ICD-10
What Every Healthcare Professional Should Know

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About the Author

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McCall has extensive experience coding both physician and hospital services. Before joining HCPro, she worked at a national medical practice management company, where her responsibilities included serving as a client manager and instructor for in-house coding training. She also previously worked at a national consulting firm that focuses on hospital inpatient, outpatient, and emergency department services.

A graduate of the Medical University of South Carolina, McCall has a BS in health information administration. She served as the 2008-2009 elected director of the Virginia Health Information Management Association.
Effective October 1, 2013, ICD-10 (International Classification of Diseases, 10th Edition) will replace ICD-9 (International Classification of Diseases, 9th Edition) in the United States. This book provides an overview of the new system that health information management (HIM) managers and directors and clinical documentation specialists can share with staff and task force members. It explains how the two systems differ and how providers can prepare for the unavoidable transition. Third-party payers, physician practices, and hospital clinical data improvement programs also will benefit by reading it.


ICD-10-CM will replace ICD-9-CM diagnosis codes (Volumes 1–2) in inpatient, outpatient, and professional services settings. ICD-10-PCS will replace ICD-9-CM procedure codes (Volume 3) used primarily for inpatient facility services. Healthcare Common Procedure Coding System (HCPCS), including Current Procedural Terminology (CPT)
and HCPCS Level II (HCPCS-II), will remain in use for procedure coding in outpatient and physician settings.

This book:

- Provides a historical perspective of ICD-9 and ICD-10
- Discusses ICD-10-CM and ICD-10-PCS improvements
- Explains the structure of ICD-9-CM, ICD-10-CM, and ICD-10-PCS
- Discusses timelines for ICD-10
- Reviews costs of implementing ICD-10
- Explains benefits of ICD-10

The intended audience includes coders, HIM managers, clinical documentation specialists, compliance officers, and HIM records directors who work for hospitals, physician practices, and insurance carriers.

The ICD-9 system has been in use in the United States for more than 30 years—since 1979. The original intent was to update it every 10 years. However, these updates never occurred and a major revision is long overdue. ICD-9-CM is based on the World Health Organization’s (WHO) ICD-9 system. In the United States, the National Center for Health Statistics (NCHS) and the Centers for Medicare & Medicaid Services (CMS) maintain the ICD-9-CM codes.
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The four Cooperating Parties that constitute the ICD-9-CM Coordination and Maintenance Committee and are responsible for revising and adding new codes are the American Hospital Association (AHA), American Health Information Management Association (AHIMA), CMS, and NCHS.

The U.S. Department of Health and Human Services announced January 15, 2009, the final regulation to replace the ICD-9-CM code sets used to report diagnoses and inpatient procedures with the more advanced ICD-10 code set currently used in other nations. The final regulation will implement the ICD-10 code set October 1, 2013.

Access the following websites for information to use in conjunction with this book:

- [http://apps.who.int/classifications/apps/icd/icd10online](http://apps.who.int/classifications/apps/icd/icd10online) for a breakdown of hyperlinked ICD-10-CM categories and subcategories.

- [www.cms.gov/ICD10](http://www.cms.gov/ICD10) for the complete ICD-10-CM and ICD-10-PCS files including alphabetic and tabular lists and official coding guidelines.


Structure of ICD-9-CM

ICD-9-CM was adopted as a Health Information Portability and Accountability Act (HIPAA) standard in 2000. Its diagnosis codes in Volumes 1 and 2 are used for all types of services—inpatient, outpatient, and professional. Use of procedure codes in Volume 3 generally is limited to inpatient facility services.

ICD-9-CM diagnosis codes (Volumes 1 and 2) currently have a three- to five-digit numeric and alphanumeric structure. The codes are organized into chapters mostly by body system. Some sections are organized by disease process or other classification. Examples include Infectious and Parasitic Diseases, Chapter 1 (001–139), and Symptoms, Signs, and Ill-Defined Conditions, Chapter 16 (780–799).

ICD-9-CM procedure codes (Volume 3) currently have a three- to four-digit numeric structure. The codes are organized into chapters mostly by body system. Some sections are organized by other classification. One example is Procedures and Interventions, Not Elsewhere Classified (00.xx).
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CPT and HCPCS Level II codes are used for all other procedures (professional and outpatient services).

For FY 2010, ICD-9-CM consists of 18,153 codes, including:

- 14,315 ICD-9-CM diagnosis codes
- 3,838 ICD-9-CM procedure codes

The final inpatient prospective payment system (IPPS) is released during mid-August and includes all approved revisions and additions. Codes are officially implemented October 1.

Limitations of ICD-9-CM

Four factors contribute directly to ICD-9-CM’s limitations:

- Room for expansion
  - Many sections are full, so additions must be placed in other sections of the book.
  - Although the AHA predicted that the book would completely run out of space in 2009, this did not happen. Space for updates from now until the implementation date of October 1, 2013, remains a major concern.

- Structural hierarchy
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- Placing codes in other sections disrupts the intended hierarchy and makes finding these codes more difficult

- Statisticians may miss illogically placed code series (e.g., 00.7x hip replacement revisions and 81.xx hip replacements)

• Lack of detail

- The ability to capture new and emerging technologies is impaired or inhibited

- Electronic health records (EHR) and personal health records (PHR) require expandable codes

- Codes that aren’t very specific affect quality of care, cost containment, studies of specific conditions and treatment methods, and pay for performance (P4P)

- Some ICD-9-CM procedure codes are for out-dated technology

- Accurate, specific reporting of diagnoses can be difficult (e.g., assigning the same ICD-9-CM code for a patient’s two successive closed wrist fractures, 814.00, makes it impossible to determine whether there was a repeat fracture of one wrist or a new fracture of the other wrist)
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- Accurate, specific reporting of procedures can be difficult (e.g., reporting 39.72 for a patient who undergoes endovascular surgery for occlusion in the head/neck doesn't indicate whether the vessel was carotid or cerebral or the nature of the repair, specifically percutaneous or intraluminal catheter.)

- Mortality reporting
  - ICD-9-CM is no longer supported by the WHO.
  - More than 200 countries have adopted ICD-10 or some portion of it.
  - The United States is the only G7 nation still using ICD-9-CM. (The other G7 nations are Canada, France, Germany, Great Britain, Italy, and France.)
  - ICD-9-CM’s lack of specificity makes it unable to identify emerging diseases whose effect is international.
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Why Change Is Necessary

Codes should specifically indicate how, why, and where a patient was seen for healthcare. The current ICD-9-CM system allows limited capture of this information, but more specificity is imperative to capture specificity in relation to diagnoses and also to measure outcomes for procedures used to treat such conditions. ICD-10-CM and ICD-10-PCS will allow increased specificity and room for expansion, key factors that impede ICD-9-CM’s ability to remain a viable system. The United States also needs to be able to exchange clinical data with other nations. Most, including Canada, already use ICD-10.

Historical Perspective of ICD-10-CM and ICD-10-PCS

The WHO developed ICD-10 in 1989. ICD-10-CM diagnosis codes are used for all types of services—inpatient, outpatient, and professional. ICD-10-PCS will replace ICD-9-CM procedure codes and will be used for inpatient facility services.

The NCHS is the federal agency responsible for use of ICD-10 in the United States. It began studying ICD-10 in 1997.
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The entire draft of the Tabular List of ICD-10-CM and the preliminary crosswalk between ICD-9-CM and ICD-10-CM were available on the NCHS website for public comment from December 1997 through November 1998. The AHA and AHIMA conducted an ICD-10-CM field test during the summer of 2003. Modifications to ICD-10-CM reflect these comments and review of the field test results.

New concepts have been added to ICD-10-CM based on the established update process for ICD-9-CM and ICD-10. The clinical modification represents significant improvement over ICD-9-CM and ICD-10. Specific improvements include:

- The addition of information relevant to ambulatory and managed care encounters
- Expanded injury codes
- The creation of combination diagnostic/symptom codes to reduce the number of codes necessary to fully describe a condition
- The addition of sixth and seventh characters
- The incorporation of common fourth- and fifth-digit subclassifications
- Identification of laterality
- Greater specificity in code assignment
- Further expansion than was possible with ICD-9-CM
Anticipated Benefits of ICD-10-CM and ICD-10-PCS

Anticipated benefits of ICD-10-CM and ICD-10-PCS include:

- More accurate payments for new procedures
- Fewer rejected claims
- Fewer improper claims
- A better understanding of new procedures
- Improved disease management
- A better understanding of health outcomes
- Standardization of disease monitoring and reporting internationally
- More accurate payments for new procedures
- Fewer miscoded, rejected, and improper reimbursement claims
- A better understanding of the value of new procedures
- Improved disease management
- A better understanding of healthcare outcomes
2010 Update of ICD-10-CM and ICD-10-PCS

The 2010 update of ICD-10-CM is available at www.cdc.gov/nchs/icd/icd10cm.htm#10update. It includes links to new files for the Preface, ICD-10-CM Official Guidelines for Coding and Reporting, Index to Diseases and Injury, the Tabular List, Index to External Causes of Injury, Table of Drugs and Chemicals, Table of Neoplasms, and General Equivalence Mapping files. The NCHS created these files under the WHO’s authorization. Despite their availability for public viewing, the codes on this website are informational only and not currently valid for any purpose. Further updates are anticipated prior to ICD-10-CM’s implementation October 1, 2013.

The ICD-10-CM Official Guidelines for Coding and Reporting assist coders in correct application and sequencing of the ICD-10-CM diagnosis codes. Some highlighted changes include:

- Two types of “Excludes” notes
  - Excludes1 = “true” excludes note, which means “do not code from this series.” This instructional note signifies mutually exclusive codes; two conditions that cannot be reported together.
  - Excludes2 = “redirect” excludes note, which means “not included here” but may be reported from another series. This instructional note signifies that the condition is not part of the condition it is being excluded from, meaning the patient may have both conditions at the same time.
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- Some sections may have changed chapters
  - Endocrine and metabolic disorders are in Chapter 3 in ICD-9-CM but are in Chapter 4 in ICD-10-CM
- Urosepsis is now considered a nonspecific term and must be clarified by the provider for code assignment
- Laterality guidance refers to descriptors denoting right and left on applicable codes for additional specificity regarding laterality


ICD-10-CM Structure

ICD-10-CM consists of two volumes, a tabular list and an alphabetic list, which organize the information in two distinctly different ways. Its format mimics that of ICD-9-CM. The tabular index is divided into 21 chapters and uses anatomy as its primary axis for classification. Some chapters are based on etiology or other criteria that illustrate the disease process; regardless, each chapter is divided into identifiable sections. The tabular index includes instructional notes and conventions by which coders should abide. The alphabetic index consists of three sections. Section 1 is an index of terms classifiable to Chapters
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1–19 and 21 (excluding drugs and chemicals), including the table of neoplasms. Section 2 is an index of the table of drugs and chemicals used to code poisoning and the adverse effect of drugs classifiable to Chapters 19 and 20. Section 3 contains the terms related to the external causes of morbidity and terms classifiable to Chapter 20.

ICD-10-CM codes consist of an alphanumeric formula containing a minimum of three characters and a maximum of seven characters.

**The first three characters**
The first three characters—generally a letter plus two numbers—refer to a specific type of disease or general category. For example, A00–B99 refers to infectious and parasitic diseases. H00–H59 refers to diseases of the eye and adnexa, and H60–H95 refers to diseases of the ear and mastoid process. O00–O9A refers to pregnancy, childbirth, and puerperium.

Within these ranges, there is additional categorical breakdown. For example, N00–N99, which refers to diseases of the genitourinary system, include the following more specific subdivisions:

- N00–N08—Glomerular diseases
- N10–N16—Renal tubulo-interstitial diseases
- N17–N19—Acute renal failure and chronic kidney disease
- N20–N23—Urolithiasis
- N25–N29—Other disorders of kidney and ureter
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- N30–N39—Other diseases of the urinary system
- N40–N51—Diseases of the male genital organs
- N60–N64—Disorders of breast (oddly not in Chapter 12, Diseases of the Skin and Subcutaneous Tissues)
- N70–N77—Inflammatory diseases of the female pelvic organs
- N80–N98—Noninflammatory disorders of the female genital tract
- N99—Intraoperative and postprocedural complications and disorders of genitourinary system, not elsewhere classified

The remaining characters:

Extensions and placeholders

The fourth, fifth, and sixth digits provide more specificity; a decimal point separates them from the first three digits. Extensions sometimes are used in the final (seventh) digit of the code to provide additional information. Extensions occur most often in Chapter 19 (Injuries and Poisonings). With respect to fractures, for example, an “A” as a seventh digit indicates “initial” encounter for closed fracture” (e.g., initial encounter for Colles’ fracture right radius, S52.531A). A “D” indicates “subsequent” encounter for closed fracture.” When a code category requires a sixth or a seventh digit, but there is no applicable fifth digit, an “x” is used as a placeholder (e.g., T36.0x1A denotes accidental [unintentional] poisoning by penicillins, initial encounter).
**Laterality**

For bilateral sites, the final character of ICD-10-CM codes indicates laterality. An unspecified side code is provided if the side is not identified in the medical record. If no bilateral code is provided and the condition is bilateral, assign separate codes for both left and right sides.

The following two codes provide an example of laterality:

- S52.244A—Closed nondisplaced spiral fracture of shaft of ulna, right arm, initial encounter
- S52.245A—Closed nondisplaced spiral fracture of shaft of ulna, left arm, initial encounter

**Details improve data quality**

ICD-10-CM will improve data quality by providing additional details:

- Expansion of injury codes, which are grouped according to injury site rather than injury type (e.g., S40–49, injuries to shoulder and upper arm, and S70–79, injuries to hip and thigh, which include subcategories for open wounds, fractures, etc.)
- Combination of diagnosis and symptom codes
- Ability to identify laterality (e.g., right or left)
- Addition of obstetric codes that can identify trimester
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- Addition of more diabetes categories that contain codes for specific types of diabetes types (e.g., due to underlying conditions, drug or chemically induced diabetes)
- Expansion of postoperative complications and their strategic placement within individual chapters
- Expansion from 855 to 2,033 code categories

ICD-10-PCS Structure

ICD-10-PCS codes consist of a seven-digit alphanumeric formula. Each character has up to 34 possible values. The digits 0–9 and the letters A–H, J–N, and P–Z may be assigned to each character. The letters O and I are not used to avoid confusion with the numeric digits 0 and 1. The term “procedure” is used to refer to the complete specification of the seven characters.

The first character in the seven-digit code represents a section; there are 16 from which to choose:

- 0—Medical and Surgical
- 1—Obstetrics
- 2—Placement
- 3—Administration
- 4—Measurement and Monitoring
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- 5—Extracorporeal Assistance and Performance
- 6—Extracorporeal Therapies
- 7—Osteopathic
- 8—Other Procedures
- 9—Chiropractic
- B—Imaging
- C—Nuclear Medicine
- D—Radiation Oncology
- F—Physical Rehabilitation and Diagnostic Audiology
- G—Mental Health
- H—Substance Abuse Treatment

Characters 2–7 have a standard meaning within each section but may differ in meaning across each of the 16 sections. The order and type of characters 2–7 are dependent on the section chosen for character 1.

In Section 0 (medical and surgical), the seven-digit code consists of section, body system, root operation, body part/region, approach, device, and qualifier. In Section B (imaging procedures), the seven-digit code consists of section, body system, type, body part,
contrast, qualifier (e.g., unenhanced or enhanced), and qualifier (e.g., interoperative, densitometry).

The main objectives of the ICD-10-PCS system are improving accuracy and efficiency of coding, reducing training efforts, and improving communication with physicians. Coding will improve because more detail can be provided with each digit. The predictability of code formulas should enable even those who are not coders or clinicians to decipher codes and arrive at plausible descriptions of procedures.

ICD-10-PCS offers several benefits, including:

- Potential for a unique code for each procedure

- Potential for incorporation of new procedures into the system, each with its own unique code

- Standardization of terminology so a specific meaning is assigned to each term

- Implementation of a system wherein each code character has the same meaning within the specific procedure section

Like ICD-10-CM, ICD-10-PCS is organized in two ways, the alphabetic and the PCS tables. The index provides a specification of the first three or four digits of the code only. The primary entry in the index is generally a root operation or a composite term of the root
operation. The secondary entries are specific to that root operation and indicate body system, body part, or operation.

The manual allows for alphabetic search. The PCS tables are formatted as a grid with rows and columns that can be used to obtain the complete code (rather than just the first three or four characters). The columns in the grid specify the last four characters of the procedure, and the rows specify the allowable combinations of the last four characters. The use of both the alphabetic list and the PCS tables is mandatory to assign a complete code because the alpha only provides the first three to four characters. However, a valid code may be chosen directly from the tables.

**Root operations: Medical and surgical**

Within the medical and surgical section, character 3 will represent the root operation or underlying objective of the procedure. The root operation and approach are consistent through all body systems. ICD-10-PCS establishes a definition of all possible distinct objectives of a procedure. Each distinct objective is assigned a single descriptive term. The medical and surgical section includes 31 root operations from which to choose.

Figure 1 provides an example of root operation definitions.
## Figure 1: Root Operation Definitions

### Section 0 - Medical and Surgical

#### Character 3 - Operation

<table>
<thead>
<tr>
<th>Operation</th>
<th>Definition</th>
<th>Explanation</th>
<th>Includes/Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alteration</td>
<td>Modifying the anatomic structure of a body part without affecting the function of the body part</td>
<td>Principal purpose is to improve appearance</td>
<td>Face lift, breast augmentation</td>
</tr>
<tr>
<td>Bypass</td>
<td>Altering the route of passage of the contents of a tubular body part</td>
<td>Rerouting contents of a body part to a downstream area of the normal route, to a similar route and body part, or to an abnormal route and dissimilar body part. Includes one or more anastomoses, with or without the use of a device</td>
<td>Coronary artery bypass, colostomy formation</td>
</tr>
<tr>
<td>Change device in</td>
<td>Taking out or off a device from a body part and putting back an identical or similar device in or on the same body part without cutting or puncturing the skin or a mucous membrane</td>
<td>All CHANGE procedures are coded using the approach EXTERNAL</td>
<td>Urinary catheter change, gastrostomy tube change</td>
</tr>
<tr>
<td>Control postprocedural bleeding in</td>
<td>Stopping, or attempting to stop, postprocedural bleeding</td>
<td>The site of the bleeding is coded as an anatomical region and not to a specific body part</td>
<td>Control of post-prostatectomy hemorrhage, control of post-tonsillectomy hemorrhage</td>
</tr>
</tbody>
</table>
## Figure 1: Root Operation Definitions (cont.)

### Section 0 - Medical and Surgical  
**Character 3 - Operation (continued)**

<table>
<thead>
<tr>
<th>Operation</th>
<th>Definition</th>
<th>Explanation</th>
<th>Includes/Examples</th>
</tr>
</thead>
</table>
| Creation   | Making a new genital structure that does not take over the function of a body part  
**Explanation:** Used only for sex change operations  
**Includes/Examples:** Creation of vagina in a male, creation of penis in a female |
| Destruction| Physical eradication of all or a portion of a body part by the direct use of energy, force, or a destructive agent  
**Explanation:** None of the body part is physically taken out  
**Includes/Examples:** Fulguration of rectal polyp, cautery of skin lesion |
| Detachment | Cutting off all or a portion of the upper or lower extremities  
**Explanation:** The body part value is the site of the detachment, with a qualifier if applicable to further specify the level where the extremity was detached  
**Includes/Examples:** Below knee amputation, disarticulation of shoulder |
| Dilation   | Expanding an orifice or the lumen of a tubular body part  
**Explanation:** The orifice can be a natural orifice or an artificially created orifice. Accomplished by stretching a tubular body part using intraluminal pressure or by cutting part of the orifice or wall of the tubular body part  
**Includes/Examples:** Percutaneous transluminal angioplasty, pyloromyotomy |
**Figure 1: Root Operation Definitions (cont.)**

**Section 0 - Medical and Surgical**  
**Character 3 - Operation (continued)**

| Division | Definition: Cutting into a body part, without draining fluids and/or gases from the body part, in order to separate or transect a body part  
**Explanation:** All or a portion of the body part is separated into two or more portions  
**Includes/Examples:** Spinal cordotomy, osteotomy |
| --- | --- |
| Drainage | Definition: Taking or letting out fluids and/or gases from a body part  
**Explanation:** The qualifier DIAGNOSTIC is used to identify drainage procedures that are biopsies  
**Includes/Examples:** Thoracentesis, incision and drainage |
| Excision | Definition: Cutting out or off, without replacement, a portion of a body part  
**Explanation:** The qualifier DIAGNOSTIC is used to identify excision procedures that are biopsies  
**Includes/Examples:** Partial nephrectomy, liver biopsy |
| Extirpation | Definition: Taking or cutting out solid matter from a body part  
**Explanation:** The solid matter may be an abnormal byproduct of a biological function or a foreign body; it may be imbedded in a body part or in the lumen of a tubular body part. The solid matter may or may not have been previously broken into pieces  
**Includes/Examples:** Thrombectomy, choledocholithotomy |
| Extraction | Definition: Pulling or stripping out or off all or a portion of a body part by the use of force  
**Explanation:** The qualifier DIAGNOSTIC is used to identify extraction procedures that are biopsies  
**Includes/Examples:** Dilation and curettage, vein stripping |
### Figure 1: Root Operation Definitions (cont.)

**Section 0 - Medical and Surgical**  
**Character 3 - Operation (continued)**

<table>
<thead>
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<th>Explanation</th>
<th>Includes/Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fragmentation</strong></td>
<td>Breaking solid matter in a body part into pieces</td>
<td>Physical force (e.g., manual, ultrasonic) applied directly or indirectly is used to break the solid matter into pieces. The solid matter may be an abnormal byproduct of a biological function or a foreign body. The pieces of solid matter are not taken out</td>
<td>Extracorporeal shockwave lithotripsy, transurethral lithotripsy</td>
</tr>
<tr>
<td><strong>Fusion</strong></td>
<td>Joining together portions of an articular body part rendering the articular body part immobile</td>
<td>The body part is joined together by fixation device, bone graft, or other means</td>
<td>Spinal fusion, ankle arthrodesis</td>
</tr>
<tr>
<td><strong>Insertion of device in</strong></td>
<td>Putting in a nonbiological appliance that monitors, assists, performs, or prevents a physiological function but does not physically take the place of a body part</td>
<td>Insertion of radioactive implant, insertion of central venous catheter</td>
<td></td>
</tr>
<tr>
<td><strong>Inspection</strong></td>
<td>Visually and/or manually exploring a body part</td>
<td>Visual exploration may be performed with or without optical instrumentation. Manual exploration may be performed directly or through intervening body layers</td>
<td>Diagnostic arthroscopy, exploratory laparotomy</td>
</tr>
</tbody>
</table>
**Figure 1: Root Operation Definitions (cont.)**

**Section 0 - Medical and Surgical**  
**Character 3 - Operation (continued)**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Map</td>
<td>Locating the route of passage of electrical impulses and/or locating functional areas in a body part</td>
<td>Applicable only to the cardiac conduction mechanism and the central nervous system</td>
<td>Cardiac mapping, cortical mapping</td>
</tr>
<tr>
<td>Occlusion</td>
<td>Completely closing an orifice or the lumen of a tubular body part</td>
<td>The orifice can be a natural orifice or an artificially created orifice</td>
<td>Fallopian tube ligation, ligation of inferior vena cava</td>
</tr>
<tr>
<td>Reattachment</td>
<td>Putting back in or on all or a portion of a separated body part to its normal location or other suitable location</td>
<td>Vascular circulation and nervous pathways may or may not be reestablished</td>
<td>Reattachment of hand, reattachment of avulsed kidney</td>
</tr>
<tr>
<td>Release</td>
<td>Freeing a body part from an abnormal physical constraint</td>
<td>Some of the restraining tissue may be taken out but none of the body part is taken out</td>
<td>Adhesiolysis, carpal tunnel release</td>
</tr>
</tbody>
</table>
**Removal of device from**

**Definition:** Taking out or off a device from a body part  
**Explanation:** If a device is taken out and a similar device put in without cutting or puncturing the skin or mucous membrane, the procedure is coded to the root operation CHANGE. Otherwise, the procedure for taking out a device is coded to the root operation REMOVAL.  
**Includes/Examples:** Drainage tube removal, cardiac pacemaker removal

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**Repair**

**Definition:** Restoring, to the extent possible, a body part to its normal anatomic structure and function  
**Explanation:** Used only when the method to accomplish the repair is not one of the other root operations  
**Includes/Examples:** Colostomy takedown, suture of laceration

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**Replacement**

**Definition:** Putting in or on biological or synthetic material that physically takes the place and/or function of all or a portion of a body part  
**Explanation:** The body part may have been taken out or replaced, or may be taken out, physically eradicated, or rendered nonfunctional during the Replacement procedure. A Removal procedure is coded for taking out the device used in a previous replacement procedure  
**Includes/Examples:** Total hip replacement, bone graft, free skin graft
### Figure 1: Root Operation Definitions (cont.)

**Section 0 - Medical and Surgical**  
**Character 3 - Operation (continued)**

<table>
<thead>
<tr>
<th>Operation</th>
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<th>Explanation</th>
<th>Includes/Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reposition</td>
<td>Moving to its normal location, or other suitable location, all or a portion of a body part</td>
<td>The body part is moved to a new location from an abnormal location, or from a normal location where it is not functioning correctly. The body part may or may not be cut out or off to be moved to the new location</td>
<td>Reposition of undescended testicle, fracture reduction</td>
</tr>
<tr>
<td>Resection</td>
<td>Cutting out or off, without replacement, all of a body part</td>
<td></td>
<td>Total nephrectomy, total lobectomy of lung</td>
</tr>
<tr>
<td>Restriction</td>
<td>Partially closing an orifice or the lumen of a tubular body part</td>
<td>The orifice can be a natural orifice or an artificially created orifice</td>
<td>Esophagogastric fundoplication, cervical cerclage</td>
</tr>
<tr>
<td>Revision of device in</td>
<td>Correcting, to the extent possible, a portion of a malfunctioning device or the position of a displaced device</td>
<td>Revision can include correcting a malfunctioning or displaced device by taking out and/or putting in part of the device</td>
<td>Adjustment of position of pacemaker lead, recementing of hip prosthesis</td>
</tr>
</tbody>
</table>
### Figure 1: Root Operation Definitions (cont.)

**Section 0 - Medical and Surgical**  
**Character 3 - Operation (continued)**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Definition</th>
<th>Explanation</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supplement</strong></td>
<td>Putting in or on biological or synthetic material that physically reinforces and/or augments the function of a portion of a body part</td>
<td>The biological material is non-living, or is living and from the same individual. The body part may have been previously replaced, and the Supplement procedure is performed to physically reinforce and/or augment the function of the replaced body part</td>
<td>Herniorrhaphy using mesh, free nerve graft, mitral valve ring annuloplasty, put a new acetabular liner in a previous hip replacement</td>
</tr>
<tr>
<td><strong>Transfer</strong></td>
<td>Moving, without taking out, all or a portion of a body part to another location to take over the function of all or a portion of a body part</td>
<td>The body part transferred remains connected to its vascular and nervous supply</td>
<td>Tendon transfer, skin pedicle flap transfer</td>
</tr>
<tr>
<td><strong>Transplantation</strong></td>
<td>Putting in or on all or a portion of a living body part taken from another individual or animal to physically take the place and/or function of all or a portion of a similar body part</td>
<td>The native body part may or may not be taken out, and the transplanted body part may take over all or a portion of its function</td>
<td>Kidney transplant, heart transplant</td>
</tr>
</tbody>
</table>

Example: Coding an open total appendectomy

Character 1
Character 1 in the code refers to one of 16 sections representing a general category or type of service performed. These sections are represented by the numbers 0–9 and the letters B–D and F–H. Each code begins with reference to a particular section, which then determines the order of the subsequent six characters. Section examples include 0 (medical and surgical), 4 (measuring and monitoring), C (nuclear medicine), and G (mental health). The first character assigned to code an appendectomy is 0, which denotes the medical and surgical section.

Figure 2 provides an example of an ICD-10-PCS Table (gastrointestinal system, resection).
**Character 2**

For section 0 (medical and surgical), the second character refers to a body system that uses generally accepted anatomical categories, which may be further subdivided. Each of the 16 sections has its own list of body sections. For example, the cardiovascular body system includes heart and great vessels, upper arteries, lower arteries, upper veins, and lower veins. The second character in the code for an appendectomy would be D to indicate the gastrointestinal system.
Character 3
The value of character 3 depends on what is selected for the first two characters. For an appendectomy, the third character is T, which denotes “Resection: Cutting out or off, without replacement, all of a body part.” A body part is identified as one that has its own body part value in ICD-10-PCS. Assign multiple characters when a procedure involves distinct parts. In an appendectomy, the distinct objective (i.e., cutting out or off as previously described) is assigned a single descriptive term, “resection.”

Character 4
The value of character 4 depends on the section selected for character 1. When coding an appendectomy or something else from section 1, the fourth character refers to body part, the specific portion of the anatomy on which the procedure is performed. The various options for body parts are dependent on the body system selected for character 2. The combination of the body part and body system values provides a precise description of the procedure site. For an appendectomy, the fourth character is J, which refers to an appendix.

Character 5
In the medical and surgical section, character 5 refers to the approach or method used to reach or expose a body part during a procedure. Examples of an approach in the medical and surgical section include open, percutaneous endoscopic, and via a natural or artificial opening. In an appendectomy, character 5 is 0, which refers to an open approach. ICD-10-PCS provides seven distinctive reportable approaches.
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The fifth character denotes the technique used to reach the procedure site. The seven approaches include:

- **Open**—Cutting through skin or mucous membrane and other body layers necessary to expose procedure site

- **Percutaneous**—Entry, by puncture or incision, of instrumentation through skin or mucous membrane and other body layers necessary to reach procedure site

- **Percutaneous endoscopic**—Entry, by puncture or minor incision, of instrumentation through skin or mucous membrane and other body layers necessary to reach and visualize procedure site

- **Via natural or artificial opening**—Entry of instrumentation through natural or artificial external opening to reach procedure site

- **Via natural or artificial opening endoscopic**—Entry of instrumentation through natural or artificial external opening to reach and visualize procedure site

- **Open with percutaneous endoscopic assistance**—Cutting through skin or mucous membrane and other body layers necessary to expose procedure site, and entry, by puncture or minor incision, of instrumentation through skin or mucous membrane and other body layers necessary to aid in performance of the procedure
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- **External**—Procedures performed directly on skin or mucous membrane and procedures performed indirectly by application of external force through skin or mucous membrane

**Character 6**

In the medical and surgical section, character 6 refers to the medical device used during the procedure. The term “device” is used only for devices that remain inside the patient after the procedure is completed. Device characters are consistent with individual body systems and, as much as possible, across all body systems. The character Z denotes no device. The four basic categories of device values are grafts and prostheses, implants, simple or mechanical appliances, and electronic appliances. When referencing devices, remember that instruments that describe how a procedure is performed are not specified in the device character, and materials that are incidental to a procedure such as clips and sutures are not considered devices. In an appendectomy, character 6 is Z, denoting that no device was used.

Devices in the medical and surgical section include:

- Biological or synthetic material that takes the place of all or a portion of a body
- Biological or synthetic material that assists or prevents a physiologic function
• Therapeutic material that is not absorbed by, eliminated by, or incorporated into a body part and has the potential to be removed

• Mechanical or electrical appliances used to assist, monitor, take the place of, or prevent a physiologic function

Examples of medical and surgical devices include autograft, tissue substitute, and radioactive element.

Character 7
In the medical and surgical section, character 7 refers to the qualifier—additional information that enhances the description of a particular procedure. The qualifier has a unique meaning for individual procedures, but the characters are consistent within individual body systems and, as much as possible, across all body systems. If no qualifier is necessary, Z is used. Examples of qualifiers include type of transplant, second site for a bypass, and original procedure in a revision. In the appendectomy, there is no qualifier, so character 7 is Z.

The code for an appendectomy
The procedure code for an open total appendectomy is 0DTJ0ZZ.
Number of ICD-10 Codes

In total, there are 141,058 ICD-10-CM and ICD-10-PCS codes. They include:

- 69,101 ICD-10-CM diagnosis codes
- 71,957 ICD-10-PCS procedure codes

This represents an increase of 122,905 codes.

ICD-10 Coding Scenarios

1. A patient underwent an open excision of a single upper right arm tendon.

Figure 3 provides an example of an ICD-10-PCS Table (tendons, excision).
Code this procedure as follows:

- 0—Medical and surgical (section)
- L—Tendons (body system)
- B—Excision (root operation)
- 3—Upper arm tendon, right (body part)
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- 0—Open (approach/technique)
- Z—No device
- Z—No qualifier

2. A medical record contains the procedure code 10E0XZZ. This denotes a manually assisted delivery.

Figure 4 provides an example of an ICD-10-PCS Table (pregnancy, delivery).

**Figure 4: ICD-10-PCS Table (Pregnancy, Delivery)**

10E

<table>
<thead>
<tr>
<th>Section</th>
<th>Body System</th>
<th>Operation</th>
<th>Body Part</th>
<th>Approach</th>
<th>Device</th>
<th>Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Obstetrics</td>
<td>0</td>
<td>Pregnancy</td>
<td>Delivery: Assisting the passage of the products of conception from the genital canal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Products of Conception</td>
<td>X</td>
<td>External</td>
<td>Z</td>
<td>No Device</td>
<td>Z</td>
</tr>
</tbody>
</table>

Code this procedure:

- 1—obstetrics (section)
- 0—pregnancy (body system)
- E—delivery (operation)
- 0—products of conception (body part)
- X—external (approach)
- Z—no device
- Z—no qualifier

3. A patient is diagnosed with atherosclerotic heart disease of a native coronary artery with unstable angina pectoris.

Figure 5 provides an example of the ICD-10-CM Tabular List (Category I25).
Figure 5: ICD-10-CM Tabular List (Category I25)

- Excludes1: postinfarction angina (I23.7)
- **I24.8** Other forms of acute ischemic heart disease
- **I24.9** Acute ischemic heart disease, unspecified
  - Excludes1: ischemic heart disease (chronic) NOS (I25.9)

**I25** Chronic ischemic heart disease

Use additional code to identify:
- chronic total occlusion of coronary artery (I25.82)
- exposure to environmental tobacco smoke (Z77.22)
- history of tobacco use (Z87.891)
- occupational exposure to environmental tobacco smoke (Z57.31)
- tobacco dependence (F17.-)
- tobacco use (Z72.0)

- **I25.1** Atherosclerotic heart disease of native coronary artery
  - Atherosclerotic cardiovascular disease
  - Coronary (artery) atheroma
  - Coronary (artery) atherosclerosis
  - Coronary (artery) disease
  - Coronary (artery) sclerosis
  - Use additional code, if applicable, to identify coronary atherosclerosis due to lipid rich plaque (I25.83)
  - Excludes2: atheroembolism (I75.-)
  - atherosclerosis of coronary artery bypass graft(s) and transplanted heart (I25.7-)

- **I25.10** Atherosclerotic heart disease of native coronary artery without angina pectoris
  - Atherosclerotic heart disease NOS
  - I25.11 Atherosclerotic heart disease of native coronary artery with angina pectoris
    - **I25.110** Atherosclerotic heart disease of native coronary artery with unstable angina pectoris
      - Excludes1: unstable angina without atherosclerotic heart disease (I20.0)
    - **I25.111** Atherosclerotic heart disease of native coronary artery with angina pectoris with documented spasm
      - Excludes1: angina pectoris with documented spasm without atherosclerotic heart disease (I20.1)
    - **I25.118** Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris
      - Excludes1: other forms of angina pectoris without atherosclerotic heart disease (I20.8)

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Code this diagnosis:

- Category I00–I99 refers to diseases of the circulatory system

- The subcategory range I20–I25 refers to a certain type of diseases (i.e., ischemic heart diseases)

- Within this subcategory range, I25 refers specifically to chronic ischemic heart disease

- The fourth digit adds the detail on the vessel I25.1 (i.e., atherosclerotic heart disease of native coronary artery)

- The fifth digit identifies the presence of angina I25.11.

- The sixth digit identifies the specific type of angina pectoris I25.110 (i.e., unstable)

4. A patient is diagnosed with rheumatic tricuspid stenosis and insufficiency.

Figure 6 provides an example of ICD-10-CM Tabular List (Category I07).
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Figure 6: ICD-10-CM Tabular List (Category I07)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
</table>
| I05.0 | Rheumatic mitral stenosis  
Mitral (valve) obstruction (rheumatic) |
| I05.1 | Rheumatic mitral insufficiency  
Rheumatic mitral incompetence  
Rheumatic mitral regurgitation |
| I05.2 | Rheumatic mitral stenosis with insufficiency  
Rheumatic mitral stenosis with incompetence or regurgitation |
| I05.8 | Other rheumatic mitral valve diseases  
Rheumatic mitral (valve) failure |
| I05.9 | Rheumatic mitral valve disease, unspecified  
Rheumatic mitral (valve) disorder (chronic) NOS |
| I06.0 | Rheumatic aortic stenosis  
Rheumatic aortic (valve) obstruction |
| I06.1 | Rheumatic aortic insufficiency  
Rheumatic aortic incompetence  
Rheumatic aortic regurgitation |
| I06.2 | Rheumatic aortic stenosis with insufficiency  
Rheumatic aortic stenosis with incompetence or regurgitation |
| I06.8 | Other rheumatic aortic valve diseases |
| I06.9 | Rheumatic aortic valve disease, unspecified  
Rheumatic aortic (valve) disease NOS |
| I07.0 | Rheumatic tricuspid stenosis  
Tricuspid (valve) stenosis (rheumatic) |
| I07.1 | Rheumatic tricuspid insufficiency  
Tricuspid (valve) insufficiency (rheumatic) |
| I07.2 | Rheumatic tricuspid stenosis and insufficiency |
| I07.8 | Other rheumatic tricuspid valve diseases |
| I07.9 | Rheumatic tricuspid valve disease, unspecified  
Rheumatic tricuspid valve disorder NOS |
| I08 | Multiple valve diseases |

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Code this diagnosis as I07.2:

- Category I00–I99 refers to diseases of the circulatory system
- The subcategory range I05–I09 refers to a certain type of disease (i.e., chronic rheumatic heart diseases)
- Within this subcategory range, I07 refers specifically to rheumatic tricuspid valve diseases
- The fourth digit adds the detail regarding stenosis and/or insufficiency I07.2 (i.e., rheumatic tricuspid stenosis and insufficiency)

Timeline for ICD-10

October 1, 2013, is the deadline for implementation and use of ICD-10-CM and ICD-10-PCS.

The intent of one implementation date is avoiding problems such as increased errors, processing confusion, claims denials, provider burden, and a more costly transition.

Use of both codes simultaneously could lead to errors because some codes from the new system will have the same number of digits and be similar to codes from the old system. One implementation date will prevent errors from occurring for this reason.

Use of two different systems simultaneously would cause confusion because providers and payers wouldn’t necessarily know which
system the other is using for specific claims. There will be no confusion if everyone is using the same system.

A problem will occur if a provider submits claims with ICD-9 codes and the third-party payer only accepts claims with ICD-10 codes. This lack of symmetry can result in claims with too few or too many digits and denials by third-party payers.

Maintaining two code sets is unduly burdensome for providers. Inadvertent use of the wrong set would lead to returned claims.

Changing from one system to another is an extremely expensive proposition. Doing so on one date is less expensive than doing so in stages.

Cost of Implementing ICD-10

Estimates of the cost of implementing ICD-10-CM and ICD-10-PCS range from $5.5 to $13.5 billion. The estimates consider the cost of necessary training, productivity loss during the transition, and returned claims due to errors or confusion.

The following estimates spread the cost over five years (estimates are subject to change as organizations assess their needs):

- 1st year (2009–2010): 5% for assessment, planning, and team development

- 2nd year (October 2010–October 2011): 15% for programming, impact analysis, and initial training
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- 3rd year (October 2011–October 2012): 20% for coding education, payer assessments, and testing

- 4th year (October 2012–October 2013): 50% for go-live, increased education, testing, and payer readiness

- 5th year (October 2013–October 2014): 10% for follow-up education, systems review, productivity assessments, and resolution of payer issues

One study estimates that 2 million people will require ICD-10 training, including 180,000 part-time coders, 50,000 full-time coders, and approximately 240,000 code users (e.g., consultants, auditors, and claims adjudicators). Another study estimates the cost at $2,750 per capita, including $550 for actual training and $2,200 for lost productivity. Expenditures generally will be spread over three years, including 15% in 2010, 75% in 2011, and 10% in 2012.

Likely causes of lost productivity include unfamiliarity with ICD-10’s index structure, different main or subordinate terms, more time to review records, and the need to look up memorized codes.

Returned claims usually spike three to six months after implementation of a code update, typical representing approximately 3% of claims. The anticipated increase associated with ICD-10 implementation is estimated at 6%–10%. ICD-10’s structure and greater specificity ultimately will result in fewer returned claims.