

**Healthcare Cost and Utilization Project – HCUP**  
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**CLINICAL CLASSIFICATIONS SOFTWARE (CCS) 2012**

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## ABSTRACT

Developed at the Agency for Healthcare Research and Quality (AHRQ), the Clinical Classifications Software (CCS) is a tool for clustering patient diagnoses and procedures into a manageable number of clinically meaningful categories. CCS offers researchers the ability to group conditions and procedures without having to sort through thousands of codes. This "clinical grouper" makes it easier to quickly understand patterns of diagnoses and procedures so that health plans, policy makers, and researchers can analyze costs, utilization, and outcomes associated with particular illnesses and procedures.

CCS collapses diagnosis and procedure codes from the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM), which contains more than 14,000 diagnosis codes and 3,900 procedure codes. Without the CCS tool, the large number of ICD-9-CM codes makes statistical analysis and reporting difficult and time-consuming.

CCS consists of two related classification systems, single-level and multi-level, which are designed to meet different needs. *Single-level* CCS is most useful for ranking of diagnoses and procedures and for direct integration into risk adjustment and other software. *Multi-level* CCS is ideal for evaluating larger aggregations of conditions and procedures or exploring these groupings in greater detail.

## INTRODUCTION TO THE CLINICAL CLASSIFICATIONS SOFTWARE (CCS) 2012 User's Guide

### Overview

Clinical Classifications Software provides a way to classify diagnoses and procedures into a limited number of categories by aggregating individual ICD-9-CM codes into broad diagnosis and procedure groups to facilitate statistical analysis and reporting. This document provides a description of the CCS categorization scheme. Electronic files containing the translation of ICD-9-CM diagnosis and procedure codes into CCS categories can be downloaded from this site. (CCS was formally called CCHPR, Clinical Classifications for Health Policy Research.)

The CCS tool is continually updated. The current version is based on ICD-9-CM codes that are valid for January 1980 through September 2012. CCS consists of two related classification systems. The first system, called the *single-level CCS*, groups diagnoses into mutually exclusive categories. The single-level *diagnosis CCS* aggregates illnesses and conditions into 285 mutually exclusive categories. Similarly, the single-level *procedure CCS* aggregates procedures into 231 mutually exclusive categories, most of which are homogeneous.

The second system expands the single-level CCS into a hierarchical structure referred to as the *multi-level CCS*. This system groups single-level CCS categories into broader categories (e.g., Infectious Diseases, Mental Disorders, and Injury). It also splits single-level CCS categories to provide more detail about particular groupings of codes.

The CCS documentation provides researchers with a listing of the ICD-9-CM codes that are included in each CCS diagnosis and procedure category.

### Purpose

CCS categories can be employed in many types of projects analyzing data on diagnoses and procedures. For example, they can be used to:

- ◆ Identify cases for disease-specific or procedure-specific studies
- ◆ Gain a better understanding of an institution's or health plan's distribution of patients across disease or procedure groupings
- ◆ Provide statistical information on characteristics, such as charges and length of stay, about relatively specific conditions
- ◆ Cross-classify procedures by diagnoses to provide insight into the variety of procedures performed for particular diagnoses.

Diagnoses and procedures for hospital inpatient stays are coded using the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM, Fifth Edition). ICD-9-CM consists of about 14,000 diagnosis codes and 3,900 procedure codes. Although it is possible to present descriptive statistics for individual ICD-9-CM codes, it is often useful to aggregate codes into clinically meaningful categories that group similar conditions or procedures. Examples of the use of CCS categories can be found at

<http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp#pubs>. These reports aggregate individual hospital stays into larger diagnosis and procedure groups for statistical analysis and reporting. CCS is unique as a grouping approach because it does not mix diagnoses with treatment; rather, it separates diagnoses and procedures into two different classifications.

## **History of Development**

Clinical Classifications for Health Policy Research (CCHPR) Version 1 represented AHRQ's initial effort to construct clinically meaningful categories of diagnoses and procedures. The key factor in creating these categories was the extent to which conditions and procedures could be grouped into relatively homogeneous clusters of interest to public policy researchers. CCHPR Version 1 consisted of 185 summary diagnosis categories and 172 summary procedure categories (Elixhauser, Andrews, and Fox, 1993).

CCHPR Version 2 was derived from the Version 1 summary diagnosis and procedure categories. Version 1 categories were modified on the basis of clinical homogeneity, frequency of occurrence in inpatient discharge data, and ICD-9-CM coding changes. The number of discharges in all categories was computed using 1991 California hospital inpatient data on all-listed diagnoses and all-listed procedures from the Healthcare Cost and Utilization Project State Inpatient Databases (SID).

The modified CCHPR schemes were reviewed by technical specialists who evaluated the categories and ICD-9-CM code assignments for accuracy and clinical significance. The reviews consisted of trained medical records personnel and a physician with experience in medical classification. During the review process, additional categories were created, other categories were collapsed, and codes were reassigned when appropriate.

Version 2 contained more categories than Version 1. Some conglomerate categories (e.g., "Other gastrointestinal procedures") and high-frequency categories (e.g., "Pregnancy-related conditions") were divided into smaller, more clinically homogeneous groups.

Beginning with the 1999 update, three important changes were introduced: an additional classification scheme (the multi-level CCS) was introduced; E codes (external causes of injury) received special treatment; and the name was changed to Clinical Classification Software (CCS), to reflect the broader use of the classifications beyond health policy research.

Beginning with the 2008 update, the mental health section of the CCS was replaced with the mental health categories from the CCS-Mental Health and Substance Abuse (MHSA). The CCS-MHSA is a stand-alone algorithm that was developed as an alternative to the mental health section of the CCS. While the CCS mental health categories were formed using the ICD-9-CM coding scheme as an organizing framework, the CCS-MHSA tool began with DSM-IV as the organizing framework and as such it better reflects psychiatric nosology. For more information, see the section below, entitled, "Notes About Integration with the CCS-MHSA Tool."

## DESCRIPTION

### Single-Level CCS

#### *Diagnosis Codes*

The single-level diagnosis classification scheme aggregates illnesses and conditions into 285 mutually exclusive categories, most of which are clinically homogeneous. Some heterogeneous categories were necessary; these combine several less common individual conditions within a body system.

All codes in the diagnosis section of ICD-9-CM are classified. In previous versions of the system, E codes (External Causes of Injury and Poisoning) were not classified because they are used sporadically in inpatient data. Hence, they were aggregated into a single category (CCS 260). Beginning with the 1999 version of the CCS, a classification system for E codes was incorporated. The E code classification was developed by staff at the Centers for Disease and Control and Prevention (Centers for Disease Control, 1997). Examples of single-level CCS diagnosis categories are shown in Table 1.

Description	ICD-9-CM <sup>1</sup> diagnosis Codes used to map	CCS category
Essential Hypertension	4011 4019	98
Hypertension with complications and secondary hypertension	4010 40200 40201 40210 40211 40290 40291 4030 40300 40301 4031 40310 40311 4039 40390 40391 4040 40400 40401 40402 40403 4041 40410 40411 40412 40413 4049 40490 40491 40492 40493 40501 40509 40511 40519 40591 40599 4372	99

ICD-9-CM codes for the single-level diagnosis CCS categories are presented in Appendix A. The ICD-9-CM code assignments to each category are viewable in the accompanying executable file that provides the crosswalk from ICD-9-CM diagnosis codes to single-level CCS categories.

Labels for the single-level CCS diagnoses are available in Appendix A1.

#### *Procedure Codes*

The single-level procedure classification scheme contains 231 mutually exclusive categories. Many of the categories represent single procedures; however, some procedures that occur infrequently are grouped according to three dimensions: 1) the

---

<sup>1</sup>Additional information about the application of ICD-9-CM diagnosis and procedure codes is presented later in this document.

relevant body system; 2) whether they are used for diagnostic or therapeutic purposes; and 3) whether they are considered operating room or non-operating room procedures, according to diagnosis related groups (DRG) definitions. Examples of single-level CCS procedure categories are illustrated in Table 2.

Description	ICD-9-CM procedure Codes used to map	CCS category
Heart valve procedures	3500 3501 3502 3503 3504 3510 3511 3512 3513 3514 3520 3521 3522 3523 3524 3525 3526 3527 3528 3596 3599	43
Coronary artery bypass graft (CABG)	3610 3611 3612 3613 3614 3615 3616 3617 3619 362 363 3631 3632 3639	44

ICD-9-CM codes for the single-level procedure CCS categories are presented in Appendix B. The ICD-9-CM code assignments to each category can be viewed in the accompanying executable files that provide the crosswalk from ICD-9-CM procedure codes to single-level CCS categories.

Labels for the single-level CCS procedures are available in Appendix B1.

### **Multi-level CCS**

The multi-level CCS is a hierarchical system that is defined using both single-level CCS groupings and ICD-9-CM codes. Four levels exist in the multi-level *diagnosis CCS*, while three levels exist in the multi-level *procedure CCS*. The first of the four levels in the multi-level diagnosis CCS is broken into 18 categories. The first of the three levels in the multi-level procedure CCS is divided into 16 categories. These categories broadly group the single-level CCS and ICD-9-CM codes into 17 diagnosis and 16 procedure body systems (e.g., “Diseases of the Circulatory System”). *Note that multi-level CCS categories are comprised of single-level CCS categories or ICD-9-CM codes. Construction of multi-level CCS requires that ICD-9-CM codes first be assigned to single-level CCS.*

#### *Diagnosis Codes*

The specificity of categories increases with the higher levels, such that second-level categories are more specific than first-level categories, third-level categories are more specific than second-level categories, and fourth-level categories are more specific than third-level categories.

The first-level categories are identified by one whole digit (1-18), second-level categories include one decimal point, third-level categories have two decimal places and fourth-level categories have three decimal places.

Table 3 provides an example of multi-level CCS for diagnoses, revealing how single-level CCS category 99 (from single-level CCS example in Table 1) is further subdivided into the more specific levels in the multi-level system.

<b>Table 3: Examples of multi-level CCS diagnosis categories</b>			
Multi-level CCS category	Description	ICD-9-CM diagnoses used to map	Single-level CCS used to map
7	Diseases of the circulatory system	--	96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121
7.1	Hypertension	--	98 99
7.1.1	Essential hypertension	--	98
7.1.2	Hypertension with complications and secondary hypertension	--	99
7.1.2.1	Hypertensive heart and/or renal disease	40200 40201 40210 40211 40290 40291 4030 40300 40301 4031 40310 40311 4039 40390 40391 4040 40400 40401 40402 40403 4041 40410 40411 40412 40413 4049 40490 40491 40492 40493	--
7.1.2.2	Other hypertensive complications	4010 40501 40509 40511 40519 40591 40599 4372	--

ICD-9-CM codes for the multi-level diagnosis CCS categories are presented in Appendix C.

Labels for the multi-level CCS diagnoses are available in Appendix C1.

#### *Procedure Codes*

Only three levels exist in the multi-level procedure CCS. The specificity of the procedure categories increases with the higher levels, such that second-level categories are more specific than first-level categories and third-level categories are more specific than second-level categories.

The first-level categories are identified by one whole digit (1-16), second-level categories include one decimal point, and third-level categories have two decimal places.

Table 4 provides an example of multi-level CCS for procedures, revealing how single-level CCS category 44 (from single-level CCS example in Table 2) is further subdivided into the more specific levels in the multi-level system.

<b>Table 4: Examples of multi-level CCS procedure categories</b>			
Multi-level CCS category	Description	ICD-9-CM diagnoses used to map	Single-level CCS used to map
7	Operations on the cardiovascular system	--	43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63
7.1	Heart valve procedures	--	43
7.2	Coronary artery bypass graft (CABG)	--	44
7.2.1	Bypass of one coronary artery	3611	--
7.2.2	Bypass of two coronary arteries	3612	--
7.2.3	Bypass of three coronary arteries	3613	--
7.2.4	Bypass of four coronary arteries	3614	--
7.2.5	Other bypass of coronary arteries	3610 3615 3616 3617 3619 362 363 3631 3632 3639	--

ICD-9-CM codes for the multi-level procedure CCS categories are presented in Appendix D.

Labels for the multi-level CCS procedures are available in Appendix D1. In addition to the appendices, the CCS User's Guide contains two tables (Table A and Table B) that researchers may find useful. These tables group the CCS categories into body systems. Another system for grouping CCS categories can be found at [http://www.meps.ahrq.gov/mepsweb/data\\_stats/conditions.shtml](http://www.meps.ahrq.gov/mepsweb/data_stats/conditions.shtml). This system groups the diagnosis categories into 61 broader categories.

## **NOTES ABOUT INTEGRATION WITH THE CCS-MHSA TOOL**

In 2008 the Mental Health Substance Abuse Clinical Classification Software (CCS-MHSA) tool was integrated into the CCS. As a starting point for development of the CCS-MHSA, we used the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (APA, 1994). In addition, we consulted the ICD-9-CM code lists and classifications used in discussions with staff at the National Institutes for Mental Health (personal communication, NIMH, 2002), the Substance Abuse and Mental Health Services Administration (personal communication, SAMHSA, 2005), a peer-reviewed journal article (Pottick et al., 2000) and an algorithm developed by Billings (2004). A complete review of ICD-9-CM diagnosis codes was conducted in order to identify any diagnosis code that reflects a mental health or substance abuse condition.

In general, we followed the categorization of mental health and substance abuse conditions and code assignments outlined in the DSM-IV. Additional codes, such as mental disorders in pregnancy (64840-64844), drug dependency in pregnancy (64830-64834), and additional V codes, were included as a result of communications with NIMH and SAMHSA and a review of the Billings algorithm. External cause of injury codes (E codes) that indicated the injury was self-inflicted or related to a suicide attempt were also incorporated in accordance with the Billings algorithm.

The integration affected both the single-level and multi-level CCS tools for diagnoses. The CCS-MHSA general tool consists of 15 categories numbered 650-663 and 670. These categories replaced the original CCS single-level categories 65-75. See Appendix A1 below for more information on the single-level integration. The CCS-MHSA specific tool consists of 27 classifications which replaced the old CCS multi-level categories found under "5" (mental health). Refer to Appendix C1 for more details on the multi-level integration. The CCS-MHSA categories function in the same way as the CCS; they can be used with any data that include ICD-9-CM diagnosis information concerned with mental health and/or substance abuse conditions.

Incorporation of the CCS-MHSA into the original CCS required reassignment of several codes not originally found in the CCS mental health categories. For example, maternal codes for mental health and substance abuse were originally included in CCS categories for pregnancy complications; however, with the revised CCS, these codes have been placed into mental health and substance categories. Similarly, E codes for suicide and self-inflicted injury were originally placed into the E code categories at the end of the CCS based on the mechanism of injury. With the revised CCS, suicide and self-inflicted injury E codes are grouped into a separate category in the mental health series of CCS categories.

## **NOTES ABOUT OPTIONAL SUICIDE E CODE CATEGORIES**

Suicide E Codes (external cause of injury codes) are assigned to CCS category 662, "Suicide and Self-Inflicted Injury". However, for users who wish to assign these E codes to a mechanism of injury CCS, an optional CCS category has been provided in the single-level diagnosis tool (\$dxref 2012.csv) for each code. These optional CCS categories follow the CDC's classification of E codes into mechanism of injury categories such as firearm or poisoning. Interested users should simply reassign suicide codes from category 662 to the optional secondary CCS categories as detailed in column five of \$DXREF 2012.csv. The code below gives an example of the reassignment process. Similar code can be used to reassign the CCS label:

```

Filename inraw "c:\tools\ccs\DXREF 2012.csv" ;
/*****/
/* Make a SAS format Using the Optional */
/* Suicide Mechanism CCS Category. */
/*****/
data new;
  infile inraw dsd dlm=', ' end = eof firstobs=3 missover;
    input start : $char5.
          Oldccs : $char4.
          Value1 : $char70.
          Value2 : $char70.
          Label : $char4.
          Value3 : $char70.
    ;
    retain hlo " ";
    fmtname = "$ccs" ;
    type = " " ;
    output;

    if eof then do ;
      start = " " ;
      label = " " ;
      hlo = "o";
      output ;
    end ;
run;
proc format cntlin = new ;
run;
/*****/
/* Reassign CCS to the Optional CCS for */
/* Suicide mechanism using SAS format. */
/*****/
data test;
  Set ecodedata;
  Ccs = put(encode,$ccs.)
run;

```

### EMPTY CATEGORIES:

Please note that because of revisions to the CCS, single-level category 150 and multi-level categories 11.3.7.3 and 9.8.1 do not contain any diagnosis codes as of FY 2008. Also, single-level category 260 does not contain any E Codes as of FY 2005.

## NOTES ABOUT ICD-9-CM CODING CHANGES

### Time period covered by CCS

In order to keep abreast of yearly changes in the ICD-9-CM codes, the CCS categories are updated annually. This occurs after code assignments are reviewed and agreement is reached among the developers and medical records personnel.

The ICD-9-CM codes are revised every October. New codes are added, existing codes are deleted, and definitions of current codes are changed. CCS categories are revised in response to ICD-9-CM changes. **The 2012 version of the CCS is valid for the time period January 1980 through September 2012.** Using these CCS categories with data outside this time frame will result in misclassification of ICD-9-CM codes.

## ICD-9-CM codes requiring special treatment

CCS accounts for all changes in ICD-9-CM coding definitions during this time period, with the exception of several codes whose meaning changed to such an extent that the CCS category assignment changed, as well. These codes must be explicitly assigned by the user when working with older data. If you use more recent data (as described below), no special treatment is necessary because the codes are correctly assigned in the CCS program.

Assignment of these codes requires information on the year and quarter of service. When using data that span the time periods described below, these ICD-9-CM codes must be explicitly assigned to CCS categories according to the year and quarter of the data.

- ◆ Special treatment is required for the following diagnosis code:

From January 1980 to September 1993, ICD-9-CM diagnosis code '2510 ' should appear in CCS diagnosis category 50 (Diabetes mellitus with complications).

Beginning in October 1993, ICD-9-CM diagnosis code '2510 ' appears in CCS diagnosis category 51 (Other endocrine disorders). The current CCS program assigns this code to category 51.

- ◆ Special treatment is required for the following procedure codes:

From January 1980 to September 1989, ICD-9-CM procedure code '8159' should appear in CCS procedure category 153 (Hip replacement, total and partial).

Beginning in October 1989, ICD-9-CM procedure code '8159' appears in CCS procedure category 154 (Arthroplasty, other than hip or knee). The current CCS program assigns this code to category 154.

From January 1980 to September 1989, ICD-9-CM procedure codes '8162,' '8163,' and '8164' should appear in CCS procedure category 153 (Hip replacement, total and partial).

Beginning in October 2003, ICD-9-CM procedure codes '8162,' '8163,' and '8164' appear in CCS procedure category 158 (Spinal Fusion). The current CCS program assigns these codes to category 158.

## DESCRIPTION OF DOWNLOADABLE FILES

### System requirements

In order to use the CCS files, you will need a program (such as WinZip®) that will allow you to decompress or “unzip” files. You will also need approximately 1.5 megabytes of disk space available on your hard drive to accommodate all the single-level CCS files. You will need approximately 2.5 megabytes available to accommodate all the multi-level CCS files after they are unzipped.

### "Unzipping" files

There are two downloadable files, both self-extracting zipped files, called Single\_Level\_CCS\_2012.zip (for the single-level CCS) and Multi\_Level\_CCS\_2012.zip (for the multi-level CCS).

### Single-level CCS

Single\_Level\_CCS\_2012.zip contains two comma delimited files (.csv) (Microsoft Excel text) that translate ICD-9-CM codes into single-level CCS categories and two comma delimited files (.csv) (Microsoft Excel text) that provide descriptive labels for the single-level CCS categories. To use these zipped files, you must do the following:

1. Create a subdirectory (or folder) called CCS on your hard drive (e.g., MD C:\CCS). You will need a total of approximately 1.5 megabytes to accommodate all the files after they are unzipped.
2. Download and save Single\_Level\_CCS\_2012.zip to this subdirectory.
3. Using WinZip (or comparable program), double click on Single\_Level\_CCS\_2012.zip to expand the files.

The zipped file will unzip (expand for normal use) the files listed below. Note that the original file (Single\_Level\_CCS\_2012.zip) will remain intact.

Filename	Purpose
Diagnosis CCS	
\$DXREF 2012.csv	Translation file that maps ICD-9-CM diagnosis codes into single-level CCS diagnosis categories, with complete information about each ICD-9-CM code and brief CCS labels.
DXLABEL 2009.csv	Label file contains the complete descriptive single-level CCS diagnosis category names to use when reporting the diagnosis categories.
Procedure CCS	
\$PRREF 2012.csv	Translation file that maps ICD-9-CM procedure codes into single-level CCS procedure categories, with complete information about each ICD-9-CM code and brief CCS labels.

PRLABEL 2009.csv	Label file contains the complete descriptive single-level CCS procedure category names to use when reporting the procedure categories.
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## Multi-level CCS

Multi\_Level\_CCS\_2012.zip contains two comma delimited files (.csv) (Microsoft Excel text) that translate ICD-9-CM codes into multi-level CCS categories, and two comma delimited files (.csv) (Microsoft Excel text) that provide descriptive labels for the multilevel CCS categories. *Multi\_Level\_CCS\_2012.zip also contains two SAS programs: Multi\_CCS\_Load\_Program.sas allows users to load the multi-level CCS categories for both diagnosis and procedures. Multi\_CCS\_Summary\_Program.sas generates a frequency report of multi-level CCS categories for either the primary diagnosis or primary procedure.* To use this zipped file, you must do the following:

1. Create a new subdirectory (or folder) on your hard drive. You will need a total of approximately 2.5 megabytes free to accommodate all the files after they are unzipped.
2. Download and save Multi\_Level\_CCS\_2012.zip to this subdirectory.
3. Using WinZip (or comparable program), double click on Multi\_Level\_CCS\_2012.zip to expand the files.

The self-extracting zipped file will unzip (expand for normal use) the files described below. Note that the original file (Multi\_Level\_CCS\_2012.zip) will remain intact.

Filename	Purpose
Multi-level Diagnosis CCS	
CCS_MULTI_DX_TOOL_2012.csv	Translation file that maps diagnosis codes into level 1-4 multi-level CCS categories.
DXMLABEL-09.csv	Label file that contains the complete descriptive multi-level CCS diagnosis category names to use when reporting the diagnosis categories.
Multi-level Procedure CCS	
CCS_MULTI_PR_TOOL_2012.csv	Translation file that maps procedure codes into level 1-3 multi-level procedure CCS categories.
PRMLABEL-09.csv	Label file that contains the complete descriptive multi-level CCS procedure category names to use when reporting the procedure categories.
SAS Utility Programs	

Multi_CCS_Load_Program.sas	SAS program file that loads the multi-level CCS categories for diagnosis and procedures.
Multi_CCS_Summary_Program.sas	SAS program file that produces a frequency report of the multi-level CCS categories for either the primary diagnosis or primary procedure.

### Using translation files

For the single-level CCS, the translation files translate specific ICD-9-CM codes into CCS categories. The new multi-level CCS translation files map ICD-9-CM codes directly into CCS Level 1, 2, 3, or 4 categories.

The program called “Multi\_CCS\_Load\_Program.sas” can be used to create the multi-level CCS categories. This is recommended for users who have not already developed custom SAS code to load the multi-level categories.

How you use these files will depend on the software system being utilized. For example, if you are using SAS, you can adapt these translations to create a SAS PROC FORMAT. If you are working with SPSS, you can adapt these translations into VALUE LABELS or into a series of recodes.

### Representation of ICD-9-CM diagnosis codes

In practice, ICD-9-CM diagnoses are represented by 3- to 5-character codes with explicit decimals. In the files you downloaded and in the vast majority of data files, ICD-9-CM diagnoses are represented as 5-character alphanumeric codes with implicit decimals. (Alphanumeric codes are always enclosed in quotation marks.) Examples are given below.

Condition	ICD-9-CM diagnosis code	Alphanumeric code (with implicit decimals)
Pneumococcal pneumonia	481	'481 '
Pneumonia due to Klebsiella pneumoniae	482.0	'4820 '
Pneumonia due to Escherichia coli	482.82	'48282'
Single liveborn infant, born in hospital, delivered by cesarean delivery	V30.01	'V3001'

For proper handling of diagnosis codes:

- ◆ Alphanumeric diagnosis codes must be left-justified so that there are 2 spaces following a 3-character diagnosis code and 1 space following a 4-character diagnosis code. For example – '481 '.
- ◆ Trailing blanks should never be zero-padded (filled with zeroes so that all 5 characters are filled for codes that should be 3 or 4 characters long). For example – '481 ' should not be changed to '48100'.
- ◆ Leading zeroes must be preserved; they are significant.

### Representation of ICD-9-CM procedure codes

In practice, ICD-9-CM procedures are represented by 3- or 4-character codes with explicit decimals. In the accompanying files and in the vast majority of data files, ICD-9-CM procedures are represented as 4-character alphanumeric codes with implicit decimals. (Alphanumeric codes are always enclosed in quotation marks.) Examples are provided below.

Condition	ICD-9-CM procedure code	Alphanumeric code (with implicit decimals)
Incision of prostate	60.0	'600 '
Closed biopsy of prostate	60.11	'6011'

For proper handling of procedure codes:

- ◆ Alphanumeric procedure codes must be left-justified, so that there is always 1 space following a 3-character procedure code. For example – '600 '
- ◆ Trailing blanks should never be zero-padded (filled with zeroes so that all 4 characters are filled for codes that should be 3 characters long). For example – '600 ' should not be changed to '6000'.
- ◆ Leading zeroes must be preserved; they are significant.

## REFERENCES

Centers for Disease Control and Prevention. Recommended framework for presenting injury mortality data. *Morbidity and Mortality Weekly Report*, 1997, Aug 29; 46(no. RR14): 1-30.

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# Appendix A1

## Single-Level CCS – Diagnoses

### CATEGORY LABELS

- 1 Tuberculosis
- 2 Septicemia (except in labor)
- 3 Bacterial infection; unspecified site
- 4 Mycoses
- 5 HIV infection
- 6 Hepatitis
- 7 Viral infection
- 8 Other infections; including parasitic
- 9 Sexually transmitted infections (not HIV or hepatitis)
- 10 Immunizations and screening for infectious disease
- 11 Cancer of head and neck
- 12 Cancer of esophagus
- 13 Cancer of stomach
- 14 Cancer of colon
- 15 Cancer of rectum and anus
- 16 Cancer of liver and intrahepatic bile duct
- 17 Cancer of pancreas
- 18 Cancer of other GI organs; peritoneum
- 19 Cancer of bronchus; lung
- 20 Cancer; other respiratory and intrathoracic
- 21 Cancer of bone and connective tissue
- 22 Melanomas of skin
- 23 Other non-epithelial cancer of skin
- 24 Cancer of breast
- 25 Cancer of uterus
- 26 Cancer of cervix
- 27 Cancer of ovary
- 28 Cancer of other female genital organs
- 29 Cancer of prostate
- 30 Cancer of testis
- 31 Cancer of other male genital organs
- 32 Cancer of bladder
- 33 Cancer of kidney and renal pelvis
- 34 Cancer of other urinary organs
- 35 Cancer of brain and nervous system
- 36 Cancer of thyroid
- 37 Hodgkin`s disease
- 38 Non-Hodgkin`s lymphoma
- 39 Leukemias
- 40 Multiple myeloma
- 41 Cancer; other and unspecified primary
- 42 Secondary malignancies
- 43 Malignant neoplasm without specification of site
- 44 Neoplasms of unspecified nature or uncertain behavior
- 45 Maintenance chemotherapy; radiotherapy
- 46 Benign neoplasm of uterus
- 47 Other and unspecified benign neoplasm
- 48 Thyroid disorders
- 49 Diabetes mellitus without complication

50 Diabetes mellitus with complications  
 51 Other endocrine disorders  
 52 Nutritional deficiencies  
 53 Disorders of lipid metabolism  
 54 Gout and other crystal arthropathies  
 55 Fluid and electrolyte disorders  
 56 Cystic fibrosis  
 57 Immunity disorders  
 58 Other nutritional; endocrine; and metabolic disorders  
 59 Deficiency and other anemia  
 60 Acute posthemorrhagic anemia  
 61 Sickle cell anemia  
 62 Coagulation and hemorrhagic disorders  
 63 Diseases of white blood cells  
 64 Other hematologic conditions  
**650 MHA: Adjustment disorders**  
**651 MHA: Anxiety disorders**  
**652 MHA: Attention-deficit, conduct, and disruptive behavior disorders**  
**653 MHA: Delirium, dementia, and amnestic and other cognitive disorders**  
**654 MHA: Developmental disorders**  
**655 MHA: Disorders usually diagnosed in infancy, childhood, or adolescence**  
**656 MHA: Impulse control disorders, NEC**  
**657 MHA: Mood disorders**  
**658 MHA: Personality disorders**  
**659 MHA: Schizophrenia and other psychotic disorders**  
**660 MHA: Alcohol-related disorders**  
**661 MHA: Substance-related disorders**  
**662 MHA: Suicide and intentional self-inflicted injury**  
**663 MHA: Screening and history of mental health and substance abuse codes**  
**670 MHA: Miscellaneous mental disorders**  
 76 Meningitis (except that caused by tuberculosis or sexually transmitted disease)  
 77 Encephalitis (except that caused by tuberculosis or sexually transmitted disease)  
 78 Other CNS infection and poliomyelitis  
 79 Parkinson`s disease  
 80 Multiple sclerosis  
 81 Other hereditary and degenerative nervous system conditions  
 82 Paralysis  
 83 Epilepsy; convulsions  
 84 Headache; including migraine  
 85 Coma; stupor; and brain damage  
 86 Cataract  
 87 Retinal detachments; defects; vascular occlusion; and retinopathy  
 88 Glaucoma  
 89 Blindness and vision defects  
 90 Inflammation; infection of eye (except that caused by tuberculosis or sexually transmitted disease)  
 91 Other eye disorders  
 92 Otitis media and related conditions  
 93 Conditions associated with dizziness or vertigo  
 94 Other ear and sense organ disorders  
 95 Other nervous system disorders  
 96 Heart valve disorders  
 97 Peri-; endo-; and myocarditis; cardiomyopathy (except that caused by tuberculosis or sexually transmitted disease)  
 98 Essential hypertension  
 99 Hypertension with complications and secondary hypertension

100 Acute myocardial infarction  
101 Coronary atherosclerosis and other heart disease  
102 Nonspecific chest pain  
103 Pulmonary heart disease  
104 Other and ill-defined heart disease  
105 Conduction disorders  
106 Cardiac dysrhythmias  
107 Cardiac arrest and ventricular fibrillation  
108 Congestive heart failure; nonhypertensive  
109 Acute cerebrovascular disease  
110 Occlusion or stenosis of precerebral arteries  
111 Other and ill-defined cerebrovascular disease  
112 Transient cerebral ischemia  
113 Late effects of cerebrovascular disease  
114 Peripheral and visceral atherosclerosis  
115 Aortic; peripheral; and visceral artery aneurysms  
116 Aortic and peripheral arterial embolism or thrombosis  
117 Other circulatory disease  
118 Phlebitis; thrombophlebitis and thromboembolism  
119 Varicose veins of lower extremity  
120 Hemorrhoids  
121 Other diseases of veins and lymphatics  
122 Pneumonia (except that caused by tuberculosis or sexually transmitted disease)  
123 Influenza  
124 Acute and chronic tonsillitis  
125 Acute bronchitis  
126 Other upper respiratory infections  
127 Chronic obstructive pulmonary disease and bronchiectasis  
128 Asthma  
129 Aspiration pneumonitis; food/vomitus  
130 Pleurisy; pneumothorax; pulmonary collapse  
131 Respiratory failure; insufficiency; arrest (adult)  
132 Lung disease due to external agents  
133 Other lower respiratory disease  
134 Other upper respiratory disease  
135 Intestinal infection  
136 Disorders of teeth and jaw  
137 Diseases of mouth; excluding dental  
138 Esophageal disorders  
139 Gastroduodenal ulcer (except hemorrhage)  
140 Gastritis and duodenitis  
141 Other disorders of stomach and duodenum  
142 Appendicitis and other appendiceal conditions  
143 Abdominal hernia  
144 Regional enteritis and ulcerative colitis  
145 Intestinal obstruction without hernia  
146 Diverticulosis and diverticulitis  
147 Anal and rectal conditions  
148 Peritonitis and intestinal abscess  
149 Biliary tract disease  
150 Liver disease; alcohol-related  
151 Other liver diseases  
152 Pancreatic disorders (not diabetes)  
153 Gastrointestinal hemorrhage  
154 Noninfectious gastroenteritis  
155 Other gastrointestinal disorders

156 Nephritis; nephrosis; renal sclerosis  
157 Acute and unspecified renal failure  
158 Chronic renal failure  
159 Urinary tract infections  
160 Calculus of urinary tract  
161 Other diseases of kidney and ureters  
162 Other diseases of bladder and urethra  
163 Genitourinary symptoms and ill-defined conditions  
164 Hyperplasia of prostate  
165 Inflammatory conditions of male genital organs  
166 Other male genital disorders  
167 Nonmalignant breast conditions  
168 Inflammatory diseases of female pelvic organs  
169 Endometriosis  
170 Prolapse of female genital organs  
171 Menstrual disorders  
172 Ovarian cyst  
173 Menopausal disorders  
174 Female infertility  
175 Other female genital disorders  
176 Contraceptive and procreative management  
177 Spontaneous abortion  
178 Induced abortion  
179 Postabortion complications  
180 Ectopic pregnancy  
181 Other complications of pregnancy  
182 Hemorrhage during pregnancy; abruptio placenta; placenta previa  
183 Hypertension complicating pregnancy; childbirth and the puerperium  
184 Early or threatened labor  
185 Prolonged pregnancy  
186 Diabetes or abnormal glucose tolerance complicating pregnancy; childbirth; or the puerperium  
187 Malposition; malpresentation  
188 Fetopelvic disproportion; obstruction  
189 Previous C-section  
190 Fetal distress and abnormal forces of labor  
191 Polyhydramnios and other problems of amniotic cavity  
192 Umbilical cord complication  
193 OB-related trauma to perineum and vulva  
194 Forceps delivery  
195 Other complications of birth; puerperium affecting management of mother  
196 Normal pregnancy and/or delivery  
197 Skin and subcutaneous tissue infections  
198 Other inflammatory condition of skin  
199 Chronic ulcer of skin  
200 Other skin disorders  
201 Infective arthritis and osteomyelitis (except that caused by tuberculosis or sexually transmitted disease)  
202 Rheumatoid arthritis and related disease  
203 Osteoarthritis  
204 Other non-traumatic joint disorders  
205 Spondylosis; intervertebral disc disorders; other back problems  
206 Osteoporosis  
207 Pathological fracture  
208 Acquired foot deformities  
209 Other acquired deformities

210 Systemic lupus erythematosus and connective tissue disorders  
211 Other connective tissue disease  
212 Other bone disease and musculoskeletal deformities  
213 Cardiac and circulatory congenital anomalies  
214 Digestive congenital anomalies  
215 Genitourinary congenital anomalies  
216 Nervous system congenital anomalies  
217 Other congenital anomalies  
218 Liveborn  
219 Short gestation; low birth weight; and fetal growth retardation  
220 Intrauterine hypoxia and birth asphyxia  
221 Respiratory distress syndrome  
222 Hemolytic jaundice and perinatal jaundice  
223 Birth trauma  
224 Other perinatal conditions  
225 Joint disorders and dislocations; trauma-related  
226 Fracture of neck of femur (hip)  
227 Spinal cord injury  
228 Skull and face fractures  
229 Fracture of upper limb  
230 Fracture of lower limb  
231 Other fractures  
232 Sprains and strains  
233 Intracranial injury  
234 Crushing injury or internal injury  
235 Open wounds of head; neck; and trunk  
236 Open wounds of extremities  
237 Complication of device; implant or graft  
238 Complications of surgical procedures or medical care  
239 Superficial injury; contusion  
240 Burns  
241 Poisoning by psychotropic agents  
242 Poisoning by other medications and drugs  
243 Poisoning by nonmedicinal substances  
244 Other injuries and conditions due to external causes  
245 Syncope  
246 Fever of unknown origin  
247 Lymphadenitis  
248 Gangrene  
249 Shock  
250 Nausea and vomiting  
251 Abdominal pain  
252 Malaise and fatigue  
253 Allergic reactions  
254 Rehabilitation care; fitting of prostheses; and adjustment of devices  
255 Administrative/social admission  
256 Medical examination/evaluation  
257 Other aftercare  
258 Other screening for suspected conditions (not mental disorders or infectious disease)  
259 Residual codes; unclassified  
260 E Codes: All (external causes of injury and poisoning)  
2601 E Codes: Cut/pierceb  
2602 E Codes: Drowning/submersion  
2603 E Codes: Fall  
2604 E Codes: Fire/burn  
2605 E Codes: Firearm

2606 E Codes: Machinery  
2607 E Codes: Motor vehicle traffic (MVT)  
2608 E Codes: Pedal cyclist; not MVT  
2609 E Codes: Pedestrian; not MVT  
2610 E Codes: Transport; not MVT  
2611 E Codes: Natural/environment  
2612 E Codes: Overexertion  
2613 E Codes: Poisoning  
2614 E Codes: Struck by; against  
2615 E Codes: Suffocation  
2616 E Codes: Adverse effects of medical care  
2617 E Codes: Adverse effects of medical drugs  
2618 E Codes: Other specified and classifiable  
2619 E Codes: Other specified; NEC  
2620 E Codes: Unspecified  
2621 E Codes: Place of occurrence

# Appendix B1

## Single-Level CCS - Procedures

### CATEGORY LABELS

- 1 Incision and excision of CNS
- 2 Insertion; replacement; or removal of extracranial ventricular shunt
- 3 Laminectomy; excision intervertebral disc
- 4 Diagnostic spinal tap
- 5 Insertion of catheter or spinal stimulator and injection into spinal canal
- 6 Decompression peripheral nerve
- 7 Other diagnostic nervous system procedures
- 8 Other non-OR or closed therapeutic nervous system procedures
- 9 Other OR therapeutic nervous system procedures
- 10 Thyroidectomy; partial or complete
- 11 Diagnostic endocrine procedures
- 12 Other therapeutic endocrine procedures
- 13 Corneal transplant
- 14 Glaucoma procedures
- 15 Lens and cataract procedures
- 16 Repair of retinal tear; detachment
- 17 Destruction of lesion of retina and choroid
- 18 Diagnostic procedures on eye
- 19 Other therapeutic procedures on eyelids; conjunctiva; cornea
- 20 Other intraocular therapeutic procedures
- 21 Other extraocular muscle and orbit therapeutic procedures
- 22 Tympanoplasty
- 23 Myringotomy
- 24 Mastoidectomy
- 25 Diagnostic procedures on ear
- 26 Other therapeutic ear procedures
- 27 Control of epistaxis
- 28 Plastic procedures on nose
- 29 Dental procedures
- 30 Tonsillectomy and/or adenoidectomy
- 31 Diagnostic procedures on nose; mouth and pharynx
- 32 Other non-OR therapeutic procedures on nose; mouth and pharynx
- 33 Other OR therapeutic procedures on nose; mouth and pharynx
- 34 Tracheostomy; temporary and permanent
- 35 Tracheoscopy and laryngoscopy with biopsy
- 36 Lobectomy or pneumonectomy
- 37 Diagnostic bronchoscopy and biopsy of bronchus
- 38 Other diagnostic procedures on lung and bronchus
- 39 Incision of pleura; thoracentesis; chest drainage
- 40 Other diagnostic procedures of respiratory tract and mediastinum
- 41 Other non-OR therapeutic procedures on respiratory system
- 42 Other OR therapeutic procedures on respiratory system and mediastinum
- 43 Heart valve procedures
- 44 Coronary artery bypass graft (CABG)
- 45 Percutaneous transluminal coronary angioplasty (PTCA)
- 46 Coronary thrombolysis
- 47 Diagnostic cardiac catheterization; coronary arteriography
- 48 Insertion; revision; replacement; removal of cardiac pacemaker or cardioverter/defibrillator
- 49 Other OR heart procedures

50 Extracorporeal circulation auxiliary to open heart procedures  
51 Endarterectomy; vessel of head and neck  
52 Aortic resection; replacement or anastomosis  
53 Varicose vein stripping; lower limb  
54 Other vascular catheterization; not heart  
55 Peripheral vascular bypass  
56 Other vascular bypass and shunt; not heart  
57 Creation; revision and removal of arteriovenous fistula or vessel-to-vessel cannula for dialysis  
58 Hemodialysis  
59 Other OR procedures on vessels of head and neck  
60 Embolectomy and endarterectomy of lower limbs  
61 Other OR procedures on vessels other than head and neck  
62 Other diagnostic cardiovascular procedures  
63 Other non-OR therapeutic cardiovascular procedures  
64 Bone marrow transplant  
65 Bone marrow biopsy  
66 Procedures on spleen  
67 Other therapeutic procedures; hemic and lymphatic system  
68 Injection or ligation of esophageal varices  
69 Esophageal dilatation  
70 Upper gastrointestinal endoscopy; biopsy  
71 Gastrostomy; temporary and permanent  
72 Colostomy; temporary and permanent  
73 Ileostomy and other enterostomy  
74 Gastrectomy; partial and total  
75 Small bowel resection  
76 Colonoscopy and biopsy  
77 Proctoscopy and anorectal biopsy  
78 Colorectal resection  
79 Local excision of large intestine lesion (not endoscopic)  
80 Appendectomy  
81 Hemorrhoid procedures  
82 Endoscopic retrograde cannulation of pancreas (ERCP)  
83 Biopsy of liver  
84 Cholecystectomy and common duct exploration  
85 Inguinal and femoral hernia repair  
86 Other hernia repair  
87 Laparoscopy (GI only)  
88 Abdominal paracentesis  
89 Exploratory laparotomy  
90 Excision; lysis peritoneal adhesions  
91 Peritoneal dialysis  
92 Other bowel diagnostic procedures  
93 Other non-OR upper GI therapeutic procedures  
94 Other OR upper GI therapeutic procedures  
95 Other non-OR lower GI therapeutic procedures  
96 Other OR lower GI therapeutic procedures  
97 Other gastrointestinal diagnostic procedures  
98 Other non-OR gastrointestinal therapeutic procedures  
99 Other OR gastrointestinal therapeutic procedures  
100 Endoscopy and endoscopic biopsy of the urinary tract  
101 Transurethral excision; drainage; or removal urinary obstruction  
102 Ureteral catheterization  
103 Nephrotomy and nephrostomy  
104 Nephrectomy; partial or complete

105 Kidney transplant  
106 Genitourinary incontinence procedures  
107 Extracorporeal lithotripsy; urinary  
108 Indwelling catheter  
109 Procedures on the urethra  
110 Other diagnostic procedures of urinary tract  
111 Other non-OR therapeutic procedures of urinary tract  
112 Other OR therapeutic procedures of urinary tract  
113 Transurethral resection of prostate (TURP)  
114 Open prostatectomy  
115 Circumcision  
116 Diagnostic procedures; male genital  
117 Other non-OR therapeutic procedures; male genital  
118 Other OR therapeutic procedures; male genital  
119 Oophorectomy; unilateral and bilateral  
120 Other operations on ovary  
121 Ligation or occlusion of fallopian tubes  
122 Removal of ectopic pregnancy  
123 Other operations on fallopian tubes  
124 Hysterectomy; abdominal and vaginal  
125 Other excision of cervix and uterus  
126 Abortion (termination of pregnancy)  
127 Dilatation and curettage (D&C); aspiration after delivery or abortion  
128 Diagnostic dilatation and curettage (D&C)  
129 Repair of cystocele and rectocele; obliteration of vaginal vault  
130 Other diagnostic procedures; female organs  
131 Other non-OR therapeutic procedures; female organs  
132 Other OR therapeutic procedures; female organs  
133 Episiotomy  
134 Cesarean section  
135 Forceps; vacuum; and breech delivery  
136 Artificial rupture of membranes to assist delivery  
137 Other procedures to assist delivery  
138 Diagnostic amniocentesis  
139 Fetal monitoring  
140 Repair of current obstetric laceration  
141 Other therapeutic obstetrical procedures  
142 Partial excision bone  
143 Bunionectomy or repair of toe deformities  
144 Treatment; facial fracture or dislocation  
145 Treatment; fracture or dislocation of radius and ulna  
146 Treatment; fracture or dislocation of hip and femur  
147 Treatment; fracture or dislocation of lower extremity (other than hip or femur)  
148 Other fracture and dislocation procedure  
149 Arthroscopy  
150 Division of joint capsule; ligament or cartilage  
151 Excision of semilunar cartilage of knee  
152 Arthroplasty knee  
153 Hip replacement; total and partial  
154 Arthroplasty other than hip or knee  
155 Arthrocentesis  
156 Injections and aspirations of muscles; tendons; bursa; joints and soft tissue  
157 Amputation of lower extremity  
158 Spinal fusion  
159 Other diagnostic procedures on musculoskeletal system  
160 Other therapeutic procedures on muscles and tendons

161 Other OR therapeutic procedures on bone  
162 Other OR therapeutic procedures on joints  
163 Other non-OR therapeutic procedures on musculoskeletal system  
164 Other OR therapeutic procedures on musculoskeletal system  
165 Breast biopsy and other diagnostic procedures on breast  
166 Lumpectomy; quadrantectomy of breast  
167 Mastectomy  
168 Incision and drainage; skin and subcutaneous tissue  
169 Debridement of wound; infection or burn  
170 Excision of skin lesion  
171 Suture of skin and subcutaneous tissue  
172 Skin graft  
173 Other diagnostic procedures on skin and subcutaneous tissue  
174 Other non-OR therapeutic procedures on skin and breast  
175 Other OR therapeutic procedures on skin and breast  
176 Other organ transplantation  
177 Computerized axial tomography (CT) scan head  
178 CT scan chest  
179 CT scan abdomen  
180 Other CT scan  
181 Myelogram  
182 Mammography  
183 Routine chest X-ray  
184 Intraoperative cholangiogram  
185 Upper gastrointestinal X-ray  
186 Lower gastrointestinal X-ray  
187 Intravenous pyelogram  
188 Cerebral arteriogram  
189 Contrast aortogram  
190 Contrast arteriogram of femoral and lower extremity arteries  
191 Arterio- or venogram (not heart and head)  
192 Diagnostic ultrasound of head and neck  
193 Diagnostic ultrasound of heart (echocardiogram)  
194 Diagnostic ultrasound of gastrointestinal tract  
195 Diagnostic ultrasound of urinary tract  
196 Diagnostic ultrasound of abdomen or retroperitoneum  
197 Other diagnostic ultrasound  
198 Magnetic resonance imaging  
199 Electroencephalogram (EEG)  
200 Nonoperative urinary system measurements  
201 Cardiac stress tests  
202 Electrocardiogram  
203 Electrographic cardiac monitoring  
204 Swan-Ganz catheterization for monitoring  
205 Arterial blood gases  
206 Microscopic examination (bacterial smear; culture; toxicology)  
207 Radioisotope bone scan  
208 Radioisotope pulmonary scan  
209 Radioisotope scan and function studies  
210 Other radioisotope scan  
211 Therapeutic radiology for cancer treatment  
212 Diagnostic physical therapy  
213 Physical therapy exercises; manipulation; and other procedures  
214 Traction; splints; and other wound care  
215 Other physical therapy and rehabilitation  
216 Respiratory intubation and mechanical ventilation

- 217 Other respiratory therapy
- 218 Psychological and psychiatric evaluation and therapy
- 219 Alcohol and drug rehabilitation/detoxification
- 220 Ophthalmologic and otologic diagnosis and treatment
- 221 Nasogastric tube
- 222 Blood transfusion
- 223 Enteral and parenteral nutrition
- 224 Cancer chemotherapy
- 225 Conversion of cardiac rhythm
- 226 Other diagnostic radiology and related techniques
- 227 Other diagnostic procedures (interview; evaluation; consultation)
- 228 Prophylactic vaccinations and inoculations
- 229 Nonoperative removal of foreign body
- 230 Extracorporeal shock wave, other than urinary
- 231 Other therapeutic procedures

# Appendix C1

## Multi-Level CCS – Diagnoses

### MULTI-LEVEL

CATEGORY LABELS [Single-Level CCS Diagnosis Category]

- 1 Infectious and parasitic diseases
  - 1.1 Bacterial infection
    - 1.1.1 Tuberculosis [1]
    - 1.1.2 Septicemia (except in labor) [2]
      - 1.1.2.1 Streptococcal septicemia
      - 1.1.2.2 Staphylococcal septicemia
      - 1.1.2.3 E Coli septicemia
      - 1.1.2.4 Other gram negative septicemia
      - 1.1.2.5 Other specified septicemia
      - 1.1.2.6 Unspecified septicemia
    - 1.1.3 Sexually transmitted infections (not HIV or hepatitis) [9]
    - 1.1.4 Other bacterial infections [3]
  - 1.2 Mycoses [4]
    - 1.2.1 Candidiasis of the mouth (thrush)
    - 1.2.2 Other mycoses
  - 1.3 Viral infection
    - 1.3.1 HIV infection [5]
    - 1.3.2 Hepatitis [6]
    - 1.3.3 Other viral infections [7]
      - 1.3.3.1 Herpes zoster infection
      - 1.3.3.2 Herpes simplex infection
      - 1.3.3.3 Other and unspecified viral infection
  - 1.4 Other infections; including parasitic [8]
  - 1.5 Immunizations and screening for infectious disease [10]
- 2 Neoplasms
  - 2.1 Colorectal cancer
    - 2.1.1 Cancer of colon [14]
    - 2.1.2 Cancer of rectum and anus [15]
  - 2.2 Other gastrointestinal cancer
    - 2.2.1 Cancer of esophagus [12]
    - 2.2.2 Cancer of stomach [13]
    - 2.2.3 Cancer of liver and intrahepatic bile duct [16]
    - 2.2.4 Cancer of pancreas [17]
    - 2.2.5 Cancer of other GI organs; peritoneum [18]
  - 2.3 Cancer of bronchus; lung [19]
  - 2.4 Cancer of skin
    - 2.4.1 Melanomas of skin [22]
    - 2.4.2 Other non-epithelial cancer of skin [23]
  - 2.5 Cancer of breast [24]
  - 2.6 Cancer of uterus and cervix
    - 2.6.1 Cancer of uterus [25]
    - 2.6.2 Cancer of cervix [26]
  - 2.7 Cancer of ovary and other female genital organs
    - 2.7.1 Cancer of ovary [27]
    - 2.7.2 Cancer of other female genital organs [28]
  - 2.8 Cancer of male genital organs
    - 2.8.1 Cancer of prostate [29]
    - 2.8.2 Cancer of testis [30]

- 2.8.3 Cancer of other male genital organs [31]
- 2.9 Cancer of urinary organs
  - 2.9.1 Cancer of bladder [32]
  - 2.9.2 Cancer of kidney and renal pelvis [33]
  - 2.9.3 Cancer of other urinary organs [34]
- 2.1 Cancer of lymphatic and hematopoietic tissue
  - 2.10.1 Hodgkins disease [37]
  - 2.10.2 Non-Hodgkins lymphoma [38]
  - 2.10.3 Leukemias [39]
  - 2.10.4 Multiple myeloma [40]
- 2.11 Cancer; other primary
  - 2.11.1 Cancer of head and neck [11]
  - 2.11.2 Cancer; other respiratory and intrathoracic [20]
  - 2.11.3 Cancer of bone and connective tissue [21]
  - 2.11.4 Cancer of brain and nervous system [35]
  - 2.11.5 Cancer of thyroid [36]
  - 2.11.6 Cancer; other and unspecified primary [41]
- 2.12 Secondary malignancies [42]
  - 2.12.1 Secondary malignancy of lymph nodes
  - 2.12.2 Secondary malignancy of lung
  - 2.12.3 Secondary malignancy of liver
  - 2.12.4 Secondary malignancy of brain/spine
  - 2.12.5 Secondary malignancy of bone
  - 2.12.6 Other secondary malignancy
- 2.13 Malignant neoplasm without specification of site [43]
- 2.14 Neoplasms of unspecified nature or uncertain behavior [44]
- 2.15 Maintenance chemotherapy; radiotherapy [45]
  - 2.15.1 Radiotherapy
  - 2.15.2 Chemotherapy
- 2.16 Benign neoplasms
  - 2.16.1 Benign neoplasm of uterus [46]
  - 2.16.2 Other and unspecified benign neoplasm [47]
    - 2.16.2.1 Benign neoplasm of ovary
    - 2.16.2.2 Benign neoplasm of colon
    - 2.16.2.3 Benign neoplasm of the thyroid
    - 2.16.2.4 Benign neoplasm of cerebral meninges
    - 2.16.2.5 Other and unspecified benign neoplasms
- 3 Endocrine; nutritional; and metabolic diseases and immunity disorders
  - 3.1 Thyroid disorders [48]
    - 3.1.1 Thyrotoxicosis with or without goiter
    - 3.1.2 Other thyroid disorders
  - 3.2 Diabetes mellitus without complication [49]
  - 3.3 Diabetes mellitus with complications [50]
    - 3.3.1 Diabetes with ketoacidosis or uncontrolled diabetes
    - 3.3.2 Diabetes with renal manifestations
    - 3.3.3 Diabetes with ophthalmic manifestations
    - 3.3.4 Diabetes with neurological manifestations
    - 3.3.5 Diabetes with circulatory manifestations
    - 3.3.6 Diabetes with unspecified complications
    - 3.3.7 Diabetes with other manifestations
  - 3.4 Other endocrine disorders [51]
  - 3.5 Nutritional deficiencies [52]
    - 3.5.1 Unspecified protein-calorie malnutrition
    - 3.5.2 Other malnutrition
  - 3.6 Disorders of lipid metabolism [53]
  - 3.7 Gout and other crystal arthropathies [54]

- 3.8 Fluid and electrolyte disorders [55]
  - 3.8.1 Hyposmolality
  - 3.8.2 Hypovolemia
  - 3.8.3 Hyperpotassemia
  - 3.8.4 Hypopotassemia
  - 3.8.5 Other fluid and electrolyte disorders
- 3.9 Cystic fibrosis [56]
- 3.1 Immunity disorders [57]
- 3.11 Other nutritional; endocrine; and metabolic disorders [58]
  - 3.11.1 Disorders of mineral metabolism
  - 3.11.2 Obesity
  - 3.11.3 Other and unspecified metabolic; nutritional; and endocrine disorders
- 4 Diseases of the blood and blood-forming organs
  - 4.1 Anemia
    - 4.1.1 Acute posthemorrhagic anemia [60]
    - 4.1.2 Sickle cell anemia [61]
    - 4.1.3 Deficiency and other anemia [59]
      - 4.1.3.1 Iron deficiency anemia
      - 4.1.3.2 Other deficiency anemia
      - 4.1.3.3 Aplastic anemia
      - 4.1.3.4 Chronic blood loss anemia
      - 4.1.3.5 Acquired hemolytic anemia
      - 4.1.3.6 Other specified anemia
      - 4.1.3.7 Anemia; unspecified
  - 4.2 Coagulation and hemorrhagic disorders [62]
    - 4.2.1 Coagulation defects
    - 4.2.2 Thrombocytopenia
    - 4.2.3 Other coagulation and hemorrhagic disorders
  - 4.3 Diseases of white blood cells [63]
  - 4.4 Other hematologic conditions [64]
- 5 Mental Illness**
  - 5.1 Adjustment disorders [650]**
  - 5.2 Anxiety disorders [651]**
  - 5.3 Attention deficit conduct and disruptive behavior disorders [652]**
    - 5.3.1 Conduct disorder [6521]**
    - 5.3.2 Oppositional defiant disorder [6522]**
    - 5.3.3 Attention deficit disorder and Attention deficit hyperactivity disorder [6523]**
  - 5.4 Delirium dementia and amnestic and other cognitive disorders [653]**
  - 5.5 Developmental disorders [654]**
    - 5.5.1 Communication disorders [6541]**
    - 5.5.2 Developmental disabilities [6542]**
    - 5.5.3 Intellectual disabilities [6543]**
    - 5.5.4 Learning disorders [6544]**
    - 5.5.5 Motor skill disorders [6545]**
  - 5.6 Disorders usually diagnosed in infancy childhood or adolescence [655]**
    - 5.6.1 Elimination disorders [6551]**
    - 5.6.2 Other disorders of infancy childhood or adolescence [6552]**
    - 5.6.3 Pervasive developmental disorders [6553]**
    - 5.6.4 Tic disorders [6554]**
  - 5.7 Impulse control disorders not elsewhere classified [656]**
  - 5.8 Mood disorders [657]**
    - 5.8.1 Bipolar disorders [6571]**
    - 5.8.2 Depressive disorders [6572]**
  - 5.9 Personality disorders [658]**
  - 5.10 Schizophrenia and other psychotic disorders [659]**
  - 5.11 Alcohol-related disorders [660]**

- 5.12 Substance-related disorders [661]**
- 5.13 Suicide and intentional self-inflicted injury [662]**
- 5.14 Screening and history of mental health and substance abuse codes [663]**
  - 5.14.1 Codes related to mental health disorders [6631]**
  - 5.14.2 Codes related to substance-related disorders [6632]**
- 5.15 Miscellaneous mental disorders [670]**
  - 5.15.1 Dissociative disorders [6701]**
  - 5.15.2 Eating disorders [6702]**
  - 5.15.3 Factitious disorders [6703]**
  - 5.15.4 Psychogenic disorders [6704]**
  - 5.15.5 Sexual and gender identity disorders [6705]**
  - 5.15.6 Sleep disorders [6706]**
  - 5.15.7 Somatoform disorders [6707]**
  - 5.15.8 Mental disorders due to general medical conditions not elsewhere classified [6708]**
  - 5.15.9 Other miscellaneous mental conditions [6709]**
- 6 Diseases of the nervous system and sense organs**
  - 6.1 Central nervous system infection**
    - 6.1.1 Meningitis (except that caused by TB or STD) [76]
    - 6.1.2 Encephalitis (except that caused by TB or STD) [77]
    - 6.1.3 Other CNS infection and poliomyelitis [78]
  - 6.2 Hereditary and degenerative nervous system conditions**
    - 6.2.1 Parkinsons disease [79]
    - 6.2.2 Multiple sclerosis [80]
    - 6.2.3 Other hereditary and degenerative nervous system conditions [81]
      - 6.2.3.1 Disorders of the autonomic nervous system
      - 6.2.3.2 Other and unspecified hereditary and degenerative nervous conditions
  - 6.3 Paralysis [82]**
    - 6.3.1 Hemiplegia
    - 6.3.2 Other paralysis
  - 6.4 Epilepsy; convulsions [83]**
    - 6.4.1 Epilepsy
    - 6.4.2 Convulsions
  - 6.5 Headache; including migraine [84]**
    - 6.5.1 Migraine
    - 6.5.2 Other headache
  - 6.6 Coma; stupor; and brain damage [85]**
  - 6.7 Eye disorders**
    - 6.7.1 Cataract [86]
    - 6.7.2 Retinal detachments; defects; vascular occlusion; and retinopathy [87]
      - 6.7.2.1 Retinal detachment with defect
      - 6.7.2.2 Other retinal detachment or defect
      - 6.7.2.3 Other retinal disorders
    - 6.7.3 Glaucoma [88]
    - 6.7.4 Blindness and vision defects [89]
    - 6.7.5 Inflammation; infection of eye (except that caused by TB or STD) [90]
    - 6.7.6 Other eye disorders [91]
  - 6.8 Ear conditions**
    - 6.8.1 Otitis media and related conditions [92]
      - 6.8.1.1 Suppurative and unspecified otitis media
      - 6.8.1.2 Other otitis media and related conditions
    - 6.8.2 Conditions associated with dizziness or vertigo [93]
    - 6.8.3 Other ear and sense organ disorders [94]
  - 6.9 Other nervous system disorders [95]**
    - 6.9.1 Disorders of the peripheral nervous system
    - 6.9.2 Other central nervous system disorders
    - 6.9.3 Other nervous system symptoms and disorders

- 7 Diseases of the circulatory system
  - 7.1 Hypertension
    - 7.1.1 Essential hypertension [98]
    - 7.1.2 Hypertension with complications and secondary hypertension [99]
      - 7.1.2.1 Hypertensive heart and/or renal disease
      - 7.1.2.2 Other hypertensive complications
  - 7.2 Diseases of the heart
    - 7.2.1 Heart valve disorders [96]
      - 7.2.1.1 Chronic rheumatic disease of the heart valves
      - 7.2.1.2 Nonrheumatic mitral valve disorders
      - 7.2.1.3 Nonrheumatic aortic valve disorders
      - 7.2.1.4 Other heart valve disorders
    - 7.2.2 Peri-; endo-; and myocarditis; cardiomyopathy (except that caused by TB or STD) [97]
      - 7.2.2.1 Cardiomyopathy
      - 7.2.2.2 Other peri-; endo-; and myocarditis
    - 7.2.3 Acute myocardial infarction [100]
    - 7.2.4 Coronary atherosclerosis and other heart disease [101]
      - 7.2.4.1 Angina pectoris
      - 7.2.4.2 Unstable angina (intermediate coronary syndrome)
      - 7.2.4.3 Other acute and subacute forms of ischemic heart disease
      - 7.2.4.4 Coronary atherosclerosis
      - 7.2.4.5 Other forms of chronic heart disease
    - 7.2.5 Nonspecific chest pain [102]
    - 7.2.6 Pulmonary heart disease [103]
    - 7.2.7 Other and ill-defined heart disease [104]
    - 7.2.8 Conduction disorders [105]
      - 7.2.8.1 Atrioventricular block
      - 7.2.8.2 Bundle branch block
      - 7.2.8.3 Anomalous atrioventricular excitation
      - 7.2.8.4 Other conduction disorders
    - 7.2.9 Cardiac dysrhythmias [106]
      - 7.2.9.1 Paroxysmal supraventricular tachycardia
      - 7.2.9.2 Paroxysmal ventricular tachycardia
      - 7.2.9.3 Atrial fibrillation
      - 7.2.9.4 Atrial flutter
      - 7.2.9.5 Premature beats
      - 7.2.9.6 Sinoatrial node dysfunction
      - 7.2.9.7 Other cardiac dysrhythmias
    - 7.2.10 Cardiac arrest and ventricular fibrillation [107]
    - 7.2.11 Congestive heart failure; nonhypertensive [108]
      - 7.2.11.1 Congestive heart failure
      - 7.2.11.2 Heart failure
  - 7.3 Cerebrovascular disease
    - 7.3.1 Acute cerebrovascular disease [109]
      - 7.3.1.1 Intracranial hemorrhage
      - 7.3.1.2 Occlusion of cerebral arteries
      - 7.3.1.3 Acute but ill-defined cerebrovascular accident
    - 7.3.2 Occlusion or stenosis of precerebral arteries [110]
    - 7.3.3 Other and ill-defined cerebrovascular disease [111]
    - 7.3.4 Transient cerebral ischemia [112]
    - 7.3.5 Late effects of cerebrovascular disease [113]
  - 7.4 Diseases of arteries; arterioles; and capillaries
    - 7.4.1 Peripheral and visceral atherosclerosis [114]
      - 7.4.1.1 Atherosclerosis of arteries of extremities
      - 7.4.1.2 Peripheral vascular disease unspecified
      - 7.4.1.3 Other peripheral and visceral atherosclerosis

- 7.4.2 Aortic; peripheral; and visceral artery aneurysms [115]
  - 7.4.2.1 Abdominal aortic aneurysm; without rupture
  - 7.4.2.2 Other aneurysm
- 7.4.3 Aortic and peripheral arterial embolism or thrombosis [116]
  - 7.4.3.1 Arterial embolism and thrombosis of lower extremity artery
  - 7.4.3.2 Other arterial embolism and thrombosis
- 7.4.4 Other circulatory disease [117]
  - 7.4.4.1 Hypotension
  - 7.4.4.2 Other and unspecified circulatory disease
- 7.5 Diseases of veins and lymphatics
  - 7.5.1 Phlebitis; thrombophlebitis and thromboembolism [118]
    - 7.5.1.1 Phlebitis and thrombophlebitis
    - 7.5.1.2 Other venous embolism and thrombosis
  - 7.5.2 Varicose veins of lower extremity [119]
  - 7.5.3 Hemorrhoids [120]
  - 7.5.4 Other diseases of veins and lymphatics [121]
- 8 Diseases of the respiratory system
  - 8.1 Respiratory infections
    - 8.1.1 Pneumonia (except that caused by TB or STD) [122]
      - 8.1.1.1 Pneumococcal pneumonia
      - 8.1.1.2 Other bacterial pneumonia
      - 8.1.1.3 Pneumonia; organism unspecified
      - 8.1.1.4 Other pneumonia
    - 8.1.2 Influenza [123]
    - 8.1.3 Acute and chronic tonsillitis [124]
    - 8.1.4 Acute bronchitis [125]
    - 8.1.5 Other upper respiratory infections [126]
      - 8.1.5.1 Acute upper respiratory infections of multiple or unspecified sites
      - 8.1.5.2 Chronic sinusitis
      - 8.1.5.3 Croup
      - 8.1.5.4 Other and unspecified upper respiratory infections
  - 8.2 Chronic obstructive pulmonary disease and bronchiectasis [127]
    - 8.2.1 Emphysema
    - 8.2.2 Chronic airway obstruction; not otherwise specified
    - 8.2.3 Obstructive chronic bronchitis
    - 8.2.4 Other chronic pulmonary disease
  - 8.3 Asthma [128]
    - 8.3.1 Chronic obstructive asthma
      - 8.3.1.1 Chronic obstructive asthma without status asthmaticus or exacerbation
      - 8.3.1.2 Chronic obstructive asthma with status asthmaticus
      - 8.3.1.3 Chronic obstructive asthma with acute exacerbation
    - 8.3.2 Other and unspecified asthma
      - 8.3.2.1 Other asthma without status asthmaticus or exacerbation
      - 8.3.2.2 Other asthma with status asthmaticus
      - 8.3.2.3 Other asthma with acute exacerbation
  - 8.4 Aspiration pneumonitis; food/vomitus [129]
  - 8.5 Pleurisy; pneumothorax; pulmonary collapse [130]
    - 8.5.1 Pleurisy; pleural effusion
    - 8.5.2 Pulmonary collapse; interstitial and compensatory emphysema
    - 8.5.3 Empyema and pneumothorax
  - 8.6 Respiratory failure; insufficiency; arrest (adult) [131]
    - 8.6.1 Respiratory failure
    - 8.6.2 Other respiratory insufficiency
  - 8.7 Lung disease due to external agents [132]
  - 8.8 Other lower respiratory disease [133]
    - 8.8.1 Postinflammatory pulmonary fibrosis

- 8.8.2 Painful respiration
- 8.8.3 Other and unspecified lower respiratory disease
- 8.9 Other upper respiratory disease [134]
- 9 Diseases of the digestive system
- 9.1 Intestinal infection [135]
- 9.2 Disorders of teeth and jaw [136]
- 9.3 Diseases of mouth; excluding dental [137]
- 9.4 Upper gastrointestinal disorders
- 9.4.1 Esophageal disorders [138]
  - 9.4.1.1 Esophagitis
  - 9.4.1.2 Other esophageal disorders
- 9.4.2 Gastroduodenal ulcer (except hemorrhage) [139]
  - 9.4.2.1 Gastric ulcer
  - 9.4.2.2 Duodenal ulcer
  - 9.4.2.3 Peptic ulcer; site unspecified
  - 9.4.2.4 Gastrojejunal ulcer
- 9.4.3 Gastritis and duodenitis [140]
  - 9.4.3.1 Acute gastritis
  - 9.4.3.2 Other specified gastritis
  - 9.4.3.3 Unspecified gastritis and gastroduodenitis
  - 9.4.3.4 Duodenitis
- 9.4.4 Other disorders of stomach and duodenum [141]
- 9.5 Abdominal hernia [143]
  - 9.5.1 Inguinal hernia
    - 9.5.1.1 Inguinal hernia with obstruction or gangrene
    - 9.5.1.2 Inguinal hernia without obstruction or gangrene
  - 9.5.2 Diaphragmatic hernia
  - 9.5.3 Other abdominal hernia
    - 9.5.3.1 Femoral hernia with obstruction/gangrene
    - 9.5.3.2 Femoral hernia without obstruction/gangrene
    - 9.5.3.3 Umbilical hernia with obstruction/gangrene
    - 9.5.3.4 Umbilical hernia without obstruction/gangrene
    - 9.5.3.5 Ventral hernia with obstruction/gangrene
    - 9.5.3.6 Ventral hernia without obstruction/gangrene
    - 9.5.3.7 Incisional hernia with obstruction/gangrene
    - 9.5.3.8 Incisional hernia without obstruction/gangrene
    - 9.5.3.9 Other and unspecified hernia
- 9.6 Lower gastrointestinal disorders
  - 9.6.1 Appendicitis and other appendiceal conditions [142]
    - 9.6.1.1 Acute appendicitis with abscess or peritonitis
    - 9.6.1.2 Acute appendicitis without abscess or peritonitis
    - 9.6.1.3 Acute appendicitis; not otherwise specified
    - 9.6.1.4 Other appendiceal conditions
  - 9.6.2 Regional enteritis and ulcerative colitis [144]
  - 9.6.3 Intestinal obstruction without hernia [145]
    - 9.6.3.1 Paralytic ileus
    - 9.6.3.2 Impaction of intestine
    - 9.6.3.3 Peritoneal or intestinal adhesions
    - 9.6.3.4 Other intestinal obstruction
  - 9.6.4 Diverticulosis and diverticulitis [146]
    - 9.6.4.1 Diverticulosis
    - 9.6.4.2 Diverticulitis
  - 9.6.5 Anal and rectal conditions [147]
  - 9.6.6 Peritonitis and intestinal abscess [148]
- 9.7 Biliary tract disease [149]
  - 9.7.1 Cholelithiasis with acute cholecystitis

- 9.7.2 Cholelithiasis with other cholecystitis
- 9.7.3 Cholelithiasis without mention of cholecystitis
- 9.7.4 Calculus of bile duct
- 9.7.5 Cholecystitis without cholelithiasis
- 9.7.6 Other biliary tract disease
- 9.8 Liver disease
  - 9.8.1 Liver disease; alcohol-related [150]
  - 9.8.2 Other liver diseases [151]
    - 9.8.2.1 Cirrhosis of liver without mention of alcohol
    - 9.8.2.2 Liver abscess and sequelae of chronic liver disease
    - 9.8.2.3 Ascites
    - 9.8.2.4 Other and unspecified liver disorders
- 9.9 Pancreatic disorders (not diabetes) [152]
  - 9.9.1 Acute pancreatitis
  - 9.9.2 Chronic pancreatitis
  - 9.9.3 Other pancreatic disorders
- 9.1 Gastrointestinal hemorrhage [153]
  - 9.10.1 Hemorrhage from gastrointestinal ulcer
  - 9.10.2 Melena
  - 9.10.3 Gastroesophageal laceration syndrome
  - 9.10.4 Other esophageal bleeding
  - 9.10.5 Hemorrhage of rectum and anus
  - 9.10.6 Hematemesis
  - 9.10.7 Hemorrhage of gastrointestinal tract
- 9.11 Noninfectious gastroenteritis [154]
- 9.12 Other gastrointestinal disorders [155]
  - 9.12.1 Constipation
  - 9.12.2 Dysphagia
  - 9.12.3 Other and unspecified gastrointestinal disorders
- 10 Diseases of the genitourinary system
  - 10.1 Diseases of the urinary system
    - 10.1.1 Nephritis; nephrosis; renal sclerosis [156]
    - 10.1.2 Acute and unspecified renal failure [157]
      - 10.1.2.1 Acute renal failure
      - 10.1.2.2 Unspecified renal failure
    - 10.1.3 Chronic renal failure [158]
    - 10.1.4 Urinary tract infections [159]
      - 10.1.4.1 Infections of kidney
      - 10.1.4.2 Cystitis and urethritis
      - 10.1.4.3 Urinary tract infection; site not specified
    - 10.1.5 Calculus of urinary tract [160]
      - 10.1.5.1 Calculus of kidney
      - 10.1.5.2 Calculus of ureter
      - 10.1.5.3 Other and unspecified urinary calculus
    - 10.1.6 Other diseases of kidney and ureters [161]
      - 10.1.6.1 Hydronephrosis
      - 10.1.6.2 Other and unspecified diseases of kidney and ureters
    - 10.1.7 Other diseases of bladder and urethra [162]
      - 10.1.7.1 Bladder neck obstruction
      - 10.1.7.2 Other and unspecified diseases of bladder and urethra
    - 10.1.8 Genitourinary symptoms and ill-defined conditions [163]
      - 10.1.8.1 Hematuria
      - 10.1.8.2 Retention of urine
      - 10.1.8.3 Other and unspecified genitourinary symptoms
  - 10.2 Diseases of male genital organs
    - 10.2.1 Hyperplasia of prostate [164]

- 10.2.2 Inflammatory conditions of male genital organs [165]
- 10.2.3 Other male genital disorders [166]
- 10.3 Diseases of female genital organs
  - 10.3.1 Nonmalignant breast conditions [167]
  - 10.3.2 Inflammatory diseases of female pelvic organs [168]
    - 10.3.2.1 Pelvic peritoneal adhesions
    - 10.3.2.2 Cervicitis and endocervicitis
    - 10.3.2.3 Pelvic inflammatory disease (PID)
    - 10.3.2.4 Other inflammatory diseases of female pelvic organs
  - 10.3.3 Endometriosis [169]
  - 10.3.4 Prolapse of female genital organs [170]
  - 10.3.5 Menstrual disorders [171]
  - 10.3.6 Ovarian cyst [172]
  - 10.3.7 Menopausal disorders [173]
  - 10.3.8 Female infertility [174]
  - 10.3.9 Other female genital disorders [175]
    - 10.3.9.1 Female genital pain and other symptoms
    - 10.3.9.2 Other and unspecified female genital disorders
- 11 Complications of pregnancy; childbirth; and the puerperium
  - 11.1 Contraceptive and procreative management [176]
    - 11.1.1 Sterilization
    - 11.1.2 Other contraceptive and procreation management
  - 11.2 Abortion-related disorders
    - 11.2.1 Spontaneous abortion [177]
    - 11.2.2 Induced abortion [178]
    - 11.2.3 Postabortion complications [179]
  - 11.3 Complications mainly related to pregnancy
    - 11.3.1 Ectopic pregnancy [180]
    - 11.3.2 Hemorrhage during pregnancy; abruptio placenta; placenta previa [182]
      - 11.3.2.1 Placenta previa
      - 11.3.2.2 Abruptio placenta
      - 11.3.2.3 Other hemorrhage during pregnancy; childbirth and the puerperium
    - 11.3.3 Hypertension complicating pregnancy; childbirth and the puerperium [183]
      - 11.3.3.1 Preeclampsia and eclampsia
      - 11.3.3.2 Other hypertension in pregnancy
    - 11.3.4 Early or threatened labor [184]
      - 11.3.4.1 Threatened premature labor
      - 11.3.4.2 Early onset of delivery
      - 11.3.4.3 Other early or threatened labor
    - 11.3.5 Prolonged pregnancy [185]
    - 11.3.6 Diabetes or abnormal glucose tolerance complicating pregnancy; childbirth; or the puerperium [186]
    - 11.3.7 Other complications of pregnancy [181]
      - 11.3.7.1 Infections of genitourinary tract during pregnancy
      - 11.3.7.2 Anemia during pregnancy
      - 11.3.7.3 Mental disorders during pregnancy
      - 11.3.7.4 Missed abortion
      - 11.3.7.5 Hyperemesis gravidarum
      - 11.3.7.6 Infectious and parasitic complications in mother affecting pregnancy
      - 11.3.7.7 Other and unspecified complications of pregnancy
  - 11.4 Indications for care in pregnancy; labor; and delivery
    - 11.4.1 Malposition; malpresentation [187]
      - 11.4.1.1 Breech presentation
      - 11.4.1.2 Other malposition; malpresentation
    - 11.4.2 Fetopelvic disproportion; obstruction [188]
      - 11.4.2.1 Fetopelvic disproportion

- 11.4.2.2 Other disproportion or obstruction
- 11.4.3 Previous cesarean section [189]
- 11.4.4 Fetal distress and abnormal forces of labor [190]
  - 11.4.4.1 Fetal distress
  - 11.4.4.2 Uterine inertia
  - 11.4.4.3 Precipitate labor
  - 11.4.4.4 Other abnormal forces of labor
- 11.4.5 Polyhydramnios and other problems of amniotic cavity [191]
  - 11.4.5.1 Premature rupture of membranes
  - 11.4.5.2 Infection of amniotic cavity
  - 11.4.5.3 Other problems of amniotic cavity
- 11.5 Complications during labor
  - 11.5.1 Umbilical cord complication [192]
    - 11.5.1.1 Cord around neck with compression
    - 11.5.1.2 Other and unspecified cord entanglement with or without compression
    - 11.5.1.3 Other umbilical cord complications
  - 11.5.2 Trauma to perineum and vulva [193]
    - 11.5.2.1 First degree perineal laceration
    - 11.5.2.2 Second degree perineal laceration
    - 11.5.2.3 Third degree perineal laceration
    - 11.5.2.4 Fourth degree perineal laceration
    - 11.5.2.5 Other perineal laceration and trauma
  - 11.5.3 Forceps delivery [194]
- 11.6 Other complications of birth; puerperium affecting management of mother [195]
  - 11.6.1 Postpartum hemorrhage
  - 11.6.2 Complications of the puerperium
  - 11.6.3 Cervical incompetence
  - 11.6.4 Rhesus isoimmunization
  - 11.6.5 Intrauterine death
  - 11.6.6 Failed induction
  - 11.6.7 Other obstetrical trauma
  - 11.6.8 Other and unspecified complications of birth; puerperium affecting management of mother
- 11.7 Normal pregnancy and/or delivery [196]
  - 11.7.1 Normal delivery
  - 11.7.2 Multiple gestation
  - 11.7.3 Outcome of delivery (V codes)
- 12 Diseases of the skin and subcutaneous tissue
  - 12.1 Skin and subcutaneous tissue infections [197]
    - 12.1.1 Cellulitis and abscess
      - 12.1.1.1 Cellulitis and abscess of fingers and toes
      - 12.1.1.2 Cellulitis and abscess of face
      - 12.1.1.3 Cellulitis and abscess of arm
      - 12.1.1.4 Cellulitis and abscess of hand
      - 12.1.1.5 Cellulitis and abscess of leg
      - 12.1.1.6 Cellulitis and abscess of foot
      - 12.1.1.7 Other cellulitis and abscess
    - 12.1.2 Other skin and subcutaneous infections
  - 12.2 Other inflammatory condition of skin [198]
  - 12.3 Chronic ulcer of skin [199]
    - 12.3.1 Decubitus ulcer
    - 12.3.2 Chronic ulcer of leg or foot
    - 12.3.3 Other chronic skin ulcer
  - 12.4 Other skin disorders [200]
- 13 Diseases of the musculoskeletal system and connective tissue
  - 13.1 Infective arthritis and osteomyelitis (except that caused by TB or STD) [201]
  - 13.2 Non-traumatic joint disorders

- 13.2.1 Rheumatoid arthritis and related disease [202]
- 13.2.2 Osteoarthritis [203]
  - 13.2.2.1 Osteoarthritis; localized
  - 13.2.2.2 Osteoarthritis; generalized and unspecified
- 13.2.3 Other non-traumatic joint disorders [204]
- 13.3 Spondylosis; intervertebral disc disorders; other back problems [205]
  - 13.3.1 Spondylosis and allied disorders
  - 13.3.2 Intervertebral disc disorders
  - 13.3.3 Other back problems
    - 13.3.3.1 Cervical radiculitis
    - 13.3.3.2 Spinal stenosis; lumbar region
    - 13.3.3.3 Lumbago
    - 13.3.3.4 Sciatica
    - 13.3.3.5 Thoracic or lumbosacral neuritis or radiculitis; unspecified
    - 13.3.3.6 Backache; unspecified
    - 13.3.3.7 Other back pain and disorders
- 13.4 Osteoporosis [206]
- 13.5 Pathological fracture [207]
- 13.6 Acquired deformities
  - 13.6.1 Acquired foot deformities [208]
  - 13.6.2 Other acquired deformities [209]
- 13.7 Systemic lupus erythematosus and connective tissue disorders [210]
- 13.8 Other connective tissue disease [211]
- 13.9 Other bone disease and musculoskeletal deformities [212]
- 14 Congenital anomalies
  - 14.1 Cardiac and circulatory congenital anomalies [213.]
    - 14.1.1 Transposition of great vessels
    - 14.1.2 Tetralogy of Fallot
    - 14.1.3 Ventricular septal defect
    - 14.1.4 Atrial septal defect
    - 14.1.5 Endocardial cushion defects
    - 14.1.6 Pulmonary valve atresia and stenosis
    - 14.1.7 Aortic valve stenosis
    - 14.1.8 Patent ductus arteriosus
    - 14.1.9 Coarctation of aorta
    - 14.1.10 Pulmonary artery anomalies
    - 14.1.11 Cerebrovascular anomalies
    - 14.1.12 Double outlet right ventricle
    - 14.1.13 Common ventricle
    - 14.1.14 Congenital insufficiency of aortic valve
    - 14.1.15 Hypoplastic left heart syndrome
    - 14.1.16 Gastrointestinal vessel congenital anomaly
    - 14.1.17 Persistent fetal circulation
    - 14.1.18 Other anomalies of bulbus cordis and cardiac septal closure
    - 14.1.19 Other heart valve congenital anomalies
    - 14.1.20 Other congenital anomalies of the heart
    - 14.1.21 Other congenital anomalies of aorta
    - 14.1.22 Other circulatory congenital anomalies
  - 14.2 Digestive congenital anomalies [214.]
    - 14.2.1 Esophageal atresia/tracheoesophageal fistula
    - 14.2.2 Pyloric stenosis
    - 14.2.3 Rectal and large intestine atresia/stenosis
    - 14.2.4 Hirshsprungs disease
    - 14.2.5 Meckels diverticulum
    - 14.2.6 Atresia and stenosis of small intestine
    - 14.2.7 Anomalies of intestinal fixation

- 14.2.8 Other upper gastrointestinal congenital anomalies
- 14.2.9 Other lower gastrointestinal congenital anomalies
- 14.3 Genitourinary congenital anomalies [215.]
  - 14.3.1 Undescended testicle
  - 14.3.2 Hypospadias and epispadias
  - 14.3.3 Obstructive genitourinary defect
  - 14.3.4 Polycystic kidney
  - 14.3.5 Other cystic kidney disease
  - 14.3.6 Embryonic cyst of fallopian tubes and broad ligaments
  - 14.3.7 Other congenital anomalies of genitalia
  - 14.3.8 Other congenital anomalies of urinary system
- 14.4 Nervous system congenital anomalies [216.]
  - 14.4.1 Spina bifida
  - 14.4.2 Congenital hydrocephalus
  - 14.4.3 Other spinal cord congenital anomalies
  - 14.4.4 Microcephalus
  - 14.4.5 Other nervous system congenital anomalies
- 14.5 Other congenital anomalies [217.]
  - 14.5.1 Cleft palate without cleft lip
  - 14.5.2 Cleft lip with or without cleft palate
  - 14.5.3 Congenital anomalies of the eye
  - 14.5.4 Microtia (incomplete development of external ear)
  - 14.5.5 Branchial cleft cyst or fistula
  - 14.5.6 Other face and neck congenital anomalies
  - 14.5.7 Congenital anomalies of larynx trachea and bronchus
  - 14.5.8 Other respiratory congenital anomalies
  - 14.5.9 Foot deformities
  - 14.5.10 Congenital hip dislocation
  - 14.5.11 Polydactyly (extra digits) and syndactyly (webbing between digits)
  - 14.5.12 Congenital absence of lower limb
  - 14.5.13 Congenital hip deformity
  - 14.5.14 Other congenital anomalies of limbs
  - 14.5.15 Congenital anomalies of skull and facial bones
  - 14.5.16 Lumbosacral spondylolysis
  - 14.5.17 Spondylolisthesis
  - 14.5.18 Other spinal congenital anomalies
  - 14.5.19 Osteogenesis imperfecta
  - 14.5.20 Congenital anomalies of the diaphragm
  - 14.5.21 Congenital anomalies of abdominal wall
  - 14.5.22 Congenital pigmentary anomalies of skin
  - 14.5.23 Other congenital anomalies of integument
  - 14.5.24 Pectus excavatum
  - 14.5.25 Downs Syndrome
  - 14.5.26 All other congenital anomalies
- 15 Certain conditions originating in the perinatal period
  - 15.1 Liveborn [218]
  - 15.2 Short gestation; low birth weight; and fetal growth retardation [219]
  - 15.3 Intrauterine hypoxia and birth asphyxia [220]
  - 15.4 Respiratory distress syndrome [221]
  - 15.5 Hemolytic jaundice and perinatal jaundice [222]
  - 15.6 Birth trauma [223]
  - 15.7 Other perinatal conditions [224]
    - 15.7.1 Respiratory conditions of fetus and newborn; other than respiratory distress
    - 15.7.2 Infections specific to the perinatal period
    - 15.7.3 Endocrine and metabolic disturbances of fetus and newborn
    - 15.7.4 Other and unspecified perinatal conditions

- 16 Injury and poisoning
  - 16.1 Joint disorders and dislocations; trauma-related [225]
  - 16.2 Fractures
    - 16.2.1 Fracture of neck of femur (hip) [226]
    - 16.2.2 Skull and face fractures [228]
    - 16.2.3 Fracture of upper limb [229]
      - 16.2.3.1 Fracture of humerus
      - 16.2.3.2 Fracture of radius and ulna
      - 16.2.3.3 Other fracture of upper limb
    - 16.2.4 Fracture of lower limb [230]
      - 16.2.4.1 Fracture of tibia and fibula
      - 16.2.4.2 Fracture of ankle
      - 16.2.4.3 Other fracture of lower limb
    - 16.2.5 Other fractures [231]
      - 16.2.5.1 Fracture of vertebral column without mention of spinal cord injury
      - 16.2.5.2 Fracture of ribs; closed
      - 16.2.5.3 Fracture of pelvis
      - 16.2.5.4 Other and unspecified fracture
  - 16.3 Spinal cord injury [227]
  - 16.4 Intracranial injury [233]
    - 16.4.1 Concussion
    - 16.4.2 Other intracranial injury
  - 16.5 Crushing injury or internal injury [234]
  - 16.6 Open wounds
    - 16.6.1 Open wounds of head; neck; and trunk [235]
    - 16.6.2 Open wounds of extremities [236]
  - 16.7 Sprains and strains [232]
  - 16.8 Superficial injury; contusion [239]
  - 16.9 Burns [240]
  - 16.1 Complications
    - 16.10.1 Complication of device; implant or graft [237]
      - 16.10.1.1 Malfunction of device; implant; and graft
      - 16.10.1.2 Infection and inflammation--internal prosthetic device; implant; and graft
      - 16.10.1.3 Other complications of internal prosthetic device; implant; and graft
      - 16.10.1.4 Complications of transplants and reattached limbs
    - 16.10.2 Complications of surgical procedures or medical care [238]
      - 16.10.2.1 Cardiac complications
      - 16.10.2.2 Respiratory complications
      - 16.10.2.3 Gastrointestinal complications
      - 16.10.2.4 Urinary complications
      - 16.10.2.5 Hemorrhage or hematoma complicating a procedure
      - 16.10.2.6 Postoperative infection
      - 16.10.2.7 Other complications of surgical and medical procedures
  - 16.11 Poisoning
    - 16.11.1 Poisoning by psychotropic agents [241]
    - 16.11.2 Poisoning by other medications and drugs [242]
    - 16.11.3 Poisoning by nonmedicinal substances [243]
  - 16.12 Other injuries and conditions due to external causes [244]
- 17 Symptoms; signs; and ill-defined conditions and factors influencing health status
  - 17.1 Symptoms; signs; and ill-defined conditions
    - 17.1.1 Syncope [245]
    - 17.1.2 Fever of unknown origin [246]
    - 17.1.3 Lymphadenitis [247]
    - 17.1.4 Gangrene [248]
    - 17.1.5 Shock [249]
    - 17.1.6 Nausea and vomiting [250]

- 17.1.7 Abdominal pain [251]
- 17.1.8 Malaise and fatigue [252]
- 17.1.9 Allergic reactions [253]
- 17.2 Factors influencing health care
  - 17.2.1 Rehabilitation care; fitting of prostheses; and adjustment of devices [254]
  - 17.2.2 Administrative/social admission [255]
  - 17.2.3 Medical examination/evaluation [256]
  - 17.2.4 Other aftercare [257]
  - 17.2.5 Other screening for suspected conditions (not mental disorders or infectious disease) [258]
- 18 Residual codes; unclassified; all E codes [259 and 260]

# Appendix D1

## Multi-Level CCS – Procedures

### MULTI-LEVEL

#### CATEGORY LABELS [Single-Level CCS Procedure Category]

- 1 Operations on the nervous system
  - 1.1 Incision and excision of CNS [1]
    - 1.1.1 Craniotomy and craniectomy
    - 1.1.2 Incision of cerebral meninges
    - 1.1.3 Other incision and excision of CNS
  - 1.2 Insertion; replacement; or removal of extracranial ventricular shunt [2]
  - 1.3 Laminectomy; excision intervertebral disc [3]
    - 1.3.1 Excision of intervertebral disc
    - 1.3.2 Laminectomy
  - 1.4 Diagnostic spinal tap [4]
  - 1.5 Insertion of catheter or spinal stimulator and injection into spinal canal [5]
  - 1.6 Decompression peripheral nerve [6]
    - 1.6.1 Release of carpal tunnel
    - 1.6.2 Other lysis of adhesion and decompression of peripheral nerves
  - 1.7 Other diagnostic nervous system procedures [7]
  - 1.8 Other non-OR or closed therapeutic nervous system procedures [8]
  - 1.9 Other OR therapeutic nervous system procedures [9]
- 2 Operations on the endocrine system
  - 2.1 Thyroidectomy; partial or complete [10]
  - 2.2 Diagnostic endocrine procedures [11]
  - 2.3 Other therapeutic endocrine procedures [12]
- 3 Operations on the eye
  - 3.1 Corneal transplant [13]
  - 3.2 Glaucoma procedures [14]
  - 3.3 Lens and cataract procedures [15]
    - 3.3.1 Insertion of prosthetic lens
    - 3.3.2 Phacoemulsification and aspiration of cataract
    - 3.3.3 Other extracapsular extraction of lens
    - 3.3.4 Other lens and cataract procedures
  - 3.4 Repair of retinal tear; detachment [16]
  - 3.5 Destruction of lesion of retina and choroid [17]
  - 3.6 Diagnostic procedures on eye [18]
  - 3.7 Other therapeutic procedures on eyelids; conjunctiva; cornea [19]
  - 3.8 Other intraocular therapeutic procedures [20]
  - 3.9 Other extraocular muscle and orbit therapeutic procedures [21]
- 4 Operations on the ear
  - 4.1 Tympanoplasty [22]
  - 4.2 Myringotomy [23]
  - 4.3 Mastoidectomy [24]
  - 4.4 Diagnostic procedures on ear [25]
  - 4.5 Other therapeutic ear procedures [26]
- 5 Operations on the nose; mouth; and pharynx
  - 5.1 Control of epistaxis [27]
  - 5.2 Plastic procedures on nose [28]
  - 5.3 Dental procedures [29]
  - 5.4 Tonsillectomy and/or adenoidectomy [30]
    - 5.4.1 Tonsillectomy without adenoidectomy

- 5.4.2 Tonsillectomy with adenoidectomy
- 5.4.3 Adenoidectomy without tonsillectomy
- 5.4.4 Control of hemorrhage after tonsillectomy or adenoidectomy
- 5.5 Diagnostic procedures on nose; mouth and pharynx [31]
  - 5.5.1 Diagnostic procedures on nasal sinuses
  - 5.5.2 Other diagnostic procedures on nose; mouth and pharynx
- 5.6 Other non-OR therapeutic procedures on nose; mouth and pharynx [32]
  - 5.6.1 Non-OR procedures on nasal sinuses
  - 5.6.2 Other non-OR procedures on nasal sinuses
- 5.7 Other OR therapeutic procedures on nose; mouth and pharynx [33]
  - 5.7.1 OR procedures on nasal sinuses
  - 5.7.2 Excision salivary gland
  - 5.7.3 Repair cleft lip
  - 5.7.4 Correction cleft palate
  - 5.7.5 Incision and drainage of tonsils
  - 5.7.6 Other procedures on nose; mouth and pharynx
- 6 Operations on the respiratory system
  - 6.1 Tracheostomy; temporary and permanent [34]
  - 6.2 Tracheoscopy and laryngoscopy with biopsy [35]
  - 6.3 Lobectomy or pneumonectomy [36]
  - 6.4 Diagnostic bronchoscopy and biopsy of bronchus [37]
    - 6.4.1 Bronchoscopy without biopsy
    - 6.4.2 Endoscopic biopsy of bronchus
    - 6.4.3 Needle biopsy of lung
    - 6.4.4 Endoscopic biopsy of lung
  - 6.5 Other diagnostic procedures on lung and bronchus [38]
  - 6.6 Incision of pleura; thoracentesis; chest drainage [39]
    - 6.6.1 Closed chest drainage
    - 6.6.2 Open chest drainage
    - 6.6.3 Thoracentesis
  - 6.7 Other diagnostic procedures of respiratory tract and mediastinum [40]
  - 6.8 Other non-OR therapeutic procedures on respiratory system [41]
  - 6.9 Other OR therapeutic procedures on respiratory system [42]
- 7 Operations on the cardiovascular system
  - 7.1 Heart valve procedures [43]
  - 7.2 Coronary artery bypass graft (CABG) [44]
    - 7.2.1 Bypass of one coronary artery
    - 7.2.2 Bypass of two coronary arteries
    - 7.2.3 Bypass of three coronary arteries
    - 7.2.4 Bypass of four coronary arteries
    - 7.2.5 Other bypass of coronary arteries
  - 7.3 Percutaneous transluminal coronary angioplasty (PTCA) [45]
    - 7.3.1 Single vessel PTCA
    - 7.3.2 Multiple vessel PTCA
  - 7.4 Coronary thrombolysis [46]
  - 7.5 Diagnostic cardiac catheterization; coronary arteriography [47]
    - 7.5.1 Coronary arteriography
    - 7.5.2 Cardiac catheterization
  - 7.6 Insertion; revision; replacement; removal of cardiac pacemaker or cardioverter/defibrillator [48]
    - 7.6.1 Insertion; revision; replacement; or removal of pacemaker leads
    - 7.6.2 Insertion; revision; replacement; or removal of pacemaker device
    - 7.6.3 Insertion; revision; replacement; or removal of cardioverter/defibrillator
  - 7.7 Other OR heart procedures [49]
  - 7.8 Extracorporeal circulation auxiliary to open heart procedures [50]
  - 7.9 Endarterectomy; vessel of head and neck [51]

- 7.1 Aortic resection; replacement or anastomosis [52]
- 7.11 Varicose vein stripping; lower limb [53]
- 7.12 Other vascular catheterization; not heart [54]
  - 7.12.1 Arterial catheterization
  - 7.12.2 Umbilical vein catheterization
  - 7.12.3 Venous catheterization
- 7.13 Peripheral vascular bypass [55]
- 7.14 Other vascular bypass and shunt; not heart [56]
- 7.15 Creation; revision and removal of arteriovenous fistula or vessel-to-vessel cannula for dialysis [57]
- 7.16 Hemodialysis [58]
- 7.17 Other OR procedures on vessels of head and neck [59]
- 7.18 Embolectomy and endarterectomy of lower limbs [60]
- 7.19 Other OR procedures on vessels other than head and neck [61]
  - 7.19.1 Interrupt vena cava
  - 7.19.2 Other OR procedures on blood vessels
- 7.2 Other diagnostic cardiovascular procedures [62]
- 7.21 Other non-OR therapeutic cardiovascular procedures [63]
- 8 Operations on the hemic and lymphatic system
  - 8.1 Bone marrow transplant [64]
  - 8.2 Bone marrow biopsy [65]
  - 8.3 Procedures on spleen [66]
  - 8.4 Other therapeutic procedures; hemic and lymphatic system [67]
    - 8.4.1 Biopsy of lymphatic structure
    - 8.4.2 Simple excision of lymphatic structure
    - 8.4.3 Regional lymph node excision
    - 8.4.4 Radical excision lymph nodes
    - 8.4.5 Other hemic and lymphatic procedures
- 9 Operations on the digestive system
  - 9.1 Therapeutic procedures on the esophagus
    - 9.1.1 Injection or ligation of esophageal varices [68]
    - 9.1.2 Esophageal dilatation [69]
  - 9.2 Upper gastrointestinal endoscopy; biopsy [70]
    - 9.2.1 Esophagoscopy
    - 9.2.2 Gastroscopy
    - 9.2.3 Esophagogastroduodenoscopy (EGD) without biopsy
    - 9.2.4 Esophagogastroduodenoscopy (EGD) with biopsy
    - 9.2.5 Endoscopic biopsy small intestine
  - 9.3 Gastrostomy; temporary and permanent [71]
  - 9.4 Colostomy; temporary and permanent [72]
  - 9.5 Ileostomy and other enterostomy [73]
  - 9.6 Gastrectomy; partial and total [74]
  - 9.7 Small bowel resection [75]
  - 9.8 Colonoscopy and biopsy [76]
    - 9.8.1 Closed endoscopic biopsy of large intestine
    - 9.8.2 Other endoscopy of large intestine
  - 9.9 Proctoscopy and anorectal biopsy [77]
    - 9.1 Colorectal resection [78]
      - 9.10.1 Right hemicolectomy
      - 9.10.2 Left hemicolectomy
      - 9.10.3 Sigmoidectomy
      - 9.10.4 Resection of rectum
      - 9.10.5 Other colorectal resections
    - 9.11 Local excision of large intestine lesion (not endoscopic) [79]
    - 9.12 Appendectomy [80]
    - 9.13 Hemorrhoid procedures [81]

- 9.14 Endoscopic retrograde cannulation of pancreas (ERCP) [82]
- 9.15 iopsy of liver [83]
- 9.16 Cholecystectomy and common duct exploration [84]
  - 9.16.1 Open cholecystectomy
  - 9.16.2 Laparoscopic cholecystectomy
  - 9.16.3 Incision of bile duct
- 9.17 Inguinal and femoral hernia repair [85]
  - 9.17.1 Unilateral repair inguinal hernia
  - 9.17.2 Bilateral repair inguinal hernia
  - 9.17.3 Femoral hernia repair
- 9.18 Other hernia repair [86]
  - 9.18.1 Umbilical hernia repair
  - 9.18.2 Incisional hernia repair
  - 9.18.3 Other abdominal wall hernia repair
  - 9.18.4 Other hernia repair
- 9.19 Laparoscopy [87]
- 9.2 Abdominal paracentesis [88]
- 9.21 Exploratory laparotomy [89]
- 9.22 Excision; lysis peritoneal adhesions [90]
- 9.23 Peritoneal dialysis [91]
- 9.24 Other bowel diagnostic procedures [92]
- 9.25 Other non-OR upper GI therapeutic procedures [93]
- 9.26 Other OR upper GI therapeutic procedures [94]
- 9.27 Other non-OR lower GI therapeutic procedures [95]
- 9.28 Other OR lower GI therapeutic procedures [96]
  - 9.28.1 Closure of stoma of large intestine
  - 9.28.2 Local excision of rectal lesion
  - 9.28.3 Incision of perirectal tissue
  - 9.28.4 Incision of perianal abscess
  - 9.28.5 Incision/excision of anal fistula
  - 9.28.6 Other lower GI procedures
- 9.29 Other gastrointestinal diagnostic procedures [97]
- 9.3 Other non-OR gastrointestinal therapeutic procedures [98]
- 9.31 Other OR gastrointestinal therapeutic procedures [99]
  - 9.31.1 Radical pancreaticoduodenectomy
  - 9.31.2 Incision abdominal wall
  - 9.31.3 Excision or destruction of peritoneal tissue
  - 9.31.4 Creation of cutaneoperitoneal fistula
  - 9.31.5 Other gastrointestinal therapeutic procedures
- 10 Operations on the urinary system
  - 10.1 Cystoscopy and other transurethral procedures
    - 10.1.1 Endoscopy and endoscopic biopsy of the urinary tract [100]
    - 10.1.2 Transurethral excision; drainage; or removal of urinary obstruction [101]
    - 10.1.3 Ureteral catheterization [102]
  - 10.2 Nephrotomy and nephrostomy [103]
  - 10.3 Nephrectomy; partial or complete [104]
  - 10.4 Kidney transplant [105]
  - 10.5 Genitourinary incontinence procedures [106]
  - 10.6 Extracorporeal lithotripsy; urinary [107]
  - 10.7 Indwelling catheter [108]
  - 10.8 Procedures on the urethra [109]
  - 10.9 Other diagnostic procedures of urinary tract [110]
  - 10.1 Other non-OR therapeutic procedures of urinary tract [111]
  - 10.11 Other OR therapeutic procedures of urinary tract [112]
- 11 Operations on the male genital organs
  - 11.1 Transurethral resection of prostate (TURP) [113]

- 11.2 Open prostatectomy [114]
- 11.3 Circumcision [115]
- 11.4 Diagnostic procedures; male genital [116]
- 11.5 Other non-OR therapeutic procedures; male genital [117]
- 11.6 Other OR therapeutic procedures; male genital [118]
  - 11.6.1 Unilateral orchiectomy
  - 11.6.2 Bilateral orchiectomy
  - 11.6.3 Orchiopexy
  - 11.6.4 Insert or replace penile prosthesis
  - 11.6.5 Other male genital procedures
- 12 Operations on the female genital organs
  - 12.1 Oophorectomy; unilateral and bilateral [119]
  - 12.2 Other operations on ovary [120]
  - 12.3 Ligation of fallopian tubes [121]
  - 12.4 Other operations on fallopian tubes [123]
  - 12.5 Hysterectomy; abdominal and vaginal [124]
    - 12.5.1 Total abdominal hysterectomy
    - 12.5.2 Vaginal hysterectomy
    - 12.5.3 Other hysterectomy
  - 12.6 Other excision of cervix and uterus [125]
  - 12.7 Abortion (termination of pregnancy) [126]
  - 12.8 Dilatation and curettage (D&C); aspiration after delivery or abortion [127]
  - 12.9 Diagnostic dilatation and curettage (D&C) [128]
    - 12.1 Repair of cystocele and rectocele; obliteration of vaginal vault [129]
    - 12.11 Other diagnostic procedures; female organs [130]
    - 12.12 Other non-OR therapeutic procedures; female organs [131]
    - 12.13 Other OR therapeutic procedures; female organs [132]
- 13 Obstetrical procedures
  - 13.1 Episiotomy [133]
  - 13.2 Cesarean section [134]
  - 13.3 forceps; vacuum; and breech delivery [135]
    - 13.3.1 Low forceps delivery with episiotomy
    - 13.3.2 Vacuum extraction with episiotomy
    - 13.3.3 Other vacuum extraction
    - 13.3.4 Other forceps or breech delivery
  - 13.4 Artificial rupture of membranes to assist delivery [136]
    - 13.4.1 Induction of labor by artificial rupture of membranes
    - 13.4.2 Other artificial rupture of membranes
  - 13.5 Other procedures to assist delivery [137]
    - 13.5.2 Medical induction of labor
    - 13.5.3 Other manually assisted labor
    - 13.5.4 Other delivery procedures
  - 13.6 Diagnostic amniocentesis [138]
  - 13.7 Fetal monitoring [139]
  - 13.8 Repair of current obstetric laceration [140]
    - 13.8.1 Repair of obstetric laceration of uterus or cervix
    - 13.8.2 Repair of obstetric laceration of bladder or urethra
    - 13.8.3 Repair of obstetric laceration of rectum or sphincter
    - 13.8.4 Repair of other obstetric laceration
  - 13.9 Other therapeutic obstetrical procedures [141]
  - 13.1 Removal of ectopic pregnancy [122]
- 14 Operations on the musculoskeletal system
  - 14.1 Partial excision bone [142]
  - 14.2 Bunionectomy or repair of toe deformities [143]
  - 14.3 Treatment of fracture or dislocation
    - 14.3.1 Treatment; facial fracture or dislocation [144]

- 14.3.2 Treatment; fracture or dislocation of radius and ulna [145]
- 14.3.3 Treatment; fracture or dislocation of hip and femur [146]
- 14.3.4 Treatment; fracture or dislocation of lower extremity (other than hip or femur) [147]
- 14.3.5 Other fracture and dislocation procedure [148]
- 14.4 Arthroscopy [149]
  - 14.4.1 Arthroscopy of knee
  - 14.4.2 Other arthroscopy
- 14.5 Division of joint capsule; ligament or cartilage [150]
- 14.6 Excision of semilunar cartilage of knee [151]
- 14.7 Arthroplasty
  - 14.7.1 Arthroplasty knee [152]
  - 14.7.2 Hip replacement; total and partial [153]
  - 14.7.3 Arthroplasty other than hip or knee [154]
- 14.8 Arthrocentesis [155]
- 14.9 Injections and aspirations of muscles; tendons; bursa; joints and soft tissue [156]
- 14.1 Amputation of lower extremity [157]
  - 14.10.1 Amputation of toe
  - 14.10.2 Amputation through foot
  - 14.10.3 Below knee amputation
  - 14.10.4 Above knee amputation
  - 14.10.5 Other lower extremity amputation
- 14.11 Spinal fusion [158]
- 14.12 Other diagnostic procedures on musculoskeletal system [159]
- 14.13 Other therapeutic procedures on muscles and tendons [160]
  - 14.13.1 Rotator cuff repair
  - 14.13.2 Other suture of muscle; tendon and fascia
  - 14.13.3 Other muscle and tendon procedures
- 14.14 Other OR therapeutic procedures on bone [161 ]
- 14.15 Other OR therapeutic procedures on joints [162]
- 14.16 Other non-OR therapeutic procedures on musculoskeletal system [163]
- 14.17 Other OR therapeutic procedures on musculoskeletal system [164]
- 15 Operations on the integumentary system
  - 15.1 Procedures on the breast
    - 15.1.1 Breast biopsy and other diagnostic procedures on breast [165]
    - 15.1.2 Lumpectomy; quadrantectomy of breast [166]
    - 15.1.3 Mastectomy [167]
  - 15.2 Incision and drainage; skin and subcutaneous tissue [168]
  - 15.3 Debridement of wound; infection or burn [169]
  - 15.4 Excision of skin lesion [170]
  - 15.5 Suture of skin and subcutaneous tissue [171]
  - 15.6 Skin graft [172]
  - 15.7 Other diagnostic procedures on skin and subcutaneous tissue [173]
  - 15.8 Other non-OR therapeutic procedures on skin and breast [174]
    - 15.8.1 Aspiration of skin and subcutaneous tissue
    - 15.8.2 Insertion of totally implantable vascular access device
    - 15.8.3 Debridement of nail
    - 15.8.4 Other skin and breast procedures; non-OR
  - 15.9 Other OR therapeutic procedures on skin and breast [175]
    - 15.9.1 Bilateral reduction mammoplasty
    - 15.9.2 Excision pilonidal cyst or sinus
    - 15.9.3 Other skin and breast procedures; OR
- 16 Miscellaneous diagnostic and therapeutic procedures
  - 16.1 Other organ transplantation [176]
  - 16.2 Computerized axial tomography (CT) scan
    - 16.2.1 Computerized axial tomography (CT) scan head [177]
    - 16.2.2 CT scan chest [178]

- 16.2.3 CT scan abdomen [179]
- 16.2.4 Other CT scan [180]
- 16.3 Myelogram [181]
- 16.4 Mammography [182]
- 16.5 Routine chest X-ray [183]
- 16.6 Intraoperative cholangiogram [184]
- 16.7 Upper gastrointestinal X-ray [185]
- 16.8 Lower gastrointestinal X-ray [186]
- 16.9 Intravenous pyelogram [187]
- 16.1 Cerebral arteriogram [188]
- 16.11 Contrast aortogram [189]
- 16.12 Contrast arteriogram of femoral and lower extremity arteries [190]
- 16.13 Arterio or venogram (not heart and head) [191]
- 16.14 Diagnostic ultrasound
  - 16.14.1 Diagnostic ultrasound of head and neck [192]
  - 16.14.2 Diagnostic ultrasound of heart (echocardiogram) [193]
  - 16.14.3 Diagnostic ultrasound of gastrointestinal tract [194]
  - 16.14.4 Diagnostic ultrasound of urinary tract [195]
  - 16.14.5 Diagnostic ultrasound of abdomen or retroperitoneum [196]
  - 16.14.6 Other diagnostic ultrasound [197]
- 16.15 Magnetic resonance imaging [198]
- 16.16 Electroencephalogram (EEG) [199]
- 16.17 Nonoperative urinary system measurements [200]
- 16.18 Cardiac stress tests [201]
- 16.19 Electrocardiogram [202]
- 16.2 Electrographic cardiac monitoring [203]
- 16.21 Swan-Ganz catheterization for monitoring [204]
- 16.22 Arterial blood gases [205]
- 16.23 Microscopic examination (bacterial smear; culture; toxicology) [206]
- 16.24 Radioisotope scan
  - 16.24.1 Radioisotope bone scan [207]
  - 16.24.2 Radioisotope pulmonary scan [208]
  - 16.24.3 Radioisotope scan and function studies [209]
  - 16.24.4 Other radioisotope scan [210]
- 16.25 Therapeutic radiology [211]
- 16.26 Physical therapy
  - 16.26.1 Diagnostic physical therapy [212]
  - 16.26.2 Physical therapy exercises; manipulation; and other procedures [213]
  - 16.26.3 Traction; splints; and other wound care [214]
  - 16.26.4 Other physical therapy and rehabilitation [215]
- 16.27 Respiratory intubation and mechanical ventilation [216]
  - 16.27.1 Endotracheal intubation
  - 16.27.2 Continuous mechanical ventilation less than 96 hours
  - 16.27.3 Continuous mechanical ventilation 96 hours or more
  - 16.27.4 Other respiratory intubation and mechanical ventilation
- 16.28 Other respiratory therapy [217]
  - 16.28.1 Respiratory medication administered by nebulizer
  - 16.28.2 Oxygen therapy
  - 16.28.3 Other respiratory treatments
- 16.29 Psychological and psychiatric evaluation and therapy [218]
  - 16.29.1 Psychiatric drug therapy
  - 16.29.2 Electroconvulsive therapy
  - 16.29.3 Individual psychotherapy
  - 16.29.4 Other psychological and psychiatric evaluation and therapy
- 16.3 Alcohol and drug rehabilitation/ detoxification [219]
  - 16.30.1 Alcohol rehabilitation

- 16.30.2 Alcohol detoxification
- 16.30.3 Alcohol rehabilitation and detoxification
- 16.30.4 Drug rehabilitation
- 16.30.5 Drug detoxification
- 16.30.6 Drug rehabilitation and detoxification
- 16.30.7 Alcohol and drug rehabilitation
- 16.30.8 Alcohol and drug detoxification
- 16.30.9 Alcohol and drug rehabilitation and detoxification
- 16.31 Ophthalmologic and otologic diagnosis and treatment [220]
- 16.32 Nasogastric tube [221]
- 16.33 Blood transfusion [222]
- 16.34 Enteral and parenteral nutrition [223]
- 16.35 Cancer chemotherapy [224]
- 16.36 Conversion of cardiac rhythm [225]
- 16.37 Other diagnostic radiology and related techniques [226]
- 16.38 Other diagnostic procedures (interview; evaluation; consultation) [227]
- 16.39 Prophylactic vaccinations and inoculations [228]
- 16.4 Nonoperative removal of foreign body [229]
- 16.41 Extracorporeal shock wave lithotripsy; other than urinary [230]
- 16.42 Other therapeutic procedures [231]
  - 16.42.1 Inject antibiotic
  - 16.42.2 Other phototherapy (newborn)
  - 16.42.3 Injection of Thromobolytic Agent (not coronary)
  - 16.42.4 Other therapies

**Table A. Mapping CCS diagnosis categories into ICD-9-CM chapters**

<b>CCS diagnosis numbers</b>	<b>ICD-9-CM diagnosis chapters</b>
1-10	1 - Infectious and parasitic diseases
11-47	2 - Neoplasms
48-58	3 - Endocrine, nutritional, and metabolic diseases and immunity disorders
59-64	4 - Diseases of the blood and blood-forming organs
650-663,670	5 - Mental illness
76-95	6 - Diseases of the nervous system and sense organs
96-121	7 - Diseases of the circulatory system
122-134	8 - Diseases of the respiratory system
135-155	9 - Diseases of the digestive system
156-175	10 - Diseases of the genitourinary system
176-196	11 - Complications of pregnancy, childbirth, and the puerperium
197-200	12 - Diseases of the skin and subcutaneous tissue
201-212	13 - Diseases of the musculoskeletal system and connective tissue
213-217	14 - Congenital anomalies
218-224	15 - Certain conditions originating in the perinatal period
225-244	16 - Injury and poisoning
245-260	17 - Other conditions

Note: CCS is Clinical Classifications for Health Policy Research. ICD-9-CM refers to the *International Classification of Diseases, 9th Revision, Clinical Modification*.

**Table B. Mapping CCS procedure categories into ICD-9-CM chapters**

<b>CCS procedure numbers</b>	<b>ICD-9-CM procedure chapters</b>
1-9	1 - Operations on the nervous system
10-12	2 - Operations on the endocrine system
13-21	3 - Operations on the eye
22-26	4 - Operations on the ear
27-33	5 - Operations on the nose, mouth, and pharynx
34-42	6 - Operations on the respiratory system
43-63	7 - Operations on the cardiovascular system
64-67	8 - Operations on the hemic and lymphatic system
68-99	9 - Operations on the digestive system
100-112	10 - Operations on the urinary system
113-118	11 - Operations on the male genital organs
119-121, 123-132	12 - Operations on the female genital organs
122, 133-141	13 - Obstetrical procedures
142-164	14 - Operations on the musculoskeletal system
165-175	15 - Operations on the integumentary system
176-231	16 - Miscellaneous diagnostic and therapeutic procedures

Note: CCS is Clinical Classifications for Health Policy Research. *ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.*