-9-CM Code	Description	ICD-10-PCS Code	Description
39.50	Angioplasty	047K04Z	Dilation of right femoral artery with drug-eluting intraluminal device, open approach
		047K0DZ	Dilation of right femoral artery with intraluminal device, open approach
		047K0ZZ	Dilation of right femoral artery, open approach
		047K34Z	Dilation of right femoral artery with drug-eluting intraluminal device, percutaneous approach
		047K3DZ	Dilation of right femoral artery with intraluminal device, percutaneous approach

Abbreviations: ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-PCS, International Classification of Diseases, Tenth Revision, Procedure Coding System.

Examples of Situations in Which a Single ICD-10-PCS Code Describes a Procedure That Requires ICD-9-CM Cluster Coding⁴

Although not as common, in some instances the use of 7-digit ICD-10-PCS codes can reduce the number of procedure codes required. As shown in Table 7, some procedures that required multiple ICD-9-CM codes require only one ICD-10-PCS code.

Table 7. Coding of Percutaneous Transluminal Coronary Angioplasty in the ICD-9-CM and ICD-10-CM Coding Systems

ICD-9-CM Code	Description	ICD-10-PCS Code ^a	Description
00.66	Percutaneous transluminal coronary angioplasty	02713ZZ	Dilation of coronary artery, two arteries percutaneous approach. Additional options are available for body part (4 th character): one coronary artery, two coronary arteries, three coronary arteries, and four or more coronary arteries)
00.40–00.43	Used to identify the number of vessels treated		

Abbreviations: ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-PCS, International Classification of Diseases, Tenth Revision, Procedure Coding System.

^a Users should consult Table 027 in the PCS code book to fully construct the appropriate code. Code 02713ZZ is an example of one of the many codes that will map backwards to the ICD-9-CM codes in this table.

⁴ Coders use the term *cluster coding* to indicate that multiple codes are required.

Example of ICD-10-PCS Codes Without Diagnostic Information That Was Contained in ICD-9-CM Codes

In other cases, because there is no diagnostic information on an ICD-10-PCS code, there may not be an equivalent code or group of codes that fully map from ICD-9-CM to ICD-10-PCS. For instance, the Clinical Classifications Software (CCS) category 57, *Creation; revision and removal of arteriovenous fistula or vessel-to-vessel cannula for dialysis*, contains four ICD-9-CM procedure codes specific to renal dialysis (Table 8). Because the related ICD-10-PCS codes do not contain diagnostic information, they map to different CCS categories. Under ICD-10-PCS, no codes fall under CCS 57 because these procedures could be performed for reasons other than dialysis.

Table 8. Population of CCS Categories Related to the *Creation; Revision and Removal of Arteriovenous Fistula or Vessel-to-Vessel Cannula for Dialysis*

ICD-9-CM	Description	ICD-10-PCS ^a	Description
39.27	Arteriovenostomy for renal dialysis	03130ZD	Bypass right subclavian artery to upper arm vein, open approach
39.42	Revision of arteriovenous shunt for renal dialysis	031209D	Bypass innominate artery to upper arm vein with autologous venous tissue, open approach
39.43	Removal of arteriovenous shunt for renal dialysis	03PY07Z	Removal of autologous tissue substitute from upper artery, open approach
39.93	Insertion of vessel-to-vessel cannula	03130JD	Bypass right subclavian artery to upper arm vein with synthetic substitute, open approach
Corresponding CCS Categories and Descriptions			
57	Creation; revision and removal of arteriovenous fistula or vessel-to-vessel cannula for dialysis	55 for codes that begin with 031	Peripheral vascular bypass
		61 for codes that begin with 03P	Other OR procedures on vessels other than head or neck

Abbreviations: CCS, Clinical Classification Software; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-PCS, International Classification of Diseases, Tenth Revision, Procedure Coding System; OR, operating room.

^a Users should consult Table 031 or Table 03P in the PCS code book to fully construct the appropriate code. The specific codes in each row are examples of one of the many codes that will map backwards to the ICD-9-CM code in the row.

Information on other CCS categories that do not contain any ICD-10-PCS codes can be found in Appendix A of HCUP Methods Series Report #2016-02, [Impact of ICD 10-CM/PCS on Research Using Administrative Databases](#).

Example of the Difference in ICD-10-PCS Body Part Chapter Assignment

Construction of the body part chapters for ICD-10-PCS procedure codes is different from their construction in ICD-9-CM. As shown in Table 9, procedures performed on the head and neck

bones have been moved from Chapter 1, *Operations on the Nervous System*, to the *Medical and Surgical* section of *Head and Facial Bones* (first two code characters 0N). The CCS assignment also will change in ICD-10-PCS. CCS volumes are expected to change for the nervous system and musculoskeletal system because of this reclassification in ICD-10-CM/PCS.

Table 9. Reclassification of Procedure Codes—Craniectomy

Source	ICD-9-CM	Description	ICD-10-PCS	Description
ICD Codes	01.25	Other craniectomy	0NT80ZZ	Resection of left occipital bone, open approach
Corresponding ICD Chapter	1	Operations on the nervous system	First two code characters 0N	<i>Medical and Surgical</i> section of <i>Head and Facial Bones</i>
Corresponding CCS Category	1	Incision and excision of CNS	161	Other OR therapeutic procedure on bone

Abbreviations: CCS, Clinical Classifications Software; CNS, central nervous system; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-PCS, International Classification of Diseases, Tenth Revision, Procedure Coding System; OR, operating room.