



**ICD-10-CM DIAGNOSIS CODING IN HCUP DATA: COMPARISONS WITH
ICD-9-CM AND PRECAUTIONS FOR TREND ANALYSES**

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EXECUTIVE SUMMARY

This document examines challenges in creating consistently defined groupings that incorporate diagnosis codes from both the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) systems. The analysis uses Agency for Healthcare Research and Quality (AHRQ) Healthcare Cost and Utilization Project (HCUP) data from 24 State Inpatient Databases (SID) and 17 State Emergency Department Databases (SEDD) in 2013, 2014, and 2015 to track and compare diagnosis volume across the two classification systems.

To investigate potential coding shifts, researchers may want to examine trends by quarter for individual ICD codes and for groupings of codes such as the Clinical Classifications Software (CCS), overall and by patient and hospital characteristics. In this document we examined changes overall, but it also may be advisable for researchers to examine trends by patient and hospital characteristics such as payer, age, and urban or rural location. Trends may differ according to whether the condition is listed in the first position (principal diagnosis) or in any position on the record (all-listed diagnoses). Researchers also may want to investigate whether changes are occurring in related CCS categories, including CCS categories that group heterogeneous codes classified as “other.”

Main Findings

- Starting on October 1, 2015, there were 68,069 valid ICD-10-CM diagnosis codes, representing a nearly 20-fold increase from the 14,025 valid ICD-9-CM diagnosis codes. ICD-10-CM diagnosis codes are structured differently from ICD-9-CM codes and provide more detail. The number of codes has increased further in each of the last 2 years.
- The CCS and other classification systems are based on broad groupings of ICD-9-CM and ICD-10-CM codes; however, they still may be susceptible to fluctuations. While many CCS categories show stable trends across the transition period, a number of categories exhibited differences in trends following the transition to ICD-10-CM coding.
- Appendices to this document provide a comprehensive overview of the differences in counts of diagnoses across the coding periods for CCS categories in the State Inpatient Databases and State Emergency Department Databases.
- For inpatient data, of the 262 CCS diagnosis categories, 93 categories (35 percent) increased or decreased by less than 5 percent across the transition period. For 105 categories (40 percent), frequencies changed by 5 to 19 percent. For 39 categories (15 percent), frequencies changed by 20 to 49 percent. For 25 categories (10 percent), frequencies changed by more than 50 percent.
- Changes in frequencies can be attributable to the availability of new codes as well as changes in coding guidelines.
- Compared with CCS procedures, CCS diagnosis categories demonstrated greater stability across the transition period. For three-quarters of diagnosis categories, frequencies changed by less than 20 percent during the switch from ICD-9-CM to ICD-10-CM.

ICD-10-CM is still new and undergoing continuous revisions, modifications, and improvements. It will take time for professional coders, physicians and hospital staff, and researchers to become familiar with the new system. In addition, changes are expected as professional coding guidelines and coding assistance software continue to evolve.

It will be important to develop new categorization schemes under ICD-10-CM to enable researchers to group clinically meaningful diagnoses for analysis. This document provides examples of how analysts can examine the stability of diagnosis categorization scheme across the ICD-9-CM to ICD-10-CM transition. It only illustrates examples and does not present data on all instances in which CCS categories may be changing because of the transition to ICD-10-CM and ICD-10 Procedure Coding System (PCS). More detail on coding shifts for the specific condition of opioid use can be found in a related document titled *Trends in Opioid-related Inpatient Stays Shifted After the US Transitioned to ICD-10-CM Diagnosis Coding in 2015*, available on the [ICD-10-CM/PCS Resources Web page](#).

When using HCUP data that include both ICD-9-CM and ICD-10-CM/PCS codes, researchers should examine the frequency of individual diagnosis codes reported by quarter to assess the advisability of combining data across the two coding time periods.

INTRODUCTION

The purpose of this document is to provide users of Healthcare Cost and Utilization Project (HCUP) data with examples of how transitioning from the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) to the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) coding system may affect analyses of data grouped using the Clinical Classifications Software (CCS). The degree to which changes to individual ICD codes influence broader groupings is largely unknown. Although this document focuses on the CCS categories, researchers may apply similar methods to investigate shifts in other systems that classify ICD codes into clinically meaningful groups.

It is important to note that the examples provided in this document are for illustrative purposes only and are not comprehensive of all instances in which the transition to the ICD-10-CM coding system affects the ability to follow trends in hospital inpatient diagnoses using individual ICD codes or categorization schemes such as CCS.

Brief Overview of ICD-9-CM Versus ICD-10-CM/PCS

On October 1, 2015, the United States transitioned from using ICD-9-CM to ICD-10-CM and ICD-10 Procedure Coding System (ICD-10-PCS) code sets to report medical diagnoses and inpatient procedures. ICD-10-CM consists of two parts:

- ICD-10-CM: diagnosis coding on inpatient and outpatient data
- ICD-10-PCS: procedure coding on inpatient data.

An overview of key differences between ICD-9-CM and ICD-10-CM/PCS is available on the HCUP-US Web site under [ICD-10-CM/PCS Resources](#). A more detailed comparison of the ICD-9-CM and ICD-10-CM/PCS coding systems is available in the HCUP Methods Series Report #2016-02, titled [Impact of ICD 10-CM/PCS on Research Using Administrative Databases](#). The current document focuses on differences between the ICD-9-CM and ICD-10-CM diagnosis coding systems.

Brief Description of the HCUP State Databases

State Inpatient Databases

The State Inpatient Databases (SID) include discharge-level data on inpatient stays from most, if not all, hospitals in the State. The SID include all types of inpatient stays, including transfers from another acute care hospital and stays that originated in the hospital emergency department (ED). The SID can be used to investigate questions unique to one State, to compare data from two or more States, to conduct market-area variation analyses, and to identify State-specific trends in inpatient care utilization, access, charges, and outcomes.

Starting on October 1, 2015, the SID include ICD-10-CM/PCS diagnosis codes and procedure codes. Thus, in the 2015 data year, three quarters of data are coded using ICD-9-CM and the last quarter is coded using ICD-10-CM/PCS.

State Emergency Department Databases

The State Emergency Department Databases (SEDD) include encounter-level data on ED visits that do not result in an inpatient admission to the same hospital. The SEDD contain information from ED encounters from hospital-based EDs, translated into a uniform format to facilitate multistate comparisons and analyses. The SEDD can be used to investigate access to health care in a changing health care marketplace; to identify State-specific trends in ED utilization, access, charges, and outcomes; and to conduct market-area research and small-area variation analyses.

CODING OF DIAGNOSES UNDER ICD-10-CM

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

Table 1 and Figure 1 compare the two diagnosis coding systems with respect to organization and structure, code composition, and level of detail of diagnosis codes. Table 2 contains the diagnosis categories represented by the first three character values.

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

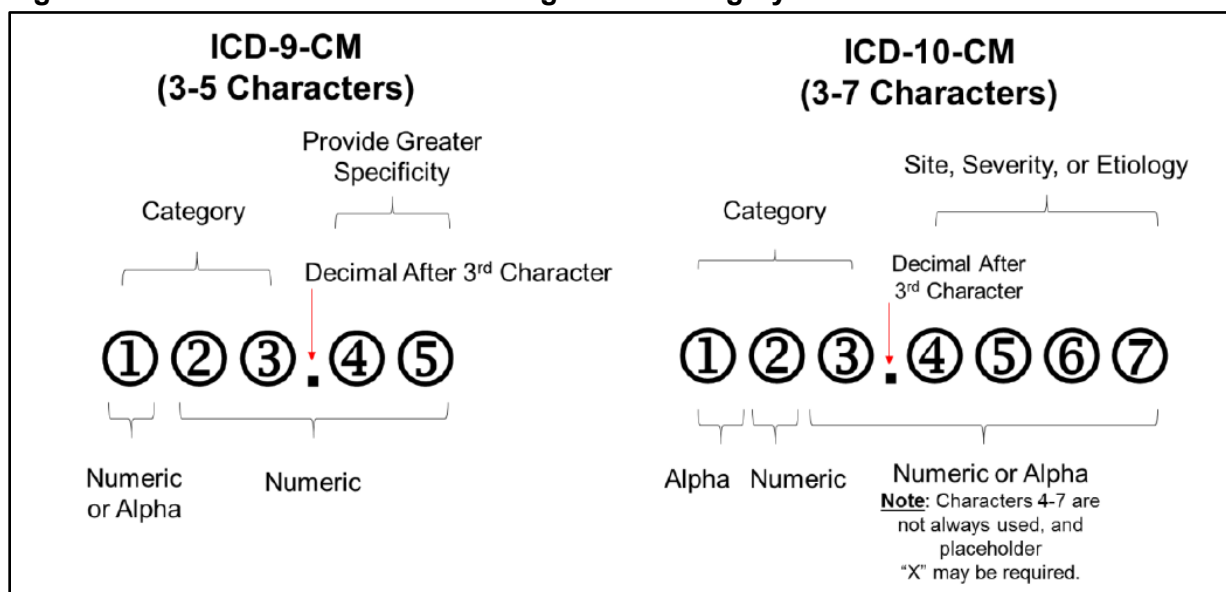
ICD-9-CM	ICD-10-CM
14,025 codes	68,069 codes
17 chapters in ICD-9-CM Code Book	21 chapters in ICD-10-CM Code Book New, separate chapters for— <ul style="list-style-type: none">• Diseases of Eye and Adnexa• Diseases of Ear and Mastoid Process Incorporated into main chapters— <ul style="list-style-type: none">• External Causes of Morbidity• Factors Influencing Health Status and Contact With Health Services In addition, certain diseases have been reclassified to new chapters based on current medical knowledge
3–5 characters	3–7 characters
First character is numeric or alpha (V or E)	First character is alpha (every letter except U)
Characters 2–5 are numeric	Character 2 is numeric; characters 3–7 can be alpha or numeric
Decimal after 3 characters (except E codes)	Decimal after 3 characters
No placeholder character	The placeholder “X” may be used when a code contains fewer than six characters and a seventh character applies

ICD-9-CM	ICD-10-CM
Limited use of combination codes	Include combination codes for conditions and common symptoms or manifestations; include combination codes for poisonings and external causes
Postoperative complications listed under Injury and Poisoning chapter	Postoperative complications moved to procedure-specific body system chapters
Lack of information on laterality	Designate the left or the right side of the body when describing the location of conditions and injuries
No encounter information	Character 7 identifies whether the encounter was the initial, subsequent, or sequela-related
Lack of information on timing	Inclusion of trimesters in obstetric codes and information on timeframe specified in certain other codes
Injuries grouped by type	Injuries grouped by site of the body and then by type

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

Source: Casto AB (ed). ICD-10-CM Code Book, 2016. Chicago, IL: American Health Information Management Association; 2016.

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



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

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

Table 2. ICD-10-CM Character Values

Characters 1-3	Category of Diagnosis
A00-B99	Certain infectious and parasitic diseases
C00-D49	Neoplasms
D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism
E00-E89	Endocrine, nutritional, and metabolic diseases
F01-F99	Mental, behavioral and neurodevelopmental disorders
G00-G99	Diseases of the nervous system
H00-H59	Diseases of the eye and adnexa
H60-H95	Diseases of the ear and mastoid process
I00-I99	Diseases of the circulatory system
J00-J99	Diseases of the respiratory system
K00-K95	Diseases of the digestive system
L00-L99	Diseases of the skin and subcutaneous tissue
M00-M99	Diseases of the musculoskeletal system and connective tissue
N00-N99	Diseases of the genitourinary system
O00-O9A	Pregnancy, childbirth, and the puerperium
P00-P96	Certain conditions originating in the perinatal period
Q00-Q99	Congenital malformations, deformations, and chromosomal abnormalities
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified
S00-T88	Injury, poisoning and certain other consequences of external causes
V00-Y99	External causes of morbidity

Z00-Z99	Factors influencing health status and contact with health services
Characters 4–7	Meaning
	The meaning of characters 4–7 depends on the category.
	The character “X” is used as a placeholder.

Abbreviation: ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification.

Source: Casto AB, Ed. ICD-10-CM Code Book, 2016. Chicago, IL: American Health Information Management Association; 2016.

How the CCS for ICD-10-CM Was Developed

The initial mapping for the CCS ICD-10-CM categories was completed by linking ICD-10-CM codes to the current CCS AHRQ classification assignments via General Equivalence Mappings (GEMs) available from the Centers for Medicare & Medicaid Services (CMS) Web site.¹ The initial GEMs-driven maps were reviewed by credentialed coders trained in both ICD-9-CM and ICD-10-CM to ensure the validity of the map for use in formulating the CCS categories. Two coders reviewed each code set. When the coders did not initially map a code to the same CCS category, the team reviewed the discrepancies and came to consensus for the CCS assignment, with the help of a third coder if necessary. Initial maps were completed in September 2011. The accuracy of the initial assessment was verified by reviewing a 20 percent sample of the coding assignments. In 2013, reverse mapping validation of 100 percent of the ICD-10-CM CCS assignments was conducted to verify the accuracy of the CCS mapped categories.²

After the original development and release of the HCUP Tools and Software for ICD-10-CM/PCS, questions arose from users about the decision to map specific codes into a CCS category or other HCUP Tool (e.g., Elixhauser Comorbidity Software) value. In some cases, the decision to rely on the GEMs as the basis for HCUP categorization rules has resulted in problems. For example, certain ICD-10-CM codes such as F11.121, *Opioid abuse with intoxication delirium*, include a component for drug use, abuse, or dependence as well as a behavioral disorder component for the manifestation. The GEMs map the ICD-10-CM use and abuse codes with behavioral disorders such as F11.121 to the ICD-9-CM code for the behavioral disorder. They do not map to the abuse code. Therefore, by relying on the GEMs, the ICD-10-CM Tool assignments also were based on the behavioral disorder and not the drug abuse component.

¹ For additional information on GEMs, please see Centers for Medicare & Medicaid Services. 2014 ICD-10-CM and GEMs. Last modified June 2, 2016. <http://www.cms.gov/Medicare/Coding/ICD10/2014-ICD-10-CM-and-GEMs.html>

² For additional information on the detailed process used to create and validate the CCS for ICD-10-CM, please see Healthcare Cost and Utilization Project. Beta Clinical Classifications Software (CCS) for ICD-10-CM/PCS. October 2017. <https://www.hcup-us.ahrq.gov/toolsoftware/ccs10/ccs10.jsp>

METHODS

This document presents analyses using data from the SID and SEDD for States with data that were processed at the time of this report. A complete list of HCUP Partner Organizations is available in [Appendix A](#). Records were limited to stays and visits at community hospitals that are not rehabilitation or long-term acute care hospitals.

The data sources were the following:

- SID data were from 24 States: Arizona, California, Colorado, Florida, Hawaii, Iowa, Illinois, Kansas, Kentucky, Minnesota, Missouri, Montana, Nebraska, New Jersey, New Mexico, Nevada, North Dakota, Ohio, Oregon, South Dakota, Tennessee, Vermont, Washington, and Wisconsin.
- SEDD data were from 17 States: Arizona, California, Florida, Hawaii, Iowa, Kansas, Kentucky, Minnesota, Missouri, Nebraska, New Jersey, North Dakota, Ohio, South Dakota, Tennessee, Vermont, and Wisconsin.

The analysis consisted of calculating estimates based on the number of stays involving various diagnoses by discharge quarter 4 (Q4) for 3 consecutive calendar years:

- Q4 2013 – October 1 to December 31, 2013 (ICD-9-CM)
- Q4 2014 – October 1 to December 31, 2014 (ICD-9-CM)
- Q4 2015 – October 1 to December 31, 2015 (ICD-10-CM).

The data presented in this document on individual diagnoses are based on principal diagnosis for the SID and all-listed diagnoses for the SEDD. Individual codes were selected and reviewed by professional medical coders for both coding systems.

CCS categories were excluded from the analysis if there were fewer than 1,000 hospital stays in the category in all quarters analyzed. When analyzing CCS categories or the total number of codes for a single diagnosis and quarter, we calculated percentage changes from Q4 2014 to Q4 2015 and from Q4 2013 to Q4 2014.³ Change from Q4 2014 to Q4 2015 may represent changes associated with the introduction of ICD-10-CM/PCS as well as continuation of an existing trend. Therefore, the percentage change from Q4 2013 to Q4 2014 was used as a baseline to evaluate the change from 2014 to 2015. The results presented in this document may shift with additional quarters and years of data as experience increases with the ICD-10-CM system.

The data presented in this document on CCS categories are based on either first- or all-listed diagnosis fields, as discussed below:

- For the SID, principal diagnoses are presented for each example.
- For the SEDD, all-listed diagnoses are presented for each example.

³ Percentage change in frequency was calculated as the cumulative change in frequencies from period one to period two, divided by the frequency in period one.

The prevalence of select CCS categories was calculated at each time point, as follows:

- For principal diagnoses, the number of inpatient stays with the CCS category listed in the first diagnosis field in each quarter and year.
- For all-listed diagnoses, the number of inpatient stays with at least one diagnosis falling in the CCS category in each quarter and year. If the CCS category was reported more than once on a record, the category was counted only once. Therefore, the total frequencies of individual codes could be higher than the frequencies of CCS categories because a single hospitalization may have multiple distinct diagnosis codes in the same CCS category during the stay.

RESULTS

There were a total of 262 CCS diagnosis categories. We examined frequencies of discharges in each category across the ICD-9-CM to ICD-10-PCS coding transition period. As shown in Appendices B and C, which lists all CCS categories in the hospital inpatient discharge data:

- For 93 categories, frequencies changed (increased or decreased) by less than 5 percent across the transition period. This accounts for more than one-third (35 percent) of CCS diagnosis categories.
- For 105 diagnosis categories (40 percent), frequencies changed by 5 to 19 percent.
- For 39 categories (15 percent), frequencies changed by 20 to 49 percent.
- For 25 categories (10 percent), frequencies changed by more than 50 percent.

Thus, for three-quarters of all CCS diagnosis categories, frequencies changed by less than 20 percent. Compared with CCS procedure categories, there was more stability in frequencies of diagnoses.⁴

For certain groups of conditions, changes in frequencies across the transition period are especially small; cancers, cardiovascular conditions, and gastrointestinal conditions appear to be least affected by the change to ICD-10-CM.

For remaining analyses, results are presented below by CCS diagnosis category and by individual ICD-9-CM and ICD-10-CM codes within select CCS categories to illustrate a suggested approach that researchers can use to examine the transition from ICD-9-CM to ICD-10-CM. Four types of analyses are presented.

1. CCS principal diagnosis categories with high volumes in the SID that are relatively stable before and after the transition to ICD-10-CM
2. CCS principal diagnosis categories with large *decreases* in volume in the SID after the implementation of ICD-10-CM

⁴ Moore BJ, Owens PL, Elixhauser A, Casto AB. ICD-10-PCS Procedure Coding in HCUP Data: Comparisons With ICD-9-CM and Precautions for Trend Analyses. Online. November 2, 2017. U.S. Agency for Healthcare Research and Quality. Available at https://www.hcup-us.ahrq.gov/datainnovations/icd10_resources.jsp#analysis.

3. CCS principal diagnosis categories with large *increases* in volume in the SID after the implementation of ICD-10-CM
4. CCS all-listed diagnosis categories with high volumes in the SEDD prior to the implementation of ICD-10-CM.

A complete list of results by CCS diagnosis category is available in Appendices B and C. [Appendix B](#) lists the results for principal diagnosis in the SID, sorted numerically by CCS diagnosis category number; thus, the findings are grouped by body system. [Appendix C](#) lists the results for principal diagnosis in the SID sorted in descending order by the percent change in the volume of records in CCS diagnosis categories across the transition period. [Appendix D](#) lists the results for all-listed diagnosis in the SEDD, also sorted numerically by CCS diagnosis category number. [Appendix E](#) lists the results for all-listed diagnosis in the SEDD sorted in descending order by the percent change in the volume of records in CCS diagnosis categories across the transition period.

CCS Principal Diagnosis Categories With High, Stable Volumes in the State Inpatient Databases After Implementation of ICD-10-CM

Table 3 presents frequencies for a select group of CCS diagnosis categories with high and stable volumes (defined as those with 10,000 or more stays that changed by less than 5 percent in the transition period) after introduction of ICD-10-CM coding.

Table 3. Frequency of Inpatient Stays With High-Volume Principal Conditions That Remained Stable Before and After Implementation of ICD-10-CM, by CCS Diagnosis Category

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013-2014 (Baseline)	2014-2015 (Transition)
218: Liveborn	470,149	474,957	468,240	1.0	-1.4
657: Mood disorders	145,510	152,269	154,226	4.6	1.3
108: Congestive heart failure; nonhypertensive	102,766	108,129	109,339	5.2	1.1
106: Cardiac dysrhythmias	80,384	80,549	79,589	0.2	-1.2
237: Complication of device; implant or graft	78,159	79,617	76,170	1.9	-4.3
193: OB-related trauma to perineum and vulva	77,444	74,514	72,709	-3.8	-2.4
100: Acute myocardial infarction	73,560	75,920	79,698	3.2	5.0
109: Acute cerebrovascular disease	71,143	75,021	77,011	5.5	2.7
197: Skin and subcutaneous tissue infections	70,455	70,604	71,752	0.2	1.6
205: Spondylosis; intervertebral disc disorders; other back problems	67,790	68,137	67,978	0.5	-0.2
659: Schizophrenia and other psychotic disorders	65,322	66,283	67,985	1.5	2.6
50: Diabetes mellitus with complications	61,879	64,525	63,691	4.3	-1.3
159: Urinary tract infections	60,548	62,227	60,717	2.8	-2.4
189: Previous C-section	60,308	61,319	58,973	1.7	-3.8

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013-2014 (Baseline)	2014-2015 (Transition)
157: Acute and unspecified renal failure	54,297	58,645	58,613	8.0	-0.1
149: Biliary tract disease	51,332	50,190	48,696	-2.2	-3.0
101: Coronary atherosclerosis and other heart disease	48,556	45,138	44,975	-7.0	-0.4
153: Gastrointestinal hemorrhage	43,789	45,689	45,028	4.3	-1.4
145: Intestinal obstruction without hernia	42,426	42,919	42,410	1.2	-1.2
152: Pancreatic disorders (not diabetes)	36,502	37,363	39,002	2.4	4.4
146: Diverticulosis and diverticulitis	35,636	36,201	35,824	1.6	-1.0
83: Epilepsy; convulsions	33,432	34,674	35,375	3.7	2.0
661: Substance-related disorders	29,863	31,002	31,340	3.8	1.1
99: Hypertension with complications and secondary hypertension	27,764	30,205	30,448	8.8	0.8
233: Intracranial injury	25,976	27,328	28,664	5.2	4.9
196: Normal pregnancy and/or delivery	24,884	23,245	23,795	-6.6	2.4
135: Intestinal infection	24,583	25,327	25,695	3.0	1.5
155: Other gastrointestinal disorders	24,056	24,806	25,596	3.1	3.2
42: Secondary malignancies	23,143	23,339	22,656	0.8	-2.9
103: Pulmonary heart disease	23,090	23,969	24,299	3.8	1.4
143: Abdominal hernia	22,060	21,418	21,917	-2.9	2.3
184: Early or threatened labor	20,113	19,490	18,939	-3.1	-2.8
45: Maintenance chemotherapy; radiotherapy	19,091	19,351	18,886	1.4	-2.4
129: Aspiration pneumonitis; food/vomitus	19,030	19,242	18,832	1.1	-2.1
118: Phlebitis; thrombophlebitis and thromboembolism	17,195	16,118	15,953	-6.3	-1.0
187: Malposition; malpresentation	16,719	16,595	16,439	-0.7	-0.9
211: Other connective tissue disease	16,552	17,456	16,696	5.5	-4.4
96: Heart valve disorders	15,498	16,710	17,511	7.8	4.8
112: Transient cerebral ischemia	15,332	14,784	14,310	-3.6	-3.2
47: Other and unspecified benign neoplasm	15,228	15,330	14,860	0.7	-3.1
19: Cancer of bronchus; lung	14,770	14,604	15,097	-1.1	3.4
154: Noninfectious gastroenteritis	14,145	14,565	14,903	3.0	2.3
130: Pleurisy; pneumothorax; pulmonary collapse	13,264	13,288	13,022	0.2	-2.0
653: Delirium, dementia, and amnestic and other cognitive disorders	13,233	13,455	13,138	1.7	-2.4
46: Benign neoplasm of uterus	12,638	13,324	12,745	5.4	-4.3
144: Regional enteritis and ulcerative colitis	11,580	11,955	12,131	3.2	1.5
14: Cancer of colon	11,288	11,217	11,083	-0.6	-1.2
234: Crushing injury or internal injury	10,886	11,314	11,528	3.9	1.9
115: Aortic; peripheral; and visceral artery aneurysms	10,410	10,576	10,924	1.6	3.3

Abbreviations: CCS, Clinical Classifications Software; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification; Q, quarter.

Notes: A complete set of results for all CCS categories is available in Appendices [B](#) and [C](#) for the State Inpatient Databases (SID) and Appendices [D](#) and [E](#) for the State Emergency Department Databases.

Source: Healthcare Cost and Utilization Project SID from 24 States.

Of the 262 CCS categories (excluding the categories for E-codes), 97 CCS categories (37 percent) had 10,000 or more stays in Q4 of 2013, 2014, or 2015 in these 24 States. Of these 97 high-volume CCS categories, the number of stays changed by less than 5 percent between Q4 2014 and Q4 2015 for the 49 CCS categories shown in Table 3. Overall, the 49 high-volume CCS categories in Table 3 constitute 53 percent of all inpatient stays in these 24 States in Q4 2015. For these diagnosis categories, it seems reasonable to examine trends crossing the ICD-9-CM to ICD-10-CM transition.

CCS Principal Diagnosis Categories With Large Decreases in Volume in ICD-10-CM

Table 4 presents frequencies of inpatient stays with diagnoses for which the volume by CCS category decreased by at least 30 percent from Q4 2014 to Q4 2015, after the introduction of ICD-10-CM coding. This table includes diagnoses that had at least 1,000 cases in the fourth quarter of 2013 or 2014 (the baseline period) for the 24 States examined here.

Table 4. CCS Principal Diagnosis Categories With a Decrease in Frequency of at Least 30 Percent During the Transition From ICD-9-CM to ICD-10-CM

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013-2014 (Baseline)	2014-2015 (Transition)
254: Rehabilitation care; fitting of prostheses; and adjustment of devices	68,514	69,378	159	1.3	-99.8
123: Influenza	6,105	18,537	1,980	203.6	-89.3
194: Forceps delivery	1,159	988	296	-14.8	-70.0
241: Poisoning by psychotropic agents	9,936	10,328	4,190	3.9	-59.4
160: Calculus of urinary tract	16,825	16,566	6,889	-1.5	-58.4
49: Diabetes mellitus without complication	1,890	1,930	865	2.1	-55.2
8: Other infections; including parasitic	1,328	1,243	582	-6.4	-53.2
85: Coma; stupor; and brain damage	2,162	1,922	974	-11.1	-49.3
670: Miscellaneous disorders	6,562	6,728	3,511	2.5	-47.8
128: Asthma	41,725	42,474	23,965	1.8	-43.6
81: Other hereditary and degenerative nervous system conditions	5,242	5,397	3,089	3.0	-42.8
171: Menstrual disorders	5,978	5,281	3,268	-11.7	-38.1
212: Other bone disease and musculoskeletal deformities	9,330	9,496	6,306	1.8	-33.6
158: Chronic kidney disease	2,879	2,590	1,766	-10.0	-31.8
217: Other congenital anomalies	6,421	6,661	4,592	3.7	-31.1
6: Hepatitis	5,726	5,575	3,845	-2.6	-31.0

Abbreviations: CCS, Clinical Classifications Software; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification; Q, quarter.

Notes: The CCS categories in the table are select categories with at least 1,000 stays in Q4 2013 or 2014. A complete set of results for all CCS categories is available in Appendices [B](#) and [C](#) for the State Inpatient Databases (SID) and Appendices [D](#) and [E](#) for the State Emergency Department Databases.

Source: Healthcare Cost and Utilization Project SID from 24 States.

There were 16 CCS categories with at least 1,000 stays in the baseline period for which the number of stays decreased by 30 percent or more between Q4 2014 and Q4 2015. The CCS categories with the highest volumes of stays for which we observed such a change were category 254, *Rehabilitation care, fitting of prostheses, and adjustment of devices* (decreased from 69,378 to 159, by 99.8 percent); 128, *Asthma* (decreased from 42,474 to 23,965, by 43.6 percent); and 160, *Calculus of urinary tract* (decreased from 16,566 to 6,889, by 58.4 percent).

As an example, Table 5 presents the individual ICD-9-CM and ICD-10-CM codes for CCS category 128, *Asthma* in each quarter. Across the ICD-9-CM to ICD-10-CM transition, the number of asthma discharges decreased by 43.6 percent (18,509 discharges). It appears that most of the decrease is due to a change in coding guidelines and the CCS classification rules for chronic obstructive asthma.

Table 5. Frequency of Inpatient Stays With a Principal Diagnosis of CCS 128, Asthma, and CCS 127, Chronic Obstructive Pulmonary Disease and Bronchiectasis

Code and Description ^a	Q4 2013, N	Q4 2014, N	Q4 2015, N
CCS 128: Asthma	41,725	42,474	23,965
ICD-9-CM codes			
493.01: Extrinsic asthma, with status asthmaticus	1,563	1,473	
493.02: Extrinsic asthma, with (acute) exacerbation	1,760	1,660	
493.12: Intrinsic asthma, with (acute) exacerbation	122	134	
493.20: Chronic obstructive asthma, unspecified	359	363	
493.21: Chronic obstructive asthma, with status asthmaticus	496	468	
493.22: Chronic obstructive asthma, with (acute) exacerbation	14,101	15,474	
493.90: Asthma, unspecified type, unspecified	1,465	1,381	
493.91: Asthma, unspecified type, with status asthmaticus	5,169	4,732	
493.92: Asthma unspecified type, with (acute) exacerbation	16,532	16,636	
ICD-10-CM codes			
J45.21: Mild intermittent asthma, with (acute) exacerbation			1,021
J45.22: Mild intermittent asthma, with status asthmaticus			684
J45.31: Mild persistent asthma, with (acute) exacerbation			843
J45.32: Mild persistent asthma, with status asthmaticus			602
J45.41: Moderate persistent asthma, with (acute) exacerbation			1,679
J45.42: Moderate persistent asthma, with status asthmaticus			1,148
J45.51: Severe persistent asthma, with (acute) exacerbation			1,129
J45.52: Severe persistent asthma, with status asthmaticus			680
J45.901: Unspecified asthma, with (acute) exacerbation			12,111
J45.902: Unspecified asthma, with status asthmaticus			2,926

Code and Description ^a	Q4 2013, N	Q4 2014, N	Q4 2015, N
J45.909: Unspecified asthma, uncomplicated			974

Abbreviations: CCS, Clinical Classifications Software; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification; Q, quarter.

Note: Only ICD-9-CM and ICD-10-CM codes with at least 100 stays in each cell are displayed in the table.

Source: Healthcare Cost and Utilization Project State Inpatient Databases from 24 States.

Under ICD-9-CM, CCS category 128, *Asthma*, included diagnosis subcategory 493.2x, *Chronic obstructive asthma*. These ICD-9-CM diagnosis codes collectively accounted for 14,956 discharges in Q4 2013 and 16,305 discharges in Q4 2014.

Under ICD-10-CM, chronic obstructive asthma is recorded using diagnosis category J44.-, *Other chronic obstructive pulmonary disease (COPD)*. These diagnosis codes are classified under CCS category 127, *Chronic obstructive pulmonary disease and bronchiectasis* (also presented in Table 5), rather than CCS 128, *Asthma*. In Q4 2015, there were 70,929 discharges with a principal diagnosis of J44.-. However, this count far exceeds the number of stays with *Chronic obstructive asthma* captured by ICD-9-CM code 493.2x in 2013 and 2014. Part of this total likely would represent cases previously coded as 493.2x in ICD-9-CM and part likely would be due to other conditions previously coded as a form of COPD. CCS 127, *COPD and bronchiectasis*, only increased by 3,629 discharges (5.2 percent) during the ICD-10-CM transition period. Therefore, it is not possible to determine which discharges with a diagnosis of J44.- should instead be mapped to CCS 128, *Asthma*, to maintain a consistent trend from ICD-9-CM to ICD-10-CM.

Notably, ICD-10-CM coding guidelines specify that when applicable, coders should use a J45 asthma code along with the J44 COPD code. For example, the American Hospital Association (AHA) Coding Clinic™ for ICD-10-CM published a scenario about the appropriate coding assignment for a diagnosis of acute exacerbation of chronic obstructive pulmonary disease with acute exacerbation of moderate persistent asthma.⁵ The guidance directs coders to assign both code J44.1, *Chronic obstructive pulmonary disease with (acute) exacerbation* and J45.41, *Moderate persistent asthma with (acute) exacerbation*. Despite these coding guidelines, based on the J45 totals reported in Table 5 (and in turn, the CCS 128 totals for Q4 2015), it does not appear that double coding occurred in all cases.

⁵ AHA Coding Clinic support statement related to the coding of acute exacerbation of chronic obstructive pulmonary disease with acute exacerbation of moderate persistent asthma was published in AHA Coding Clinic, 1Q 2017, page 26. Chicago, IL: American Hospital Association.

CCS Principal Diagnosis Categories With Large Increases in Volume in ICD-10-CM

Table 6 presents frequencies of inpatient stays with diagnoses where the volume by CCS category increased by at least 30 percent from Q4 2014 to Q4 2015, after the introduction of ICD-10-CM coding. This table includes diagnoses that had at least 1,000 cases in the fourth quarter of 2015 for the 24 States examined here.

Table 6. CCS Principal Diagnosis Categories With an Increase in Frequency of at Least 30 Percent During the Transition From ICD-9-CM to ICD-10-CM

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013-2014 (Baseline)	2014-2015 (Transition)
662: Suicide and intentional self-inflicted injury	355	427	16,177	20.3	3,688.5
249: Shock	278	266	2,264	-4.3	751.1
113: Late effects of cerebrovascular disease	2,152	2,103	16,010	-2.3	661.3
258: Other screening for suspected conditions (not mental disorders or infectious disease)	321	263	1,533	-18.1	482.9
257: Other aftercare	4,221	3,926	19,170	-7.0	388.3
3: Bacterial infection; unspecified site	853	879	3,459	3.0	293.5
161: Other diseases of kidney and ureters	5,045	5,032	14,270	-0.3	183.6
82: Paralysis	1,065	1,187	2,936	11.5	147.3
252: Malaise and fatigue	3,062	3,344	7,133	9.2	113.3
79: Parkinson's disease	1,487	1,619	2,748	8.9	69.7
210: Systemic lupus erythematosus and connective tissue disorders	2,022	2,033	3,406	0.5	67.5
98: Essential hypertension	5,905	5,839	9,306	-1.1	59.4
209: Other acquired deformities	7,701	7,899	11,732	2.6	48.5
228: Skull and face fractures	5,643	5,728	7,943	1.5	38.7
244: Other injuries and conditions due to external causes	7,811	7,771	10,589	-0.5	36.3
201: Infective arthritis and osteomyelitis (except that caused by tuberculosis or sexually transmitted disease)	10,343	10,494	14,074	1.5	34.1
243: Poisoning by nonmedicinal substances	1,557	1,716	2,286	10.2	33.2

Abbreviations: CCS, Clinical Classifications Software; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification; Q, quarter.

Notes: The CCS categories in the table are select categories with at least 1,000 stays in at least one quarter. A complete set of results for all CCS categories is available in Appendices [B](#) and [C](#) for the State Inpatient Databases (SID) and Appendices [D](#) and [E](#) for the State Emergency Department Databases.

Source: Healthcare Cost and Utilization Project SID from 24 States.

There were 17 CCS categories with at least 1,000 stays in the fourth quarter of 2015 for which the number of stays increased by 30 percent or more over the transition period. The CCS categories with the largest percent increases were 662, *Suicide and intentional self-inflicted injury* (increased from 427 to 16,177, by 3,688.5 percent); 249, *Shock* (increased from 266 to

2,264, by 751.1 percent); and 113, *Late effects of cerebrovascular disease* (increased from 2,103 to 16,010, by 661.3 percent).

As an example, Table 7 presents the individual ICD-9-CM and ICD-10-CM codes for CCS category 113, *Late effects of cerebrovascular disease*. This condition increased by 661.3 percent during the 2014–2015 transition. It appears that much of the increase is attributable to discharges with ICD-10-CM codes of I69.35x, *Hemiplegia and hemiparesis following cerebral infarction*. Combined, this group of codes constituted 8,752 stays in Q4 2015—more than half of all stays with a CCS category 113 principal diagnosis. The number of I69.35x discharges in Q4 2015 alone is more than four times the Q4 CCS category 113 discharge totals under ICD-9-CM (2,152 in Q4 2013 and 2,103 in Q4 2014).

Table 7. Frequency of Inpatient Stays With a Principal Diagnosis of CCS 113, Late Effects of Cerebrovascular Disease

Code and Description	Q4 2013, N	Q4 2014, N	Q4 2015, N
CCS 113: Late effects of cerebrovascular disease (CVD)	2,152	2,103	16,010
ICD-9-CM codes			
438.20: Late effects of CVD hemiplegia affecting unspecified side	304	288	
438.82: Other late effects of CVD dysphagia	127	144	
438.89: Other late effects of CVD	1,288	1,240	
ICD-10-CM codes			
I69.11: Cognitive deficits following nontraumatic intracerebral hemorrhage			115
I69.151: Hemiplegia & hemiparesis follow nontraumatic intracerebral hemorrhage affecting right dominant side			359
I69.154: Hemiplegia and hemiparesis following nontraumatic intracerebral hemorrhage affecting left non-dominant side			423
I69.198: Other sequelae of nontraumatic intracerebral hemorrhage			140
I69.251: Hemiplegia and hemiparesis following other nontraumatic intracranial hemorrhage affecting right dominant side			228
I69.254: Hemiplegia and hemiparesis following other nontraumatic intracranial hemorrhage affecting left non-dominant side			243
I69.298: Other sequelae of other nontraumatic intracranial hemorrhage			108
I69.30: Unspecified sequelae of cerebral infarction			102
I69.31: Cognitive deficits following cerebral infarction			393
I69.320: Aphasia following cerebral infarction			495
I69.322: Dysarthria following cerebral infarction			214
I69.351: Hemiplegia and hemiparesis following cerebral infarction affecting right dominant side			3,999
I69.352: Hemiplegia and hemiparesis following cerebral infarction affecting left dominant side			225

Code and Description	Q4 2013, N	Q4 2014, N	Q4 2015, N
I69.353: Hemiplegia and hemiparesis following cerebral infarction affecting right non-dominant side			133
I69.354: Hemiplegia and hemiparesis following cerebral infarction affecting left non-dominant side			4,144
I69.359: Hemiplegia and hemiparesis following cerebral infarction affecting unspecified side			251
I69.391: Dysphagia following cerebral infarction			446
I69.393: Ataxia following cerebral infarction			500
I69.398: Other sequelae of cerebral infarction			1,368
I69.998: Other sequelae following unspecified cerebrovascular disease			105
I69.951: Hemiplegia and hemiparesis following unspecified cerebrovascular disease affecting right dominant side			151
I69.954: Hemiplegia and hemiparesis following unspecified cerebrovascular disease affecting left non-dominant side			181

Abbreviations: CCS, Clinical Classifications Software; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification; Q, quarter.

Note: Only ICD-9-CM and ICD-10-PCS codes with at least 100 stays in each cell are displayed in the table. Please see https://www.hcup-us.ahrq.gov/tools_software.jsp for a full list of codes included in the Clinical Classifications Software categories.

Source: Healthcare Cost and Utilization Project State Inpatient Databases from 24 States.

Codes in category I69, *Sequelae of cerebrovascular disease*, can be reported as principal or secondary diagnosis depending on the circumstances of the admission. One area of interest is rehabilitation admission/encounter coding. The principal diagnosis assignment was drastically changed from ICD-9-CM. In ICD-9-CM an aftercare code from category V57, *Care involving use of rehabilitation procedures*, was reported as the principal diagnosis for rehabilitation admission/encounters. However, under ICD-10-CM guidelines the principal diagnosis for a rehabilitation admission is the condition for which the service is being performed rather than an aftercare code.⁶ The official guideline states:

When the purpose for the admission/encounter is rehabilitation, sequence first the code for the condition for which the service is being performed. For example, for an admission/encounter for rehabilitation for right-sided dominant hemiplegia following a cerebrovascular infarction, report code I69.351, Hemiplegia and hemiparesis following cerebral infarction affecting right dominant side, as the first-listed or principal diagnosis.

Therefore, the increase in volume for I69 codes is most likely due to rehabilitation admissions. The rehabilitation cases for sequela of cerebrovascular disease patients are no longer included in CCS 254, *Rehabilitation care; fitting of prostheses; and adjustment of devices* (see Table 4) but instead are now included in CCS 113, *Late effects of cerebrovascular disease*.

⁶ National Center for Health Statistics. ICD-10-CM Official Guidelines for Coding and Reporting FY 2018, Section II.K, p. 105. Available at https://www.cdc.gov/nchs/data/icd/10cmguidelines_fy2018_final.pdf.

CCS Diagnoses in the State Emergency Department Databases

Principal diagnoses in the SID are assigned at the date of discharge and describe the chief reason for obtaining care. The SEDD is a database of outpatient data, and diagnoses in the SEDD more often correspond to patient symptoms than to medical conditions. The CCS categories frequently observed in the SEDD often are quite different from the categories frequently observed in the SID. In this document, we present frequencies for CCS all-listed diagnosis categories in the SEDD, because the concept of “principal diagnosis” does not apply to ED data.

Table 8 presents frequencies for a select group of CCS diagnosis categories in the SEDD with the 20 most frequent conditions prior to the introduction of ICD-10-CM coding.

Table 8. Frequency of All-Listed Diagnoses Seen During Treat-and-Release ED Visits, 20 Most Frequent Diagnoses Prior to ICD-10-CM (2013 and 2014), by CCS Diagnosis Category

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013-2014 (Baseline)	2014-2015 (Transition)
98: Essential hypertension	1,492,260	1,751,860	1,913,340	17.4	9.2
663: Screening and history of mental health and substance abuse codes	1,395,868	1,842,596	576,158	32.0	-68.7
257: Other aftercare	1,025,093	1,280,647	1,376,224	24.9	7.5
251: Abdominal pain	905,240	968,221	1,021,109	7.0	5.5
126: Other upper respiratory infections	848,426	1,012,203	931,348	19.3	-8.0
259: Residual codes; unclassified	756,223	887,782	1,372,391	17.4	54.6
239: Superficial injury; contusion	717,984	728,365	727,857	1.4	-0.1
205: Spondylosis; intervertebral disc disorders; other back problems	715,501	786,293	780,491	9.9	-0.7
49: Diabetes mellitus without complication	694,938	811,320	775,047	16.7	-4.5
250: Nausea and vomiting	654,491	700,121	701,576	7.0	0.2
133: Other lower respiratory disease	647,297	750,831	633,948	16.0	-15.6
232: Sprains and strains	616,095	624,901	623,685	1.4	-0.2
53: Disorders of lipid metabolism	585,183	686,965	687,023	17.4	0.0
253: Allergic reactions	581,046	698,968	833,911	20.3	19.3
128: Asthma	573,682	702,954	694,233	22.5	-1.2
95: Other nervous system disorders	563,313	645,894	542,930	14.7	-15.9
211: Other connective tissue disease	548,592	614,537	571,487	12.0	-7.0
102: Nonspecific chest pain	539,362	585,453	653,438	8.5	11.6
84: Headache; including migraine	531,952	587,200	598,407	10.4	1.9
155: Other gastrointestinal disorders	497,877	561,176	596,639	12.7	6.3

Abbreviations: CCS, Clinical Classifications Software; ED, emergency department; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification; Q, quarter.

Notes: A complete set of results for all CCS categories is available in Appendices [B](#) and [C](#) for the State Inpatient Databases (SID) and Appendices [D](#) and [E](#) for the State Emergency Department Databases.

Source: Healthcare Cost and Utilization Project SEDD from 17 States.

Some of the 20 conditions in Table 8 remained stable during the transition period (e.g., category 239, *Superficial injury/contusion*, and 232, *Sprains and strains*, both of which changed by less than 1 percent over the transition period). CCS category 259, *Residual codes*, had the largest increase (54.6 percent), whereas other CCS categories had large decreases (e.g., 663, *Screening and history of mental health and substance abuse codes*, and 95, *Other nervous system disorders*, which decreased by 68.7 percent and 15.9 percent, respectively).

As an example, Table 9 presents tobacco-related ICD-9-CM and ICD-10-CM codes classified under CCS category 661, *Substance-related disorders*, and CCS category 663, *Screening and history of mental health and substance abuse codes*. CCS category 663, *Screening and history of mental health and substance abuse codes*, decreased by 68.7 percent (1,266,438 discharges) during the ICD-10-CM transition period. It appears that the decrease primarily is due to a change in available codes and CCS classification rules related to tobacco use and nicotine dependence.

Table 9. Frequency of All-Listed Diagnosis Categories in an Emergency Department With a Principal Diagnosis of CCS 661, Substance-Related Disorders, and CCS 663, Screening and History of Mental Health and Substance Abuse Codes

Code and Description	Q4 2013, N	Q4 2014, N	Q4 2015, N
CCS 661: Substance-related disorders	194,992	223,912	1,472,853
ICD-9-CM codes			
<i>No tobacco-related codes</i>			
ICD-10-CM codes			
F17.200: Nico depend, unspec, uncomplicated			480,466
F17.201: Nico depend, unspec, in remission			1,084
F17.203: Nico depend unspec, w withdrawal			190
F17.208: Nico depend, unspec, w oth nico-induced dis			149
F17.209: Nico depend, unspec, w unspec nico-induced dis			308
F17.210: Nico depend, cigarettes, uncomplicated			804,338
F17.211: Nico depend, cigarettes, in remission			2,024
F17.213: Nico depend, cigarettes, w withdrawal			190
F17.218: Nico depend, cigarettes, w oth nico-induced dis			197
F17.219: Nico depend, cigarettes, w unspec nico-induced dis			855
F17.220: Nico depend, chewing tobacco, uncomplicated			10,054
F17.290: Nico depend, oth tobacco prod, uncomplicated			15,535
F17.299: Nico depend, oth tobacco prod, w unspec nico-induced dis			200
CCS 663: Screening and history of MHSA codes	1,395,868	1,842,596	576,158
ICD-9-CM codes			
305.1: Tobacco use disorder	1,096,616	1,392,167	
v158.2: History of tobacco use	282,953	431,030	
ICD-10-CM codes			
Z87.891: Personal history of nicotine dependence			562,525

Abbreviations: CCS, Clinical Classifications Software; dep, dependence; dis, disorder; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification; MHSA, mental health and substance abuse; nico, nicotine; oth, other; prod, product; Q, quarter; unspec, unspecified; w, with.

Notes: Only tobacco-related diagnosis codes with at least 100 stays in each cell are included in this table. Other ICD-9-CM and ICD-10-CM diagnosis codes classified under CCS 661 and CCS 663 are not presented.

Under ICD-9-CM, diagnosis code 305.1, *Tobacco use disorder*, was used to code tobacco use. This ICD-9-CM diagnosis code was classified under CCS category 663, *Screening and history of mental health and substance abuse codes*, and it accounted for 1,096,616 discharges in Q4 2013 and 1,392,167 discharges in Q4 2014. Under ICD-9-CM, there was no code available for tobacco or nicotine dependence.

Under ICD-10-CM, the use of tobacco was assigned to diagnosis category F17, *Nicotine dependence*. The American Hospital Association (AHA) Coding Clinic for ICD-10-CM published

a scenario that directed coders to code a diagnosis of “smoker” to a nicotine dependence code.⁷ Because tobacco use is classified as a dependence under ICD-10-CM, the F17 category was assigned to CCS category 661, *Substance-related disorders*, which also includes dependence codes for other types of substances. With the addition of tobacco dependence, the number of records in this CCS category increased by 557.8 percent (1,247,941 discharges) over the transition period from Q4 2014 to Q4 2015. In Q4 2015, ICD-10-CM diagnosis category F17 accounted for 1,315,782 discharges, which was similar to the volume from 305.1, *Tobacco use disorder*, in ICD-9-CM in Q4 2014.

In summary, it appears that both the substantial decrease in the number of discharges for CCS category 663 and the substantial increase for CCS category 661 are due to a shift in the coding of tobacco use from ICD-9-CM diagnosis code 305.1 to ICD-10-CM diagnosis category F17.

CONCLUSION

Researchers often rely on the grouping of individual ICD-9-CM diagnosis codes into broad, clinically meaningful categories to examine trends in conditions across time. The grouping of codes is expected to be even more critical to the ability to track longitudinal trends following the transition from the ICD-9-CM to the ICD-10-CM coding systems. The Clinical Classifications Software (CCS) for ICD-10-CM is one tool designed to capture groups of hospital diagnoses that are similar to those used in the CCS for ICD-9-CM. However, grouping individual ICD-9-CM and ICD-10-CM codes into the same categories of related diagnoses does not resolve the differences between the two coding systems or coding guidelines.

Compared with CCS procedures, CCS diagnosis categories demonstrated greater stability across the transition period. For about three-quarters of diagnosis categories, frequencies changed by less than 20 percent during the switch from ICD-9-CM to ICD-10-CM in both inpatient and emergency department data. Some CCS categories exhibit differences in trends following the transition to ICD-10-CM coding. In inpatient data, frequencies changed for 39 categories (15 percent) by 20 to 49 percent and more than 50 percent for 25 categories (10 percent). In emergency department data, frequencies changed for 48 categories (18 percent) by 20 to 49 percent and more than 50 percent for 17 categories (6 percent). Although the transition for diagnoses provides greater consistency than does the transition for procedures, there still are a large number of conditions where trends across the ICD-9-CM to ICD-10-CM transition will be problematic. The use of CCS categories as a categorization tool in this document is illustrative, and similar problems with other diagnostic grouping tools should be expected and examined.

This preliminary evaluation of existing ICD-10-CM-coded HCUP data indicates that a new categorization approach may be necessary. Development of a categorization scheme designed

⁷ AHA Coding Clinic support statement for the coding of a “smoker” diagnosis was published in AHA Coding Clinic, 4Q 2013, pages 108-109. Chicago, IL: American Hospital Association.

specifically for ICD-10-CM coding will enable researchers to group clinically meaningful diagnoses for analysis.

APPENDIX A: HCUP PARTNER ORGANIZATIONS

Alaska Department of Health and Social Services
Alaska State Hospital and Nursing Home Association
Arizona Department of Health Services
Arkansas Department of Health
California Office of Statewide Health Planning and Development
Colorado Hospital Association
Connecticut Hospital Association
District of Columbia Hospital Association
Florida Agency for Health Care Administration
Georgia Hospital Association
Hawaii Health Information Corporation
Illinois Department of Public Health
Indiana Hospital Association
Iowa Hospital Association
Kansas Hospital Association
Kentucky Cabinet for Health and Family Services
Louisiana Department of Health
Maine Health Data Organization
Maryland Health Services Cost Review Commission
Massachusetts Center for Health Information and Analysis
Michigan Health & Hospital Association
Minnesota Hospital Association
Mississippi State Department of Health
Missouri Hospital Industry Data Institute
Montana Hospital Association
Nebraska Hospital Association
Nevada Department of Health and Human Services
New Hampshire Department of Health & Human Services
New Jersey Department of Health
New Mexico Department of Health
New York State Department of Health
North Carolina Department of Health and Human Services
North Dakota (data provided by the Minnesota Hospital Association)
Ohio Hospital Association
Oklahoma State Department of Health
Oregon Association of Hospitals and Health Systems
Oregon Office of Health Analytics
Pennsylvania Health Care Cost Containment Council
Rhode Island Department of Health
South Carolina Revenue and Fiscal Affairs Office
South Dakota Association of Healthcare Organizations
Tennessee Hospital Association
Texas Department of State Health Services
Utah Department of Health
Vermont Association of Hospitals and Health Systems
Virginia Health Information
Washington State Department of Health

West Virginia Department of Health and Human Resources, West Virginia Health Care Authority
Wisconsin Department of Health Services
Wyoming Hospital Association

APPENDIX B: CHANGES IN CCS PRINCIPAL DIAGNOSIS CATEGORIES IN INPATIENT DATA (HCUP STATE INPATIENT DATABASES) FROM ICD-9-CM TO ICD-10-CM, SORTED BY CCS NUMBER (BODY SYSTEM)

Shaded rows indicate those Clinical Classifications Software (CCS) diagnosis categories that changed by less than 5 percent with the introduction of the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM).

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
1: Tuberculosis	662	656	680	-0.9	3.7
2: Septicemia (except in labor)	169,500	201,666	228,337	19.0	13.2
3: Bacterial infection; unspecified site	853	879	3,459	3.0	293.5
4: Mycoses	2,944	2,989	2,165	1.5	-27.6
5: HIV infection	3,935	3,912	3,137	-0.6	-19.8
6: Hepatitis	5,726	5,575	3,845	-2.6	-31.0
7: Viral infection	6,977	7,869	7,237	12.8	-8.0
8: Other infections; including parasitic	1,328	1,243	582	-6.4	-53.2
9: Sexually transmitted infections (not HIV or hepatitis)	443	487	516	9.9	6.0
10: Immunizations and screening for infectious disease	721	720	394	-0.1	-45.3
11: Cancer of head and neck	3,746	3,697	3,622	-1.3	-2.0
12: Cancer of esophagus	1,455	1,496	1,653	2.8	10.5
13: Cancer of stomach	2,682	2,670	2,539	-0.4	-4.9
14: Cancer of colon	11,288	11,217	11,083	-0.6	-1.2
15: Cancer of rectum and anus	4,906	4,882	4,817	-0.5	-1.3
16: Cancer of liver and intrahepatic bile duct	2,631	2,721	2,843	3.4	4.5
17: Cancer of pancreas	4,240	4,428	4,565	4.4	3.1
18: Cancer of other GI organs; peritoneum	2,486	2,488	2,408	0.1	-3.2
19: Cancer of bronchus; lung	14,770	14,604	15,097	-1.1	3.4
20: Cancer; other respiratory and intrathoracic	249	219	297	-12.0	35.6
21: Cancer of bone and connective tissue	1,736	1,760	1,724	1.4	-2.0
22: Melanomas of skin	337	335	306	-0.6	-8.7
23: Other non-epithelial cancer of skin	675	730	665	8.1	-8.9
24: Cancer of breast	7,448	6,169	5,872	-17.2	-4.8
25: Cancer of uterus	3,527	3,443	3,211	-2.4	-6.7
26: Cancer of cervix	1,473	1,405	1,313	-4.6	-6.5
27: Cancer of ovary	2,992	2,883	3,051	-3.6	5.8
28: Cancer of other female genital organs	729	667	655	-8.5	-1.8
29: Cancer of prostate	8,101	8,264	8,874	2.0	7.4
30: Cancer of testis	214	195	200	-8.9	2.6
31: Cancer of other male genital organs	95	115	116	21.1	0.9
32: Cancer of bladder	3,440	3,407	3,437	-1.0	0.9
33: Cancer of kidney and renal pelvis	5,663	5,809	5,974	2.6	2.8

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
34: Cancer of other urinary organs	395	494	444	25.1	-10.1
35: Cancer of brain and nervous system	4,267	4,621	4,916	8.3	6.4
36: Cancer of thyroid	2,216	1,825	1,592	-17.6	-12.8
37: Hodgkin`s disease	459	533	490	16.1	-8.1
38: Non-Hodgkin`s lymphoma	4,538	4,510	4,661	-0.6	3.3
39: Leukemias	5,150	5,045	5,416	-2.0	7.4
40: Multiple myeloma	2,093	2,041	2,300	-2.5	12.7
41: Cancer; other and unspecified primary	924	886	1,087	-4.1	22.7
42: Secondary malignancies	23,143	23,339	22,656	0.8	-2.9
43: Malignant neoplasm without specification of site	1,064	1,072	1,308	0.8	22.0
44: Neoplasms of unspecified nature or uncertain behavior	5,294	5,466	5,264	3.2	-3.7
45: Maintenance chemotherapy; radiotherapy	19,091	19,351	18,886	1.4	-2.4
46: Benign neoplasm of uterus	12,638	13,324	12,745	5.4	-4.3
47: Other and unspecified benign neoplasm	15,228	15,330	14,860	0.7	-3.1
48: Thyroid disorders	3,495	3,091	2,849	-11.6	-7.8
49: Diabetes mellitus without complication	1,890	1,930	865	2.1	-55.2
50: Diabetes mellitus with complications	61,879	64,525	63,691	4.3	-1.3
51: Other endocrine disorders	6,247	6,593	6,835	5.5	3.7
52: Nutritional deficiencies	1,236	1,409	1,621	14.0	15.0
53: Disorders of lipid metabolism	91	159	190	74.7	19.5
54: Gout and other crystal arthropathies	1,781	1,802	2,179	1.2	20.9
55: Fluid and electrolyte disorders	41,905	43,293	38,494	3.3	-11.1
56: Cystic fibrosis	1,757	1,691	1,940	-3.8	14.7
57: Immunity disorders	200	243	759	21.5	212.3
58: Other nutritional; endocrine; and metabolic disorders	23,801	26,312	27,652	10.5	5.1
59: Deficiency and other anemia	22,110	21,196	18,345	-4.1	-13.5
60: Acute posthemorrhagic anemia	4,764	5,207	5,885	9.3	13.0
61: Sickle cell anemia	9,394	9,618	9,809	2.4	2.0
62: Coagulation and hemorrhagic disorders	4,109	3,954	3,980	-3.8	0.7
63: Diseases of white blood cells	7,344	7,628	6,981	3.9	-8.5
64: Other hematologic conditions	620	608	717	-1.9	17.9
76: Meningitis (except that caused by tuberculosis or sexually transmitted disease)	4,153	3,803	4,215	-8.4	10.8
77: Encephalitis (except that caused by tuberculosis or sexually transmitted disease)	1,347	1,465	1,652	8.8	12.8
78: Other CNS infection and poliomyelitis	1,319	1,301	1,327	-1.4	2.0
79: Parkinson`s disease	1,487	1,619	2,748	8.9	69.7
80: Multiple sclerosis	2,671	2,679	3,113	0.3	16.2
81: Other hereditary and degenerative nervous system conditions	5,242	5,397	3,089	3.0	-42.8
82: Paralysis	1,065	1,187	2,936	11.5	147.3
83: Epilepsy; convulsions	33,432	34,674	35,375	3.7	2.0

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
84: Headache; including migraine	7,958	7,837	9,023	-1.5	15.1
85: Coma; stupor; and brain damage	2,162	1,922	974	-11.1	-49.3
86: Cataract	17	31	22	82.4	-29.0
87: Retinal detachments; defects; vascular occlusion; and retinopathy	437	412	302	-5.7	-26.7
88: Glaucoma	70	87	70	24.3	-19.5
89: Blindness and vision defects	667	658	689	-1.3	4.7
90: Inflammation; infection of eye (except that caused by tuberculosis or sexually transmitted disease)	2,136	1,545	1,630	-27.7	5.5
91: Other eye disorders	867	920	926	6.1	0.7
92: Otitis media and related conditions	1,133	1,112	1,258	-1.9	13.1
93: Conditions associated with dizziness or vertigo	5,971	5,932	5,489	-0.7	-7.5
94: Other ear and sense organ disorders	834	828	883	-0.7	6.6
95: Other nervous system disorders	31,079	33,360	42,124	7.3	26.3
96: Heart valve disorders	15,498	16,710	17,511	7.8	4.8
97: Peri-; endo-; and myocarditis; cardiomyopathy (except that caused by tuberculosis or sexually transmitted disease)	8,420	8,534	8,987	1.4	5.3
98: Essential hypertension	5,905	5,839	9,306	-1.1	59.4
99: Hypertension with complications and secondary hypertension	27,764	30,205	30,448	8.8	0.8
100: Acute myocardial infarction	73,560	75,920	79,698	3.2	5.0
101: Coronary atherosclerosis and other heart disease	48,556	45,138	44,975	-7.0	-0.4
102: Nonspecific chest pain	38,289	35,582	32,662	-7.1	-8.2
103: Pulmonary heart disease	23,090	23,969	24,299	3.8	1.4
104: Other and ill-defined heart disease	1,347	1,429	1,416	6.1	-0.9
105: Conduction disorders	6,407	6,538	7,114	2.0	8.8
106: Cardiac dysrhythmias	80,384	80,549	79,589	0.2	-1.2
107: Cardiac arrest and ventricular fibrillation	2,751	2,908	3,116	5.7	7.2
108: Congestive heart failure; nonhypertensive	102,766	108,129	109,339	5.2	1.1
109: Acute cerebrovascular disease	71,143	75,021	77,011	5.5	2.7
110: Occlusion or stenosis of precerebral arteries	11,830	11,544	10,842	-2.4	-6.1
111: Other and ill-defined cerebrovascular disease	3,045	3,250	3,453	6.7	6.2
112: Transient cerebral ischemia	15,332	14,784	14,310	-3.6	-3.2
113: Late effects of cerebrovascular disease	2,152	2,103	16,010	-2.3	661.3
114: Peripheral and visceral atherosclerosis	16,779	16,393	15,059	-2.3	-8.1
115: Aortic; peripheral; and visceral artery aneurysms	10,410	10,576	10,924	1.6	3.3
116: Aortic and peripheral arterial embolism or thrombosis	3,416	3,629	3,222	6.2	-11.2
117: Other circulatory disease	12,365	12,837	10,667	3.8	-16.9

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
118: Phlebitis; thrombophlebitis and thromboembolism	17,195	16,118	15,953	-6.3	-1.0
119: Varicose veins of lower extremity	236	241	356	2.1	47.7
120: Hemorrhoids	3,468	3,655	3,055	5.4	-16.4
121: Other diseases of veins and lymphatics	2,602	2,585	2,150	-0.7	-16.8
122: Pneumonia (except that caused by tuberculosis or sexually transmitted disease)	108,871	105,678	100,118	-2.9	-5.3
123: Influenza	6,105	18,537	1,980	203.6	-89.3
124: Acute and chronic tonsillitis	2,911	2,856	2,904	-1.9	1.7
125: Acute bronchitis	15,414	16,420	15,530	6.5	-5.4
126: Other upper respiratory infections	8,641	8,898	8,559	3.0	-3.8
127: Chronic obstructive pulmonary disease and bronchiectasis	67,997	70,044	73,673	3.0	5.2
128: Asthma	41,725	42,474	23,965	1.8	-43.6
129: Aspiration pneumonitis; food/vomitus	19,030	19,242	18,832	1.1	-2.1
130: Pleurisy; pneumothorax; pulmonary collapse	13,264	13,288	13,022	0.2	-2.0
131: Respiratory failure; insufficiency; arrest (adult)	51,290	56,149	60,802	9.5	8.3
132: Lung disease due to external agents	791	807	735	2.0	-8.9
133: Other lower respiratory disease	12,367	12,564	11,834	1.6	-5.8
134: Other upper respiratory disease	4,803	4,717	4,747	-1.8	0.6
135: Intestinal infection	24,583	25,327	25,695	3.0	1.5
136: Disorders of teeth and jaw	3,254	3,437	3,492	5.6	1.6
137: Diseases of mouth; excluding dental	2,381	2,557	2,711	7.4	6.0
138: Esophageal disorders	12,267	11,995	13,795	-2.2	15.0
139: Gastroduodenal ulcer (except hemorrhage)	4,965	4,912	4,825	-1.1	-1.8
140: Gastritis and duodenitis	9,674	9,918	9,011	2.5	-9.1
141: Other disorders of stomach and duodenum	9,341	9,643	6,835	3.2	-29.1
142: Appendicitis and other appendiceal conditions	26,810	25,117	23,650	-6.3	-5.8
143: Abdominal hernia	22,060	21,418	21,917	-2.9	2.3
144: Regional enteritis and ulcerative colitis	11,580	11,955	12,131	3.2	1.5
145: Intestinal obstruction without hernia	42,426	42,919	42,410	1.2	-1.2
146: Diverticulosis and diverticulitis	35,636	36,201	35,824	1.6	-1.0
147: Anal and rectal conditions	5,784	5,813	5,513	0.5	-5.2
148: Peritonitis and intestinal abscess	3,664	3,673	3,327	0.2	-9.4
149: Biliary tract disease	51,332	50,190	48,696	-2.2	-3.0
151: Other liver diseases	16,502	17,640	16,040	6.9	-9.1
152: Pancreatic disorders (not diabetes)	36,502	37,363	39,002	2.4	4.4
153: Gastrointestinal hemorrhage	43,789	45,689	45,028	4.3	-1.4
154: Noninfectious gastroenteritis	14,145	14,565	14,903	3.0	2.3
155: Other gastrointestinal disorders	24,056	24,806	25,596	3.1	3.2
156: Nephritis; nephrosis; renal sclerosis	1,324	1,460	1,443	10.3	-1.2

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
157: Acute and unspecified renal failure	54,297	58,645	58,613	8.0	-0.1
158: Chronic kidney disease	2,879	2,590	1,766	-10.0	-31.8
159: Urinary tract infections	60,548	62,227	60,717	2.8	-2.4
160: Calculus of urinary tract	16,825	16,566	6,889	-1.5	-58.4
161: Other diseases of kidney and ureters	5,045	5,032	14,270	-0.3	183.6
162: Other diseases of bladder and urethra	2,464	2,501	2,239	1.5	-10.5
163: Genitourinary symptoms and ill-defined conditions	3,817	3,831	3,706	0.4	-3.3
164: Hyperplasia of prostate	4,088	3,792	3,422	-7.2	-9.8
165: Inflammatory conditions of male genital organs	2,976	2,934	3,120	-1.4	6.3
166: Other male genital disorders	1,257	1,211	891	-3.7	-26.4
167: Nonmalignant breast conditions	2,221	2,157	2,074	-2.9	-3.8
168: Inflammatory diseases of female pelvic organs	3,445	3,327	3,177	-3.4	-4.5
169: Endometriosis	2,560	2,314	2,304	-9.6	-0.4
170: Prolapse of female genital organs	6,752	4,885	3,609	-27.7	-26.1
171: Menstrual disorders	5,978	5,281	3,268	-11.7	-38.1
172: Ovarian cyst	2,869	2,726	2,359	-5.0	-13.5
173: Menopausal disorders	906	767	681	-15.3	-11.2
174: Female infertility	9	11	12	22.2	9.1
175: Other female genital disorders	4,427	4,366	4,649	-1.4	6.5
176: Contraceptive and procreative management	47	41	71	-12.8	73.2
177: Spontaneous abortion	1,256	1,212	1,397	-3.5	15.3
178: Induced abortion	457	469	235	2.6	-49.9
179: Postabortion complications	177	191	38	7.9	-80.1
180: Ectopic pregnancy	1,723	1,753	1,562	1.7	-10.9
181: Other complications of pregnancy	61,837	64,687	45,383	4.6	-29.8
182: Hemorrhage during pregnancy; abruptio placenta; placenta previa	6,093	5,984	5,948	-1.8	-0.6
183: Hypertension complicating pregnancy; childbirth and the puerperium	29,337	31,298	33,725	6.7	7.8
184: Early or threatened labor	20,113	19,490	18,939	-3.1	-2.8
185: Prolonged pregnancy	40,621	43,530	40,835	7.2	-6.2
186: Diabetes or abnormal glucose tolerance complicating pregnancy; childbirth; or the puerperium	14,087	15,047	16,398	6.8	9.0
187: Malposition; malpresentation	16,719	16,595	16,439	-0.7	-0.9
188: Fetopelvic disproportion; obstruction	6,367	6,091	6,260	-4.3	2.8
189: Previous C-section	60,308	61,319	58,973	1.7	-3.8
190: Fetal distress and abnormal forces of labor	19,043	17,733	16,241	-6.9	-8.4
191: Polyhydramnios and other problems of amniotic cavity	26,530	28,173	31,828	6.2	13.0
192: Umbilical cord complication	19,694	18,454	20,904	-6.3	13.3

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
193: OB-related trauma to perineum and vulva	77,444	74,514	72,709	-3.8	-2.4
194: Forceps delivery	1,159	988	296	-14.8	-70.0
195: Other complications of birth; puerperium affecting management of mother	79,376	79,530	93,505	0.2	17.6
196: Normal pregnancy and/or delivery	24,884	23,245	23,795	-6.6	2.4
197: Skin and subcutaneous tissue infections	70,455	70,604	71,752	0.2	1.6
198: Other inflammatory condition of skin	1,457	1,433	1,540	-1.6	7.5
199: Chronic ulcer of skin	6,081	5,940	6,391	-2.3	7.6
200: Other skin disorders	1,447	1,411	1,781	-2.5	26.2
201: Infective arthritis and osteomyelitis (except that caused by tuberculosis or sexually transmitted disease)	10,343	10,494	14,074	1.5	34.1
202: Rheumatoid arthritis and related disease	1,483	1,397	1,500	-5.8	7.4
203: Osteoarthritis	143,864	147,129	158,632	2.3	7.8
204: Other non-traumatic joint disorders	5,346	5,445	4,938	1.9	-9.3
205: Spondylosis; intervertebral disc disorders; other back problems	67,790	68,137	67,978	0.5	-0.2
206: Osteoporosis	36	32	43	-11.1	34.4
207: Pathological fracture	7,244	7,628	8,067	5.3	5.8
208: Acquired foot deformities	695	621	530	-10.6	-14.7
209: Other acquired deformities	7,701	7,899	11,732	2.6	48.5
210: Systemic lupus erythematosus and connective tissue disorders	2,022	2,033	3,406	0.5	67.5
211: Other connective tissue disease	16,552	17,456	16,696	5.5	-4.4
212: Other bone disease and musculoskeletal deformities	9,330	9,496	6,306	1.8	-33.6
213: Cardiac and circulatory congenital anomalies	4,656	4,910	5,529	5.5	12.6
214: Digestive congenital anomalies	2,236	2,312	2,345	3.4	1.4
215: Genitourinary congenital anomalies	1,254	1,225	1,168	-2.3	-4.7
216: Nervous system congenital anomalies	1,006	1,056	1,354	5.0	28.2
217: Other congenital anomalies	6,421	6,661	4,592	3.7	-31.1
218: Liveborn	470,149	474,957	468,240	1.0	-1.4
219: Short gestation; low birth weight; and fetal growth retardation	2,809	2,937	2,919	4.6	-0.6
220: Intrauterine hypoxia and birth asphyxia	255	301	272	18.0	-9.6
221: Respiratory distress syndrome	1,045	1,058	1,116	1.2	5.5
222: Hemolytic jaundice and perinatal jaundice	5,602	5,468	5,760	-2.4	5.3
223: Birth trauma	112	114	106	1.8	-7.0
224: Other perinatal conditions	8,089	8,638	9,562	6.8	10.7
225: Joint disorders and dislocations; trauma-related	3,393	3,331	2,523	-1.8	-24.3
226: Fracture of neck of femur (hip)	39,874	40,422	44,847	1.4	10.9
227: Spinal cord injury	1,605	1,669	1,601	4.0	-4.1

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
228: Skull and face fractures	5,643	5,728	7,943	1.5	38.7
229: Fracture of upper limb	17,018	16,506	17,866	-3.0	8.2
230: Fracture of lower limb	28,124	28,156	31,390	0.1	11.5
231: Other fractures	26,736	28,150	33,776	5.3	20.0
232: Sprains and strains	2,764	2,600	2,391	-5.9	-8.0
233: Intracranial injury	25,976	27,328	28,664	5.2	4.9
234: Crushing injury or internal injury	10,886	11,314	11,528	3.9	1.9
235: Open wounds of head; neck; and trunk	3,525	3,507	4,320	-0.5	23.2
236: Open wounds of extremities	4,425	4,339	4,890	-1.9	12.7
237: Complication of device; implant or graft	78,159	79,617	76,170	1.9	-4.3
238: Complications of surgical procedures or medical care	57,417	57,506	60,885	0.2	5.9
239: Superficial injury; contusion	4,320	4,362	4,699	1.0	7.7
240: Burns	3,371	3,366	3,488	-0.1	3.6
241: Poisoning by psychotropic agents	9,936	10,328	4,190	3.9	-59.4
242: Poisoning by other medications and drugs	14,887	15,322	10,800	2.9	-29.5
243: Poisoning by nonmedicinal substances	1,557	1,716	2,286	10.2	33.2
244: Other injuries and conditions due to external causes	7,811	7,771	10,589	-0.5	36.3
245: Syncope	16,683	16,172	14,755	-3.1	-8.8
246: Fever of unknown origin	6,145	6,055	4,579	-1.5	-24.4
247: Lymphadenitis	1,507	1,475	1,500	-2.1	1.7
248: Gangrene	3,091	2,986	3,337	-3.4	11.8
249: Shock	278	266	2,264	-4.3	751.1
250: Nausea and vomiting	4,848	4,578	5,147	-5.6	12.4
251: Abdominal pain	15,689	14,899	12,823	-5.0	-13.9
252: Malaise and fatigue	3,062	3,344	7,133	9.2	113.3
253: Allergic reactions	2,795	2,880	2,490	3.0	-13.5
254: Rehabilitation care; fitting of prostheses; and adjustment of devices	68,514	69,378	159	1.3	-99.8
255: Administrative/social admission	291	326	456	12.0	39.9
256: Medical examination/evaluation	854	638	220	-25.3	-65.5
257: Other aftercare	4,221	3,926	19,170	-7.0	388.3
258: Other screening for suspected conditions (not mental disorders or infectious disease)	321	263	1,533	-18.1	482.9
259: Residual codes; unclassified	12,372	11,990	10,083	-3.1	-15.9
650: Adjustment disorders	5,803	5,753	5,969	-0.9	3.8
651: Anxiety disorders	5,995	6,283	6,588	4.8	4.9
652: Attention-deficit, conduct, and disruptive behavior disorders	2,455	2,477	2,921	0.9	17.9
653: Delirium, dementia, and amnestic and other cognitive disorders	13,233	13,455	13,138	1.7	-2.4
654: Developmental disorders	240	260	110	8.3	-57.7

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
655: Disorders usually diagnosed in infancy, childhood, or adolescence	740	905	1,010	22.3	11.6
656: Impulse control disorders, NEC	1,952	1,838	1,635	-5.8	-11.0
657: Mood disorders	145,510	152,269	154,226	4.6	1.3
658: Personality disorders	810	1,132	1,147	39.8	1.3
659: Schizophrenia and other psychotic disorders	65,322	66,283	67,985	1.5	2.6
660: Alcohol-related disorders	42,536	45,848	52,401	7.8	14.3
661: Substance-related disorders	29,863	31,002	31,340	3.8	1.1
662: Suicide and intentional self-inflicted injury	355	427	16,177	20.3	3,688.5
663: Screening and history of mental health and substance abuse codes	131	160	107	22.1	-33.1
670: Miscellaneous disorders	6,562	6,728	3,511	2.5	-47.8

Abbreviations: CCS, Clinical Classifications Software; CNS, central nervous system; GI, gastrointestinal; HIV, human immunodeficiency virus; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification; NA, not applicable; NEC, not elsewhere classified; OB, obstetric; Q, quarter.

Notes: Shaded rows indicate CCS diagnosis categories that changed by less than 5 percent with the introduction of ICD-10-CM. The table only includes CCS diagnosis categories; external cause (E code) categories are not included, as they are not expected to be comparable between ICD-9-CM and ICD-10-CM.

Source: Healthcare Cost and Utilization Project State Inpatient Databases from 24 States.

APPENDIX C: CHANGES IN CCS PRINCIPAL DIAGNOSIS CATEGORIES IN INPATIENT DATA (HCUP STATE INPATIENT DATABASES) FROM ICD-9-CM TO ICD-10-CM, SORTED BY PERCENTAGE CHANGE FROM 2014 TO 2015

Shaded rows indicate those Clinical Classifications Software (CCS) diagnosis categories that changed by less than 5 percent with the introduction of the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM).

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
662: Suicide and intentional self-inflicted injury	355	427	16,177	20.3	3,688.5
249: Shock	278	266	2,264	-4.3	751.1
113: Late effects of cerebrovascular disease	2,152	2,103	16,010	-2.3	661.3
258: Other screening for suspected conditions (not mental disorders or infectious disease)	321	263	1,533	-18.1	482.9
257: Other aftercare	4,221	3,926	19,170	-7.0	388.3
3: Bacterial infection; unspecified site	853	879	3,459	3.0	293.5
57: Immunity disorders	200	243	759	21.5	212.3
161: Other diseases of kidney and ureters	5,045	5,032	14,270	-0.3	183.6
82: Paralysis	1,065	1,187	2,936	11.5	147.3
252: Malaise and fatigue	3,062	3,344	7,133	9.2	113.3
176: Contraceptive and procreative management	47	41	71	-12.8	73.2
79: Parkinson`s disease	1,487	1,619	2,748	8.9	69.7
210: Systemic lupus erythematosus and connective tissue disorders	2,022	2,033	3,406	0.5	67.5
98: Essential hypertension	5,905	5,839	9,306	-1.1	59.4
209: Other acquired deformities	7,701	7,899	11,732	2.6	48.5
119: Varicose veins of lower extremity	236	241	356	2.1	47.7
255: Administrative/social admission	291	326	456	12.0	39.9
228: Skull and face fractures	5,643	5,728	7,943	1.5	38.7
244: Other injuries and conditions due to external causes	7,811	7,771	10,589	-0.5	36.3
20: Cancer; other respiratory and intrathoracic	249	219	297	-12.0	35.6
206: Osteoporosis	36	32	43	-11.1	34.4
201: Infective arthritis and osteomyelitis (except that caused by tuberculosis or sexually transmitted disease)	10,343	10,494	14,074	1.5	34.1
243: Poisoning by nonmedicinal substances	1,557	1,716	2,286	10.2	33.2
216: Nervous system congenital anomalies	1,006	1,056	1,354	5.0	28.2
95: Other nervous system disorders	31,079	33,360	42,124	7.3	26.3
200: Other skin disorders	1,447	1,411	1,781	-2.5	26.2
235: Open wounds of head; neck; and trunk	3,525	3,507	4,320	-0.5	23.2
41: Cancer; other and unspecified primary	924	886	1,087	-4.1	22.7

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
43: Malignant neoplasm without specification of site	1,064	1,072	1,308	0.8	22.0
54: Gout and other crystal arthropathies	1,781	1,802	2,179	1.2	20.9
231: Other fractures	26,736	28,150	33,776	5.3	20.0
53: Disorders of lipid metabolism	91	159	190	74.7	19.5
64: Other hematologic conditions	620	608	717	-1.9	17.9
652: Attention-deficit, conduct, and disruptive behavior disorders	2,455	2,477	2,921	0.9	17.9
195: Other complications of birth; puerperium affecting management of mother	79,376	79,530	93,505	0.2	17.6
80: Multiple sclerosis	2,671	2,679	3,113	0.3	16.2
177: Spontaneous abortion	1,256	1,212	1,397	-3.5	15.3
84: Headache; including migraine	7,958	7,837	9,023	-1.5	15.1
52: Nutritional deficiencies	1,236	1,409	1,621	14.0	15.0
138: Esophageal disorders	12,267	11,995	13,795	-2.2	15.0
56: Cystic fibrosis	1,757	1,691	1,940	-3.8	14.7
660: Alcohol-related disorders	42,536	45,848	52,401	7.8	14.3
192: Umbilical cord complication	19,694	18,454	20,904	-6.3	13.3
2: Septicemia (except in labor)	169,500	201,666	228,337	19.0	13.2
92: Otitis media and related conditions	1,133	1,112	1,258	-1.9	13.1
60: Acute posthemorrhagic anemia	4,764	5,207	5,885	9.3	13.0
191: Polyhydramnios and other problems of amniotic cavity	26,530	28,173	31,828	6.2	13.0
77: Encephalitis (except that caused by tuberculosis or sexually transmitted disease)	1,347	1,465	1,652	8.8	12.8
236: Open wounds of extremities	4,425	4,339	4,890	-1.9	12.7
40: Multiple myeloma	2,093	2,041	2,300	-2.5	12.7
213: Cardiac and circulatory congenital anomalies	4,656	4,910	5,529	5.5	12.6
250: Nausea and vomiting	4,848	4,578	5,147	-5.6	12.4
248: Gangrene	3,091	2,986	3,337	-3.4	11.8
655: Disorders usually diagnosed in infancy, childhood, or adolescence	740	905	1,010	22.3	11.6
230: Fracture of lower limb	28,124	28,156	31,390	0.1	11.5
226: Fracture of neck of femur (hip)	39,874	40,422	44,847	1.4	10.9
76: Meningitis (except that caused by tuberculosis or sexually transmitted disease)	4,153	3,803	4,215	-8.4	10.8
224: Other perinatal conditions	8,089	8,638	9,562	6.8	10.7
12: Cancer of esophagus	1,455	1,496	1,653	2.8	10.5
174: Female infertility	9	11	12	22.2	9.1
186: Diabetes or abnormal glucose tolerance complicating pregnancy; childbirth; or the puerperium	14,087	15,047	16,398	6.8	9.0
105: Conduction disorders	6,407	6,538	7,114	2.0	8.8
131: Respiratory failure; insufficiency; arrest (adult)	51,290	56,149	60,802	9.5	8.3

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
229: Fracture of upper limb	17,018	16,506	17,866	-3.0	8.2
203: Osteoarthritis	143,864	147,129	158,632	2.3	7.8
183: Hypertension complicating pregnancy; childbirth and the puerperium	29,337	31,298	33,725	6.7	7.8
239: Superficial injury; contusion	4,320	4,362	4,699	1.0	7.7
199: Chronic ulcer of skin	6,081	5,940	6,391	-2.3	7.6
198: Other inflammatory condition of skin	1,457	1,433	1,540	-1.6	7.5
29: Cancer of prostate	8,101	8,264	8,874	2.0	7.4
202: Rheumatoid arthritis and related disease	1,483	1,397	1,500	-5.8	7.4
39: Leukemias	5,150	5,045	5,416	-2.0	7.4
107: Cardiac arrest and ventricular fibrillation	2,751	2,908	3,116	5.7	7.2
94: Other ear and sense organ disorders	834	828	883	-0.7	6.6
175: Other female genital disorders	4,427	4,366	4,649	-1.4	6.5
35: Cancer of brain and nervous system	4,267	4,621	4,916	8.3	6.4
165: Inflammatory conditions of male genital organs	2,976	2,934	3,120	-1.4	6.3
111: Other and ill-defined cerebrovascular disease	3,045	3,250	3,453	6.7	6.2
137: Diseases of mouth; excluding dental	2,381	2,557	2,711	7.4	6.0
9: Sexually transmitted infections (not HIV or hepatitis)	443	487	516	9.9	6.0
238: Complications of surgical procedures or medical care	57,417	57,506	60,885	0.2	5.9
27: Cancer of ovary	2,992	2,883	3,051	-3.6	5.8
207: Pathological fracture	7,244	7,628	8,067	5.3	5.8
90: Inflammation; infection of eye (except that caused by tuberculosis or sexually transmitted disease)	2,136	1,545	1,630	-27.7	5.5
221: Respiratory distress syndrome	1,045	1,058	1,116	1.2	5.5
222: Hemolytic jaundice and perinatal jaundice	5,602	5,468	5,760	-2.4	5.3
97: Peri-; endo-; and myocarditis; cardiomyopathy (except that caused by tuberculosis or sexually transmitted disease)	8,420	8,534	8,987	1.4	5.3
127: Chronic obstructive pulmonary disease and bronchiectasis	67,997	70,044	73,673	3.0	5.2
58: Other nutritional; endocrine; and metabolic disorders	23,801	26,312	27,652	10.5	5.1
100: Acute myocardial infarction	73,560	75,920	79,698	3.2	5.0
233: Intracranial injury	25,976	27,328	28,664	5.2	4.9
651: Anxiety disorders	5,995	6,283	6,588	4.8	4.9
96: Heart valve disorders	15,498	16,710	17,511	7.8	4.8
89: Blindness and vision defects	667	658	689	-1.3	4.7
16: Cancer of liver and intrahepatic bile duct	2,631	2,721	2,843	3.4	4.5
152: Pancreatic disorders (not diabetes)	36,502	37,363	39,002	2.4	4.4
650: Adjustment disorders	5,803	5,753	5,969	-0.9	3.8

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
51: Other endocrine disorders	6,247	6,593	6,835	5.5	3.7
1: Tuberculosis	662	656	680	-0.9	3.7
240: Burns	3,371	3,366	3,488	-0.1	3.6
19: Cancer of bronchus; lung	14,770	14,604	15,097	-1.1	3.4
38: Non-Hodgkin`s lymphoma	4,538	4,510	4,661	-0.6	3.3
115: Aortic; peripheral; and visceral artery aneurysms	10,410	10,576	10,924	1.6	3.3
155: Other gastrointestinal disorders	24,056	24,806	25,596	3.1	3.2
17: Cancer of pancreas	4,240	4,428	4,565	4.4	3.1
33: Cancer of kidney and renal pelvis	5,663	5,809	5,974	2.6	2.8
188: Fetopelvic disproportion; obstruction	6,367	6,091	6,260	-4.3	2.8
109: Acute cerebrovascular disease	71,143	75,021	77,011	5.5	2.7
659: Schizophrenia and other psychotic disorders	65,322	66,283	67,985	1.5	2.6
30: Cancer of testis	214	195	200	-8.9	2.6
196: Normal pregnancy and/or delivery	24,884	23,245	23,795	-6.6	2.4
143: Abdominal hernia	22,060	21,418	21,917	-2.9	2.3
154: Noninfectious gastroenteritis	14,145	14,565	14,903	3.0	2.3
83: Epilepsy; convulsions	33,432	34,674	35,375	3.7	2.0
78: Other CNS infection and poliomyelitis	1,319	1,301	1,327	-1.4	2.0
61: Sickle cell anemia	9,394	9,618	9,809	2.4	2.0
234: Crushing injury or internal injury	10,886	11,314	11,528	3.9	1.9
247: Lymphadenitis	1,507	1,475	1,500	-2.1	1.7
124: Acute and chronic tonsillitis	2,911	2,856	2,904	-1.9	1.7
197: Skin and subcutaneous tissue infections	70,455	70,604	71,752	0.2	1.6
136: Disorders of teeth and jaw	3,254	3,437	3,492	5.6	1.6
144: Regional enteritis and ulcerative colitis	11,580	11,955	12,131	3.2	1.5
135: Intestinal infection	24,583	25,327	25,695	3.0	1.5
214: Digestive congenital anomalies	2,236	2,312	2,345	3.4	1.4
103: Pulmonary heart disease	23,090	23,969	24,299	3.8	1.4
658: Personality disorders	810	1,132	1,147	39.8	1.3
657: Mood disorders	145,510	152,269	154,226	4.6	1.3
108: Congestive heart failure; nonhypertensive	102,766	108,129	109,339	5.2	1.1
661: Substance-related disorders	29,863	31,002	31,340	3.8	1.1
32: Cancer of bladder	3,440	3,407	3,437	-1.0	0.9
31: Cancer of other male genital organs	95	115	116	21.1	0.9
99: Hypertension with complications and secondary hypertension	27,764	30,205	30,448	8.8	0.8
62: Coagulation and hemorrhagic disorders	4,109	3,954	3,980	-3.8	0.7
91: Other eye disorders	867	920	926	6.1	0.7
134: Other upper respiratory disease	4,803	4,717	4,747	-1.8	0.6
157: Acute and unspecified renal failure	54,297	58,645	58,613	8.0	-0.1
205: Spondylosis; intervertebral disc disorders; other back problems	67,790	68,137	67,978	0.5	-0.2

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
101: Coronary atherosclerosis and other heart disease	48,556	45,138	44,975	-7.0	-0.4
169: Endometriosis	2,560	2,314	2,304	-9.6	-0.4
182: Hemorrhage during pregnancy; abruptio placenta; placenta previa	6,093	5,984	5,948	-1.8	-0.6
219: Short gestation; low birth weight; and fetal growth retardation	2,809	2,937	2,919	4.6	-0.6
104: Other and ill-defined heart disease	1,347	1,429	1,416	6.1	-0.9
187: Malposition; malpresentation	16,719	16,595	16,439	-0.7	-0.9
118: Phlebitis; thrombophlebitis and thromboembolism	17,195	16,118	15,953	-6.3	-1.0
146: Diverticulosis and diverticulitis	35,636	36,201	35,824	1.6	-1.0
156: Nephritis; nephrosis; renal sclerosis	1,324	1,460	1,443	10.3	-1.2
145: Intestinal obstruction without hernia	42,426	42,919	42,410	1.2	-1.2
106: Cardiac dysrhythmias	80,384	80,549	79,589	0.2	-1.2
14: Cancer of colon	11,288	11,217	11,083	-0.6	-1.2
50: Diabetes mellitus with complications	61,879	64,525	63,691	4.3	-1.3
15: Cancer of rectum and anus	4,906	4,882	4,817	-0.5	-1.3
218: Liveborn	470,149	474,957	468,240	1.0	-1.4
153: Gastrointestinal hemorrhage	43,789	45,689	45,028	4.3	-1.4
139: Gastroduodenal ulcer (except hemorrhage)	4,965	4,912	4,825	-1.1	-1.8
28: Cancer of other female genital organs	729	667	655	-8.5	-1.8
130: Pleurisy; pneumothorax; pulmonary collapse	13,264	13,288	13,022	0.2	-2.0
11: Cancer of head and neck	3,746	3,697	3,622	-1.3	-2.0
21: Cancer of bone and connective tissue	1,736	1,760	1,724	1.4	-2.0
129: Aspiration pneumonitis; food/vomitus	19,030	19,242	18,832	1.1	-2.1
653: Delirium, dementia, and amnesic and other cognitive disorders	13,233	13,455	13,138	1.7	-2.4
45: Maintenance chemotherapy; radiotherapy	19,091	19,351	18,886	1.4	-2.4
193: OB-related trauma to perineum and vulva	77,444	74,514	72,709	-3.8	-2.4
159: Urinary tract infections	60,548	62,227	60,717	2.8	-2.4
184: Early or threatened labor	20,113	19,490	18,939	-3.1	-2.8
42: Secondary malignancies	23,143	23,339	22,656	0.8	-2.9
149: Biliary tract disease	51,332	50,190	48,696	-2.2	-3.0
47: Other and unspecified benign neoplasm	15,228	15,330	14,860	0.7	-3.1
112: Transient cerebral ischemia	15,332	14,784	14,310	-3.6	-3.2
18: Cancer of other GI organs; peritoneum	2,486	2,488	2,408	0.1	-3.2
163: Genitourinary symptoms and ill-defined conditions	3,817	3,831	3,706	0.4	-3.3
44: Neoplasms of unspecified nature or uncertain behavior	5,294	5,466	5,264	3.2	-3.7
126: Other upper respiratory infections	8,641	8,898	8,559	3.0	-3.8
189: Previous C-section	60,308	61,319	58,973	1.7	-3.8

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
167: Nonmalignant breast conditions	2,221	2,157	2,074	-2.9	-3.8
227: Spinal cord injury	1,605	1,669	1,601	4.0	-4.1
237: Complication of device; implant or graft	78,159	79,617	76,170	1.9	-4.3
46: Benign neoplasm of uterus	12,638	13,324	12,745	5.4	-4.3
211: Other connective tissue disease	16,552	17,456	16,696	5.5	-4.4
168: Inflammatory diseases of female pelvic organs	3,445	3,327	3,177	-3.4	-4.5
215: Genitourinary congenital anomalies	1,254	1,225	1,168	-2.3	-4.7
24: Cancer of breast	7,448	6,169	5,872	-17.2	-4.8
13: Cancer of stomach	2,682	2,670	2,539	-0.4	-4.9
147: Anal and rectal conditions	5,784	5,813	5,513	0.5	-5.2
122: Pneumonia (except that caused by tuberculosis or sexually transmitted disease)	108,871	105,678	100,118	-2.9	-5.3
125: Acute bronchitis	15,414	16,420	15,530	6.5	-5.4
133: Other lower respiratory disease	12,367	12,564	11,834	1.6	-5.8
142: Appendicitis and other appendiceal conditions	26,810	25,117	23,650	-6.3	-5.8
110: Occlusion or stenosis of precerebral arteries	11,830	11,544	10,842	-2.4	-6.1
185: Prolonged pregnancy	40,621	43,530	40,835	7.2	-6.2
26: Cancer of cervix	1,473	1,405	1,313	-4.6	-6.5
25: Cancer of uterus	3,527	3,443	3,211	-2.4	-6.7
223: Birth trauma	112	114	106	1.8	-7.0
93: Conditions associated with dizziness or vertigo	5,971	5,932	5,489	-0.7	-7.5
48: Thyroid disorders	3,495	3,091	2,849	-11.6	-7.8
7: Viral infection	6,977	7,869	7,237	12.8	-8.0
232: Sprains and strains	2,764	2,600	2,391	-5.9	-8.0
37: Hodgkin's disease	459	533	490	16.1	-8.1
114: Peripheral and visceral atherosclerosis	16,779	16,393	15,059	-2.3	-8.1
102: Nonspecific chest pain	38,289	35,582	32,662	-7.1	-8.2
190: Fetal distress and abnormal forces of labor	19,043	17,733	16,241	-6.9	-8.4
63: Diseases of white blood cells	7,344	7,628	6,981	3.9	-8.5
22: Melanomas of skin	337	335	306	-0.6	-8.7
245: Syncope	16,683	16,172	14,755	-3.1	-8.8
23: Other non-epithelial cancer of skin	675	730	665	8.1	-8.9
132: Lung disease due to external agents	791	807	735	2.0	-8.9
151: Other liver diseases	16,502	17,640	16,040	6.9	-9.1
140: Gastritis and duodenitis	9,674	9,918	9,011	2.5	-9.1
204: Other non-traumatic joint disorders	5,346	5,445	4,938	1.9	-9.3
148: Peritonitis and intestinal abscess	3,664	3,673	3,327	0.2	-9.4
220: Intrauterine hypoxia and birth asphyxia	255	301	272	18.0	-9.6
164: Hyperplasia of prostate	4,088	3,792	3,422	-7.2	-9.8
34: Cancer of other urinary organs	395	494	444	25.1	-10.1

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
162: Other diseases of bladder and urethra	2,464	2,501	2,239	1.5	-10.5
180: Ectopic pregnancy	1,723	1,753	1,562	1.7	-10.9
656: Impulse control disorders, NEC	1,952	1,838	1,635	-5.8	-11.0
55: Fluid and electrolyte disorders	41,905	43,293	38,494	3.3	-11.1
173: Menopausal disorders	906	767	681	-15.3	-11.2
116: Aortic and peripheral arterial embolism or thrombosis	3,416	3,629	3,222	6.2	-11.2
36: Cancer of thyroid	2,216	1,825	1,592	-17.6	-12.8
59: Deficiency and other anemia	22,110	21,196	18,345	-4.1	-13.5
172: Ovarian cyst	2,869	2,726	2,359	-5.0	-13.5
253: Allergic reactions	2,795	2,880	2,490	3.0	-13.5
251: Abdominal pain	15,689	14,899	12,823	-5.0	-13.9
208: Acquired foot deformities	695	621	530	-10.6	-14.7
259: Residual codes; unclassified	12,372	11,990	10,083	-3.1	-15.9
120: Hemorrhoids	3,468	3,655	3,055	5.4	-16.4
121: Other diseases of veins and lymphatics	2,602	2,585	2,150	-0.7	-16.8
117: Other circulatory disease	12,365	12,837	10,667	3.8	-16.9
88: Glaucoma	70	87	70	24.3	-19.5
5: HIV infection	3,935	3,912	3,137	-0.6	-19.8
225: Joint disorders and dislocations; trauma-related	3,393	3,331	2,523	-1.8	-24.3
246: Fever of unknown origin	6,145	6,055	4,579	-1.5	-24.4
170: Prolapse of female genital organs	6,752	4,885	3,609	-27.7	-26.1
166: Other male genital disorders	1,257	1,211	891	-3.7	-26.4
87: Retinal detachments; defects; vascular occlusion; and retinopathy	437	412	302	-5.7	-26.7
4: Mycoses	2,944	2,989	2,165	1.5	-27.6
86: Cataract	17	31	22	82.4	-29.0
141: Other disorders of stomach and duodenum	9,341	9,643	6,835	3.2	-29.1
242: Poisoning by other medications and drugs	14,887	15,322	10,800	2.9	-29.5
181: Other complications of pregnancy	61,837	64,687	45,383	4.6	-29.8
6: Hepatitis	5,726	5,575	3,845	-2.6	-31.0
217: Other congenital anomalies	6,421	6,661	4,592	3.7	-31.1
158: Chronic kidney disease	2,879	2,590	1,766	-10.0	-31.8
663: Screening and history of mental health and substance abuse codes	131	160	107	22.1	-33.1
212: Other bone disease and musculoskeletal deformities	9,330	9,496	6,306	1.8	-33.6
171: Menstrual disorders	5,978	5,281	3,268	-11.7	-38.1
81: Other hereditary and degenerative nervous system conditions	5,242	5,397	3,089	3.0	-42.8
128: Asthma	41,725	42,474	23,965	1.8	-43.6
10: Immunizations and screening for infectious disease	721	720	394	-0.1	-45.3

CCS Principal Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
670: Miscellaneous disorders	6,562	6,728	3,511	2.5	–47.8
85: Coma; stupor; and brain damage	2,162	1,922	974	–11.1	–49.3
178: Induced abortion	457	469	235	2.6	–49.9
8: Other infections; including parasitic	1,328	1,243	582	–6.4	–53.2
49: Diabetes mellitus without complication	1,890	1,930	865	2.1	–55.2
654: Developmental disorders	240	260	110	8.3	–57.7
160: Calculus of urinary tract	16,825	16,566	6,889	–1.5	–58.4
241: Poisoning by psychotropic agents	9,936	10,328	4,190	3.9	–59.4
256: Medical examination/evaluation	854	638	220	–25.3	–65.5
194: Forceps delivery	1,159	988	296	–14.8	–70.0
179: Postabortion complications	177	191	38	7.9	–80.1
123: Influenza	6,105	18,537	1,980	203.6	–89.3
254: Rehabilitation care; fitting of prostheses; and adjustment of devices	68,514	69,378	159	1.3	–99.8

Abbreviations: CCS, Clinical Classifications Software; CNS, central nervous system; GI, gastrointestinal; HIV, human immunodeficiency virus; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification; NA, not applicable; NEC, not elsewhere classified; OB, obstetric; Q, quarter.

Notes: Shaded rows indicate CCS diagnosis categories that changed by less than 5 percent with the introduction of ICD-10-CM. The table only includes CCS diagnosis categories; external cause (E code) categories are not included, as they are not expected to be comparable between ICD-9-CM and ICD-10-CM.

Source: Healthcare Cost and Utilization Project State Inpatient Databases from 24 States.

APPENDIX D: CHANGES IN CCS ALL-LISTED DIAGNOSIS CATEGORIES IN EMERGENCY DEPARTMENT DATA (HCUP STATE EMERGENCY DEPARTMENT DATABASES) FROM ICD-9-CM TO ICD-10-CM, SORTED BY CCS NUMBER (BODY SYSTEM)

Shaded rows indicate those Clinical Classifications Software (CCS) diagnosis categories that changed by less than 5 percent with the introduction of the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM).

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
1: Tuberculosis	2,417	2,869	2,586	18.7	-9.9
2: Septicemia (except in labor)	8,607	11,134	12,132	29.4	9.0
3: Bacterial infection; unspecified site	84,569	92,380	93,553	9.2	1.3
4: Mycoses	59,643	63,363	66,229	6.2	4.5
5: HIV infection	21,535	25,113	26,481	16.6	5.4
6: Hepatitis	43,870	50,332	46,359	14.7	-7.9
7: Viral infection	268,113	341,215	262,255	27.3	-23.1
8: Other infections; including parasitic	57,661	63,814	58,785	10.7	-7.9
9: Sexually transmitted infections (not HIV or hepatitis)	7,190	7,632	9,021	6.1	18.2
10: Immunizations and screening for infectious disease	176,651	201,698	198,610	14.2	-1.5
11: Cancer of head and neck	6,408	6,748	6,346	5.3	-6.0
12: Cancer of esophagus	2,640	2,932	2,967	11.1	1.2
13: Cancer of stomach	2,465	2,787	2,466	13.1	-11.5
14: Cancer of colon	19,629	21,186	20,556	7.9	-3.0
15: Cancer of rectum and anus	3,442	3,744	3,989	8.8	6.5
16: Cancer of liver and intrahepatic bile duct	3,523	4,006	4,388	13.7	9.5
17: Cancer of pancreas	2,592	2,994	3,019	15.5	0.8
18: Cancer of other GI organs; peritoneum	2,418	2,592	2,680	7.2	3.4
19: Cancer of bronchus; lung	21,088	22,411	22,237	6.3	-0.8
20: Cancer; other respiratory and intrathoracic	389	421	443	8.2	5.2
21: Cancer of bone and connective tissue	1,206	1,424	1,326	18.1	-6.9
22: Melanomas of skin	6,392	7,350	6,428	15.0	-12.5
23: Other non-epithelial cancer of skin	20,047	21,538	20,991	7.4	-2.5
24: Cancer of breast	47,022	52,239	50,432	11.1	-3.5
25: Cancer of uterus	6,013	6,737	6,776	12.0	0.6
26: Cancer of cervix	8,914	10,018	9,763	12.4	-2.5
27: Cancer of ovary	5,904	6,428	6,388	8.9	-0.6
28: Cancer of other female genital organs	1,468	1,632	864	11.2	-47.1
29: Cancer of prostate	30,959	32,942	31,979	6.4	-2.9

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
30: Cancer of testis	1,818	2,059	2,017	13.3	-2.0
31: Cancer of other male genital organs	185	264	121	42.7	-54.2
32: Cancer of bladder	9,116	9,922	10,111	8.8	1.9
33: Cancer of kidney and renal pelvis	7,099	7,961	8,041	12.1	1.0
34: Cancer of other urinary organs	291	330	386	13.4	17.0
35: Cancer of brain and nervous system	3,722	4,065	4,305	9.2	5.9
36: Cancer of thyroid	5,187	5,895	6,406	13.6	8.7
37: Hodgkin's disease	2,095	2,217	2,147	5.8	-3.2
38: Non-Hodgkin's lymphoma	10,940	11,687	11,158	6.8	-4.5
39: Leukemias	9,858	10,952	11,315	11.1	3.3
40: Multiple myeloma	2,979	3,325	3,296	11.6	-0.9
41: Cancer; other and unspecified primary	8,962	10,465	12,025	16.8	14.9
42: Secondary malignancies	16,766	18,167	22,433	8.4	23.5
43: Malignant neoplasm without specification of site	4,728	4,931	3,062	4.3	-37.9
44: Neoplasms of unspecified nature or uncertain behavior	10,322	11,626	10,088	12.6	-13.2
45: Maintenance chemotherapy; radiotherapy	500	606	834	21.2	37.6
46: Benign neoplasm of uterus	15,610	17,381	17,512	11.3	0.8
47: Other and unspecified benign neoplasm	20,852	23,784	22,214	14.1	-6.6
48: Thyroid disorders	256,073	300,431	294,080	17.3	-2.1
49: Diabetes mellitus without complication	694,938	811,320	775,047	16.7	-4.5
50: Diabetes mellitus with complications	105,239	120,300	210,918	14.3	75.3
51: Other endocrine disorders	29,162	34,000	33,470	16.6	-1.6
52: Nutritional deficiencies	27,388	32,520	26,593	18.7	-18.2
53: Disorders of lipid metabolism	585,183	686,965	687,023	17.4	0.0
54: Gout and other crystal arthropathies	48,799	55,309	52,580	13.3	-4.9
55: Fluid and electrolyte disorders	296,737	317,635	316,820	7.0	-0.3
56: Cystic fibrosis	1,278	1,383	1,275	8.2	-7.8
57: Immunity disorders	2,435	3,102	6,856	27.4	121.0
58: Other nutritional; endocrine; and metabolic disorders	215,723	273,422	275,707	26.7	0.8
59: Deficiency and other anemia	154,541	170,272	168,950	10.2	-0.8
60: Acute posthemorrhagic anemia	3,426	3,843	4,913	12.2	27.8
61: Sickle cell anemia	19,068	21,411	21,846	12.3	2.0
62: Coagulation and hemorrhagic disorders	38,547	44,022	45,264	14.2	2.8
63: Diseases of white blood cells	54,095	65,886	70,851	21.8	7.5
64: Other hematologic conditions	9,592	11,854	12,122	23.6	2.3

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
76: Meningitis (except that caused by tuberculosis or sexually transmitted disease)	1,248	1,264	1,430	1.3	13.1
77: Encephalitis (except that caused by tuberculosis or sexually transmitted disease)	571	620	375	8.6	-39.5
78: Other CNS infection and poliomyelitis	1,973	2,107	2,023	6.8	-4.0
79: Parkinson`s disease	20,392	23,443	26,326	15.0	12.3
80: Multiple sclerosis	15,034	16,638	16,246	10.7	-2.4
81: Other hereditary and degenerative nervous system conditions	33,554	38,010	35,096	13.3	-7.7
82: Paralysis	22,708	25,094	26,079	10.5	3.9
83: Epilepsy; convulsions	180,301	196,587	193,756	9.0	-1.4
84: Headache; including migraine	531,952	587,200	598,407	10.4	1.9
85: Coma; stupor; and brain damage	22,098	23,153	11,644	4.8	-49.7
86: Cataract	7,844	9,007	7,422	14.8	-17.6
87: Retinal detachments; defects; vascular occlusion; and retinopathy	21,825	24,246	9,581	11.1	-60.5
88: Glaucoma	19,477	21,546	19,052	10.6	-11.6
89: Blindness and vision defects	54,077	59,749	58,500	10.5	-2.1
90: Inflammation; infection of eye (except that caused by tuberculosis or sexually transmitted disease)	98,091	106,518	115,047	8.6	8.0
91: Other eye disorders	64,958	72,706	69,329	11.9	-4.6
92: Otitis media and related conditions	249,171	266,535	265,101	7.0	-0.5
93: Conditions associated with dizziness or vertigo	223,223	241,591	247,723	8.2	2.5
94: Other ear and sense organ disorders	131,127	145,389	145,482	10.9	0.1
95: Other nervous system disorders	563,313	645,894	542,930	14.7	-15.9
96: Heart valve disorders	66,790	77,130	68,955	15.5	-10.6
97: Peri-; endo-; and myocarditis; cardiomyopathy (except that caused by tuberculosis or sexually transmitted disease)	24,252	27,950	31,195	15.2	11.6
98: Essential hypertension	1,492,260	1,751,860	1,913,340	17.4	9.2
99: Hypertension with complications and secondary hypertension	131,235	160,555	162,734	22.3	1.4
100: Acute myocardial infarction	12,099	13,471	15,614	11.3	15.9
101: Coronary atherosclerosis and other heart disease	352,891	393,036	393,822	11.4	0.2
102: Nonspecific chest pain	539,362	585,453	653,438	8.5	11.6
103: Pulmonary heart disease	46,664	57,693	61,859	23.6	7.2
104: Other and ill-defined heart disease	35,777	39,345	30,015	10.0	-23.7

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
105: Conduction disorders	112,659	128,907	127,880	14.4	-0.8
106: Cardiac dysrhythmias	370,059	424,619	432,976	14.7	2.0
107: Cardiac arrest and ventricular fibrillation	16,988	17,693	17,318	4.1	-2.1
108: Congestive heart failure; nonhypertensive	145,716	172,314	183,866	18.3	6.7
109: Acute cerebrovascular disease	17,707	19,670	21,926	11.1	11.5
110: Occlusion or stenosis of precerebral arteries	10,153	12,224	10,454	20.4	-14.5
111: Other and ill-defined cerebrovascular disease	8,566	10,529	7,039	22.9	-33.1
112: Transient cerebral ischemia	15,406	16,895	19,652	9.7	16.3
113: Late effects of cerebrovascular disease	21,019	22,477	22,006	6.9	-2.1
114: Peripheral and visceral atherosclerosis	70,033	86,471	67,880	23.5	-21.5
115: Aortic; peripheral; and visceral artery aneurysms	14,912	16,870	16,865	13.1	0.0
116: Aortic and peripheral arterial embolism or thrombosis	1,281	1,395	1,306	8.9	-6.4
117: Other circulatory disease	266,829	307,712	290,724	15.3	-5.5
118: Phlebitis; thrombophlebitis and thromboembolism	78,333	92,129	93,414	17.6	1.4
119: Varicose veins of lower extremity	6,406	7,085	6,610	10.6	-6.7
120: Hemorrhoids	28,720	31,214	31,330	8.7	0.4
121: Other diseases of veins and lymphatics	16,476	18,117	18,910	10.0	4.4
122: Pneumonia (except that caused by tuberculosis or sexually transmitted disease)	116,410	126,601	134,365	8.8	6.1
123: Influenza	62,216	164,907	19,406	165.1	-88.2
124: Acute and chronic tonsillitis	35,283	38,288	38,250	8.5	-0.1
125: Acute bronchitis	190,217	201,690	230,781	6.0	14.4
126: Other upper respiratory infections	848,426	1,012,203	931,348	19.3	-8.0
127: Chronic obstructive pulmonary disease and bronchiectasis	360,323	430,242	447,170	19.4	3.9
128: Asthma	573,682	702,954	694,233	22.5	-1.2
129: Aspiration pneumonitis; food/vomitus	1,353	1,525	1,939	12.7	27.1
130: Pleurisy; pneumothorax; pulmonary collapse	41,130	46,730	47,356	13.6	1.3
131: Respiratory failure; insufficiency; arrest (adult)	28,865	35,274	40,763	22.2	15.6
132: Lung disease due to external agents	3,089	3,187	3,097	3.2	-2.8
133: Other lower respiratory disease	647,297	750,831	633,948	16.0	-15.6

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
134: Other upper respiratory disease	226,931	266,755	217,903	17.5	-18.3
135: Intestinal infection	32,941	35,993	47,995	9.3	33.3
136: Disorders of teeth and jaw	214,290	229,851	234,853	7.3	2.2
137: Diseases of mouth; excluding dental	31,133	36,127	34,210	16.0	-5.3
138: Esophageal disorders	352,926	419,267	429,348	18.8	2.4
139: Gastroduodenal ulcer (except hemorrhage)	21,778	23,480	21,959	7.8	-6.5
140: Gastritis and duodenitis	77,603	79,803	80,291	2.8	0.6
141: Other disorders of stomach and duodenum	27,688	31,036	19,157	12.1	-38.3
142: Appendicitis and other appendiceal conditions	15,728	18,230	19,649	15.9	7.8
143: Abdominal hernia	56,565	63,271	66,052	11.9	4.4
144: Regional enteritis and ulcerative colitis	23,859	26,996	28,028	13.1	3.8
145: Intestinal obstruction without hernia	15,945	16,995	17,861	6.6	5.1
146: Diverticulosis and diverticulitis	60,155	69,124	69,096	14.9	0.0
147: Anal and rectal conditions	21,083	22,661	22,788	7.5	0.6
148: Peritonitis and intestinal abscess	1,543	1,780	1,793	15.4	0.7
149: Biliary tract disease	63,698	68,951	72,454	8.2	5.1
151: Other liver diseases	83,379	99,908	93,250	19.8	-6.7
152: Pancreatic disorders (not diabetes)	27,154	29,783	31,224	9.7	4.8
153: Gastrointestinal hemorrhage	57,940	64,926	67,339	12.1	3.7
154: Noninfectious gastroenteritis	129,201	139,660	133,062	8.1	-4.7
155: Other gastrointestinal disorders	497,877	561,176	596,639	12.7	6.3
156: Nephritis; nephrosis; renal sclerosis	7,105	7,339	3,033	3.3	-58.7
157: Acute and unspecified renal failure	27,319	33,841	43,260	23.9	27.8
158: Chronic kidney disease	153,523	184,503	200,416	20.2	8.6
159: Urinary tract infections	459,947	500,307	502,701	8.8	0.5
160: Calculus of urinary tract	173,037	189,635	173,552	9.6	-8.5
161: Other diseases of kidney and ureters	72,834	81,178	93,058	11.5	14.6
162: Other diseases of bladder and urethra	10,984	12,841	12,977	16.9	1.1
163: Genitourinary symptoms and ill-defined conditions	233,987	257,760	255,779	10.2	-0.8
164: Hyperplasia of prostate	47,606	54,762	52,788	15.0	-3.6
165: Inflammatory conditions of male genital organs	23,732	24,858	25,372	4.7	2.1
166: Other male genital disorders	37,313	42,071	41,298	12.8	-1.8
167: Nonmalignant breast conditions	21,502	23,161	24,578	7.7	6.1

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
168: Inflammatory diseases of female pelvic organs	63,304	64,287	64,438	1.6	0.2
169: Endometriosis	6,095	6,483	6,346	6.4	-2.1
170: Prolapse of female genital organs	2,466	2,756	2,664	11.8	-3.3
171: Menstrual disorders	48,187	51,285	30,607	6.4	-40.3
172: Ovarian cyst	62,333	67,209	68,347	7.8	1.7
173: Menopausal disorders	4,278	4,691	4,402	9.7	-6.2
174: Female infertility	301	424	256	40.9	-39.6
175: Other female genital disorders	122,957	132,883	98,849	8.1	-25.6
176: Contraceptive and procreative management	21,844	26,240	27,290	20.1	4.0
177: Spontaneous abortion	16,145	17,180	21,423	6.4	24.7
178: Induced abortion	4,085	4,137	438	1.3	-89.4
179: Postabortion complications	942	960	738	1.9	-23.1
180: Ectopic pregnancy	3,377	3,664	4,192	8.5	14.4
181: Other complications of pregnancy	189,772	208,105	216,045	9.7	3.8
182: Hemorrhage during pregnancy; abruptio placenta; placenta previa	66,097	68,950	69,280	4.3	0.5
183: Hypertension complicating pregnancy; childbirth and the puerperium	5,950	7,136	8,102	19.9	13.5
184: Early or threatened labor	11,679	13,391	14,130	14.7	5.5
185: Prolonged pregnancy	173	160	217	-7.5	35.6
186: Diabetes or abnormal glucose tolerance complicating pregnancy; childbirth; or the puerperium	4,098	5,056	5,940	23.4	17.5
187: Malposition; malpresentation	250	341	356	36.4	4.4
188: Fetopelvic disproportion; obstruction	62	81	220	30.6	171.6
189: Previous C-section	2,925	3,529	2,648	20.6	-25.0
190: Fetal distress and abnormal forces of labor	937	1,626	1,962	73.5	20.7
191: Polyhydramnios and other problems of amniotic cavity	1,246	1,769	2,080	42.0	17.6
192: Umbilical cord complication	28	38	24	35.7	-36.8
193: OB-related trauma to perineum and vulva	92	89	52	-3.3	-41.6
194: Forceps delivery	0	0	<=10	NA	NA
195: Other complications of birth; puerperium affecting management of mother	29,462	33,600	15,249	14.0	-54.6
196: Normal pregnancy and/or delivery	29,424	30,393	31,727	3.3	4.4
197: Skin and subcutaneous tissue infections	323,146	329,441	353,353	1.9	7.3

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
198: Other inflammatory condition of skin	49,024	50,036	52,041	2.1	4.0
199: Chronic ulcer of skin	19,259	20,990	20,763	9.0	-1.1
200: Other skin disorders	168,532	180,824	207,652	7.3	14.8
201: Infective arthritis and osteomyelitis (except that caused by tuberculosis or sexually transmitted disease)	4,352	4,859	5,281	11.6	8.7
202: Rheumatoid arthritis and related disease	35,989	40,909	41,056	13.7	0.4
203: Osteoarthritis	110,160	122,276	175,005	11.0	43.1
204: Other non-traumatic joint disorders	403,094	444,311	390,889	10.2	-12.0
205: Spondylosis; intervertebral disc disorders; other back problems	715,501	786,293	780,491	9.9	-0.7
206: Osteoporosis	45,809	50,959	44,266	11.2	-13.1
207: Pathological fracture	5,321	6,174	4,612	16.0	-25.3
208: Acquired foot deformities	3,469	3,889	3,797	12.1	-2.4
209: Other acquired deformities	6,755	7,995	25,731	18.4	221.8
210: Systemic lupus erythematosus and connective tissue disorders	26,149	29,569	26,563	13.1	-10.2
211: Other connective tissue disease	548,592	614,537	571,487	12.0	-7.0
212: Other bone disease and musculoskeletal deformities	59,110	68,280	64,892	15.5	-5.0
213: Cardiac and circulatory congenital anomalies	8,495	10,198	10,195	20.0	0.0
214: Digestive congenital anomalies	2,820	3,167	3,164	12.3	-0.1
215: Genitourinary congenital anomalies	11,432	12,900	8,317	12.8	-35.5
216: Nervous system congenital anomalies	4,948	5,269	6,501	6.5	23.4
217: Other congenital anomalies	19,805	22,579	20,218	14.0	-10.5
218: Liveborn	158	174	131	10.1	-24.7
219: Short gestation; low birth weight; and fetal growth retardation	690	633	501	-8.3	-20.9
220: Intrauterine hypoxia and birth asphyxia	45	60	16	33.3	-73.3
221: Respiratory distress syndrome	29	35	37	20.7	5.7
222: Hemolytic jaundice and perinatal jaundice	3,037	3,058	3,137	0.7	2.6
223: Birth trauma	138	137	181	-0.7	32.1
224: Other perinatal conditions	25,548	25,772	23,758	0.9	-7.8
225: Joint disorders and dislocations; trauma-related	54,734	54,846	53,715	0.2	-2.1
226: Fracture of neck of femur (hip)	5,177	5,467	5,743	5.6	5.0
227: Spinal cord injury	1,457	1,572	961	7.9	-38.9
228: Skull and face fractures	32,617	34,404	50,328	5.5	46.3

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
229: Fracture of upper limb	176,948	178,418	191,872	0.8	7.5
230: Fracture of lower limb	85,773	86,949	94,948	1.4	9.2
231: Other fractures	54,158	57,905	63,076	6.9	8.9
232: Sprains and strains	616,095	624,901	623,685	1.4	-0.2
233: Intracranial injury	75,514	79,030	84,195	4.7	6.5
234: Crushing injury or internal injury	16,179	17,139	18,648	5.9	8.8
235: Open wounds of head; neck; and trunk	264,170	264,578	257,040	0.2	-2.8
236: Open wounds of extremities	288,356	291,160	314,344	1.0	8.0
237: Complication of device; implant or graft	31,560	34,627	48,730	9.7	40.7
238: Complications of surgical procedures or medical care	51,604	55,255	68,132	7.1	23.3
239: Superficial injury; contusion	717,984	728,365	727,857	1.4	-0.1
240: Burns	34,846	36,223	38,829	4.0	7.2
241: Poisoning by psychotropic agents	12,981	14,395	7,411	10.9	-48.5
242: Poisoning by other medications and drugs	36,676	40,311	23,887	9.9	-40.7
243: Poisoning by nonmedicinal substances	26,569	25,842	36,223	-2.7	40.2
244: Other injuries and conditions due to external causes	456,487	479,837	500,113	5.1	4.2
245: Syncope	144,469	157,290	165,872	8.9	5.5
246: Fever of unknown origin	331,195	396,319	291,490	19.7	-26.5
247: Lymphadenitis	39,477	45,208	43,137	14.5	-4.6
248: Gangrene	718	726	879	1.1	21.1
249: Shock	1,114	1,289	1,731	15.7	34.3
250: Nausea and vomiting	654,491	700,121	701,576	7.0	0.2
251: Abdominal pain	905,240	968,221	1,021,109	7.0	5.5
252: Malaise and fatigue	150,555	171,129	165,292	13.7	-3.4
253: Allergic reactions	581,046	698,968	833,911	20.3	19.3
254: Rehabilitation care; fitting of prostheses; and adjustment of devices	1,340	1,492	2,953	11.3	97.9
255: Administrative/social admission	97,320	119,969	148,054	23.3	23.4
256: Medical examination/evaluation	28,796	30,514	20,142	6.0	-34.0
257: Other aftercare	1,025,093	1,280,647	1,376,224	24.9	7.5
258: Other screening for suspected conditions (not mental disorders or infectious disease)	68,674	74,457	195,610	8.4	162.7
259: Residual codes; unclassified	756,223	887,782	1,372,391	17.4	54.6
650: Adjustment disorders	14,528	15,107	22,122	4.0	46.4
651: Anxiety disorders	436,654	524,534	539,298	20.1	2.8
652: Attention-deficit, conduct, and disruptive behavior disorders	61,888	73,392	69,181	18.6	-5.7

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
653: Delirium, dementia, and amnestic and other cognitive disorders	104,683	117,941	118,580	12.7	0.5
654: Developmental disorders	26,314	29,928	16,303	13.7	-45.5
655: Disorders usually diagnosed in infancy, childhood, or adolescence	14,946	18,597	23,200	24.4	24.8
656: Impulse control disorders, NEC	1,901	2,245	6,945	18.1	209.4
657: Mood disorders	450,004	526,045	492,343	16.9	-6.4
658: Personality disorders	9,341	11,245	9,476	20.4	-15.7
659: Schizophrenia and other psychotic disorders	95,847	109,776	99,714	14.5	-9.2
660: Alcohol-related disorders	207,873	224,952	247,258	8.2	9.9
661: Substance-related disorders	194,992	223,912	1,472,853	14.8	557.8
662: Suicide and intentional self-inflicted injury	55,512	64,632	91,620	16.4	41.8
663: Screening and history of mental health and substance abuse codes	1,395,868	1,842,596	576,158	32.0	-68.7
670: Miscellaneous disorders	28,868	32,333	35,660	12.0	10.3

Abbreviations: CCS, Clinical Classifications Software; CNS, central nervous system; GI, gastrointestinal; HIV, human immunodeficiency virus; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification; NA, not applicable; NEC, not elsewhere classified; OB, obstetric; Q, quarter.

Note: Shaded rows indicate CCS diagnosis categories that changed by less than 5 percent with the introduction of ICD-10-CM. The table only includes CCS diagnosis categories; external cause (E code) categories are not included, as they are not expected to be comparable between ICD-9-CM and ICD-10-CM.

Source: Healthcare Cost and Utilization Project State Emergency Department Databases from 17 States.

APPENDIX E: CHANGES IN CCS ALL-LISTED DIAGNOSIS CATEGORIES IN EMERGENCY DEPARTMENT DATA (HCUP STATE EMERGENCY DEPARTMENT DATABASES) FROM ICD-9-CM TO ICD-10-CM, SORTED BY PERCENTAGE CHANGE FROM 2014 TO 2015

Shaded rows indicate those Clinical Classifications Software (CCS) diagnosis categories that changed by less than 5 percent with the introduction of the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM).

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
661: Substance-related disorders	194,992	223,912	1,472,853	14.8	557.8
209: Other acquired deformities	6,755	7,995	25,731	18.4	221.8
656: Impulse control disorders, NEC	1,901	2,245	6,945	18.1	209.4
188: Fetopelvic disproportion; obstruction	62	81	220	30.6	171.6
258: Other screening for suspected conditions (not mental disorders or infectious disease)	68,674	74,457	195,610	8.4	162.7
57: Immunity disorders	2,435	3,102	6,856	27.4	121.0
254: Rehabilitation care; fitting of prostheses; and adjustment of devices	1,340	1,492	2,953	11.3	97.9
50: Diabetes mellitus with complications	105,239	120,300	210,918	14.3	75.3
259: Residual codes; unclassified	756,223	887,782	1,372,391	17.4	54.6
650: Adjustment disorders	14,528	15,107	22,122	4.0	46.4
228: Skull and face fractures	32,617	34,404	50,328	5.5	46.3
203: Osteoarthritis	110,160	122,276	175,005	11.0	43.1
662: Suicide and intentional self-inflicted injury	55,512	64,632	91,620	16.4	41.8
237: Complication of device; implant or graft	31,560	34,627	48,730	9.7	40.7
243: Poisoning by nonmedicinal substances	26,569	25,842	36,223	-2.7	40.2
45: Maintenance chemotherapy; radiotherapy	500	606	834	21.2	37.6
185: Prolonged pregnancy	173	160	217	-7.5	35.6
249: Shock	1,114	1,289	1,731	15.7	34.3
135: Intestinal infection	32,941	35,993	47,995	9.3	33.3
223: Birth trauma	138	137	181	-0.7	32.1
60: Acute posthemorrhagic anemia	3,426	3,843	4,913	12.2	27.8
157: Acute and unspecified renal failure	27,319	33,841	43,260	23.9	27.8
129: Aspiration pneumonitis; food/vomitus	1,353	1,525	1,939	12.7	27.1
655: Disorders usually diagnosed in infancy, childhood, or adolescence	14,946	18,597	23,200	24.4	24.8
177: Spontaneous abortion	16,145	17,180	21,423	6.4	24.7
42: Secondary malignancies	16,766	18,167	22,433	8.4	23.5

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
255: Administrative/social admission	97,320	119,969	148,054	23.3	23.4
216: Nervous system congenital anomalies	4,948	5,269	6,501	6.5	23.4
238: Complications of surgical procedures or medical care	51,604	55,255	68,132	7.1	23.3
248: Gangrene	718	726	879	1.1	21.1
190: Fetal distress and abnormal forces of labor	937	1,626	1,962	73.5	20.7
253: Allergic reactions	581,046	698,968	833,911	20.3	19.3
9: Sexually transmitted infections (not HIV or hepatitis)	7,190	7,632	9,021	6.1	18.2
191: Polyhydramnios and other problems of amniotic cavity	1,246	1,769	2,080	42.0	17.6
186: Diabetes or abnormal glucose tolerance complicating pregnancy; childbirth; or the puerperium	4,098	5,056	5,940	23.4	17.5
34: Cancer of other urinary organs	291	330	386	13.4	17.0
112: Transient cerebral ischemia	15,406	16,895	19,652	9.7	16.3
100: Acute myocardial infarction	12,099	13,471	15,614	11.3	15.9
131: Respiratory failure; insufficiency; arrest (adult)	28,865	35,274	40,763	22.2	15.6
41: Cancer; other and unspecified primary	8,962	10,465	12,025	16.8	14.9
200: Other skin disorders	168,532	180,824	207,652	7.3	14.8
161: Other diseases of kidney and ureters	72,834	81,178	93,058	11.5	14.6
125: Acute bronchitis	190,217	201,690	230,781	6.0	14.4
180: Ectopic pregnancy	3,377	3,664	4,192	8.5	14.4
183: Hypertension complicating pregnancy; childbirth and the puerperium	5,950	7,136	8,102	19.9	13.5
76: Meningitis (except that caused by tuberculosis or sexually transmitted disease)	1,248	1,264	1,430	1.3	13.1
79: Parkinson's disease	20,392	23,443	26,326	15.0	12.3
102: Nonspecific chest pain	539,362	585,453	653,438	8.5	11.6
97: Peri-; endo-; and myocarditis; cardiomyopathy (except that caused by tuberculosis or sexually transmitted disease)	24,252	27,950	31,195	15.2	11.6
109: Acute cerebrovascular disease	17,707	19,670	21,926	11.1	11.5
670: Miscellaneous disorders	28,868	32,333	35,660	12.0	10.3
660: Alcohol-related disorders	207,873	224,952	247,258	8.2	9.9
16: Cancer of liver and intrahepatic bile duct	3,523	4,006	4,388	13.7	9.5
98: Essential hypertension	1,492,260	1,751,860	1,913,340	17.4	9.2
230: Fracture of lower limb	85,773	86,949	94,948	1.4	9.2
2: Septicemia (except in labor)	8,607	11,134	12,132	29.4	9.0

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
231: Other fractures	54,158	57,905	63,076	6.9	8.9
234: Crushing injury or internal injury	16,179	17,139	18,648	5.9	8.8
201: Infective arthritis and osteomyelitis (except that caused by tuberculosis or sexually transmitted disease)	4,352	4,859	5,281	11.6	8.7
36: Cancer of thyroid	5,187	5,895	6,406	13.6	8.7
158: Chronic kidney disease	153,523	184,503	200,416	20.2	8.6
90: Inflammation; infection of eye (except that caused by tuberculosis or sexually transmitted disease)	98,091	106,518	115,047	8.6	8.0
236: Open wounds of extremities	288,356	291,160	314,344	1.0	8.0
142: Appendicitis and other appendiceal conditions	15,728	18,230	19,649	15.9	7.8
229: Fracture of upper limb	176,948	178,418	191,872	0.8	7.5
63: Diseases of white blood cells	54,095	65,886	70,851	21.8	7.5
257: Other aftercare	1,025,093	1,280,647	1,376,224	24.9	7.5
197: Skin and subcutaneous tissue infections	323,146	329,441	353,353	1.9	7.3
103: Pulmonary heart disease	46,664	57,693	61,859	23.6	7.2
240: Burns	34,846	36,223	38,829	4.0	7.2
108: Congestive heart failure; nonhypertensive	145,716	172,314	183,866	18.3	6.7
15: Cancer of rectum and anus	3,442	3,744	3,989	8.8	6.5
233: Intracranial injury	75,514	79,030	84,195	4.7	6.5
155: Other gastrointestinal disorders	497,877	561,176	596,639	12.7	6.3
122: Pneumonia (except that caused by tuberculosis or sexually transmitted disease)	116,410	126,601	134,365	8.8	6.1
167: Nonmalignant breast conditions	21,502	23,161	24,578	7.7	6.1
35: Cancer of brain and nervous system	3,722	4,065	4,305	9.2	5.9
221: Respiratory distress syndrome	29	35	37	20.7	5.7
184: Early or threatened labor	11,679	13,391	14,130	14.7	5.5
251: Abdominal pain	905,240	968,221	1,021,109	7.0	5.5
245: Syncope	144,469	157,290	165,872	8.9	5.5
5: HIV infection	21,535	25,113	26,481	16.6	5.4
20: Cancer; other respiratory and intrathoracic	389	421	443	8.2	5.2
145: Intestinal obstruction without hernia	15,945	16,995	17,861	6.6	5.1
149: Biliary tract disease	63,698	68,951	72,454	8.2	5.1
226: Fracture of neck of femur (hip)	5,177	5,467	5,743	5.6	5.0
152: Pancreatic disorders (not diabetes)	27,154	29,783	31,224	9.7	4.8
4: Mycoses	59,643	63,363	66,229	6.2	4.5
187: Malposition; malpresentation	250	341	356	36.4	4.4

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
143: Abdominal hernia	56,565	63,271	66,052	11.9	4.4
196: Normal pregnancy and/or delivery	29,424	30,393	31,727	3.3	4.4
121: Other diseases of veins and lymphatics	16,476	18,117	18,910	10.0	4.4
244: Other injuries and conditions due to external causes	456,487	479,837	500,113	5.1	4.2
198: Other inflammatory condition of skin	49,024	50,036	52,041	2.1	4.0
176: Contraceptive and procreative management	21,844	26,240	27,290	20.1	4.0
127: Chronic obstructive pulmonary disease and bronchiectasis	360,323	430,242	447,170	19.4	3.9
82: Paralysis	22,708	25,094	26,079	10.5	3.9
144: Regional enteritis and ulcerative colitis	23,859	26,996	28,028	13.1	3.8
181: Other complications of pregnancy	189,772	208,105	216,045	9.7	3.8
153: Gastrointestinal hemorrhage	57,940	64,926	67,339	12.1	3.7
18: Cancer of other GI organs; peritoneum	2,418	2,592	2,680	7.2	3.4
39: Leukemias	9,858	10,952	11,315	11.1	3.3
62: Coagulation and hemorrhagic disorders	38,547	44,022	45,264	14.2	2.8
651: Anxiety disorders	436,654	524,534	539,298	20.1	2.8
222: Hemolytic jaundice and perinatal jaundice	3,037	3,058	3,137	0.7	2.6
93: Conditions associated with dizziness or vertigo	223,223	241,591	247,723	8.2	2.5
138: Esophageal disorders	352,926	419,267	429,348	18.8	2.4
64: Other hematologic conditions	9,592	11,854	12,122	23.6	2.3
136: Disorders of teeth and jaw	214,290	229,851	234,853	7.3	2.2
165: Inflammatory conditions of male genital organs	23,732	24,858	25,372	4.7	2.1
61: Sickle cell anemia	19,068	21,411	21,846	12.3	2.0
106: Cardiac dysrhythmias	370,059	424,619	432,976	14.7	2.0
84: Headache; including migraine	531,952	587,200	598,407	10.4	1.9
32: Cancer of bladder	9,116	9,922	10,111	8.8	1.9
172: Ovarian cyst	62,333	67,209	68,347	7.8	1.7
118: Phlebitis; thrombophlebitis and thromboembolism	78,333	92,129	93,414	17.6	1.4
99: Hypertension with complications and secondary hypertension	131,235	160,555	162,734	22.3	1.4
130: Pleurisy; pneumothorax; pulmonary collapse	41,130	46,730	47,356	13.6	1.3
3: Bacterial infection; unspecified site	84,569	92,380	93,553	9.2	1.3
12: Cancer of esophagus	2,640	2,932	2,967	11.1	1.2

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
162: Other diseases of bladder and urethra	10,984	12,841	12,977	16.9	1.1
33: Cancer of kidney and renal pelvis	7,099	7,961	8,041	12.1	1.0
58: Other nutritional; endocrine; and metabolic disorders	215,723	273,422	275,707	26.7	0.8
17: Cancer of pancreas	2,592	2,994	3,019	15.5	0.8
46: Benign neoplasm of uterus	15,610	17,381	17,512	11.3	0.8
148: Peritonitis and intestinal abscess	1,543	1,780	1,793	15.4	0.7
140: Gastritis and duodenitis	77,603	79,803	80,291	2.8	0.6
25: Cancer of uterus	6,013	6,737	6,776	12.0	0.6
147: Anal and rectal conditions	21,083	22,661	22,788	7.5	0.6
653: Delirium, dementia, and amnestic and other cognitive disorders	104,683	117,941	118,580	12.7	0.5
182: Hemorrhage during pregnancy; abruptio placenta; placenta previa	66,097	68,950	69,280	4.3	0.5
159: Urinary tract infections	459,947	500,307	502,701	8.8	0.5
120: Hemorrhoids	28,720	31,214	31,330	8.7	0.4
202: Rheumatoid arthritis and related disease	35,989	40,909	41,056	13.7	0.4
168: Inflammatory diseases of female pelvic organs	63,304	64,287	64,438	1.6	0.2
250: Nausea and vomiting	654,491	700,121	701,576	7.0	0.2
101: Coronary atherosclerosis and other heart disease	352,891	393,036	393,822	11.4	0.2
94: Other ear and sense organ disorders	131,127	145,389	145,482	10.9	0.1
53: Disorders of lipid metabolism	585,183	686,965	687,023	17.4	0.0
213: Cardiac and circulatory congenital anomalies	8,495	10,198	10,195	20.0	0.0
115: Aortic; peripheral; and visceral artery aneurysms	14,912	16,870	16,865	13.1	0.0
146: Diverticulosis and diverticulitis	60,155	69,124	69,096	14.9	0.0
239: Superficial injury; contusion	717,984	728,365	727,857	1.4	-0.1
214: Digestive congenital anomalies	2,820	3,167	3,164	12.3	-0.1
124: Acute and chronic tonsillitis	35,283	38,288	38,250	8.5	-0.1
232: Sprains and strains	616,095	624,901	623,685	1.4	-0.2
55: Fluid and electrolyte disorders	296,737	317,635	316,820	7.0	-0.3
92: Otitis media and related conditions	249,171	266,535	265,101	7.0	-0.5
27: Cancer of ovary	5,904	6,428	6,388	8.9	-0.6
205: Spondylosis; intervertebral disc disorders; other back problems	715,501	786,293	780,491	9.9	-0.7
163: Genitourinary symptoms and ill-defined conditions	233,987	257,760	255,779	10.2	-0.8
19: Cancer of bronchus; lung	21,088	22,411	22,237	6.3	-0.8

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
59: Deficiency and other anemia	154,541	170,272	168,950	10.2	–0.8
105: Conduction disorders	112,659	128,907	127,880	14.4	–0.8
40: Multiple myeloma	2,979	3,325	3,296	11.6	–0.9
199: Chronic ulcer of skin	19,259	20,990	20,763	9.0	–1.1
128: Asthma	573,682	702,954	694,233	22.5	–1.2
83: Epilepsy; convulsions	180,301	196,587	193,756	9.0	–1.4
10: Immunizations and screening for infectious disease	176,651	201,698	198,610	14.2	–1.5
51: Other endocrine disorders	29,162	34,000	33,470	16.6	–1.6
166: Other male genital disorders	37,313	42,071	41,298	12.8	–1.8
30: Cancer of testis	1,818	2,059	2,017	13.3	–2.0
225: Joint disorders and dislocations; trauma-related	54,734	54,846	53,715	0.2	–2.1
89: Blindness and vision defects	54,077	59,749	58,500	10.5	–2.1
113: Late effects of cerebrovascular disease	21,019	22,477	22,006	6.9	–2.1
169: Endometriosis	6,095	6,483	6,346	6.4	–2.1
48: Thyroid disorders	256,073	300,431	294,080	17.3	–2.1
107: Cardiac arrest and ventricular fibrillation	16,988	17,693	17,318	4.1	–2.1
80: Multiple sclerosis	15,034	16,638	16,246	10.7	–2.4
208: Acquired foot deformities	3,469	3,889	3,797	12.1	–2.4
23: Other non-epithelial cancer of skin	20,047	21,538	20,991	7.4	–2.5
26: Cancer of cervix	8,914	10,018	9,763	12.4	–2.5
132: Lung disease due to external agents	3,089	3,187	3,097	3.2	–2.8
235: Open wounds of head; neck; and trunk	264,170	264,578	257,040	0.2	–2.8
29: Cancer of prostate	30,959	32,942	31,979	6.4	–2.9
14: Cancer of colon	19,629	21,186	20,556	7.9	–3.0
37: Hodgkin`s disease	2,095	2,217	2,147	5.8	–3.2
170: Prolapse of female genital organs	2,466	2,756	2,664	11.8	–3.3
252: Malaise and fatigue	150,555	171,129	165,292	13.7	–3.4
24: Cancer of breast	47,022	52,239	50,432	11.1	–3.5
164: Hyperplasia of prostate	47,606	54,762	52,788	15.0	–3.6
78: Other CNS infection and poliomyelitis	1,973	2,107	2,023	6.8	–4.0
49: Diabetes mellitus without complication	694,938	811,320	775,047	16.7	–4.5
38: Non-Hodgkin`s lymphoma	10,940	11,687	11,158	6.8	–4.5
247: Lymphadenitis	39,477	45,208	43,137	14.5	–4.6
91: Other eye disorders	64,958	72,706	69,329	11.9	–4.6
154: Noninfectious gastroenteritis	129,201	139,660	133,062	8.1	–4.7
54: Gout and other crystal arthropathies	48,799	55,309	52,580	13.3	–4.9

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
212: Other bone disease and musculoskeletal deformities	59,110	68,280	64,892	15.5	-5.0
137: Diseases of mouth; excluding dental	31,133	36,127	34,210	16.0	-5.3
117: Other circulatory disease	266,829	307,712	290,724	15.3	-5.5
652: Attention-deficit, conduct, and disruptive behavior disorders	61,888	73,392	69,181	18.6	-5.7
11: Cancer of head and neck	6,408	6,748	6,346	5.3	-6.0
173: Menopausal disorders	4,278	4,691	4,402	9.7	-6.2
116: Aortic and peripheral arterial embolism or thrombosis	1,281	1,395	1,306	8.9	-6.4
657: Mood disorders	450,004	526,045	492,343	16.9	-6.4
139: Gastroduodenal ulcer (except hemorrhage)	21,778	23,480	21,959	7.8	-6.5
47: Other and unspecified benign neoplasm	20,852	23,784	22,214	14.1	-6.6
151: Other liver diseases	83,379	99,908	93,250	19.8	-6.7
119: Varicose veins of lower extremity	6,406	7,085	6,610	10.6	-6.7
21: Cancer of bone and connective tissue	1,206	1,424	1,326	18.1	-6.9
211: Other connective tissue disease	548,592	614,537	571,487	12.0	-7.0
81: Other hereditary and degenerative nervous system conditions	33,554	38,010	35,096	13.3	-7.7
56: Cystic fibrosis	1,278	1,383	1,275	8.2	-7.8
224: Other perinatal conditions	25,548	25,772	23,758	0.9	-7.8
8: Other infections; including parasitic	57,661	63,814	58,785	10.7	-7.9
6: Hepatitis	43,870	50,332	46,359	14.7	-7.9
126: Other upper respiratory infections	848,426	1,012,203	931,348	19.3	-8.0
160: Calculus of urinary tract	173,037	189,635	173,552	9.6	-8.5
659: Schizophrenia and other psychotic disorders	95,847	109,776	99,714	14.5	-9.2
1: Tuberculosis	2,417	2,869	2,586	18.7	-9.9
210: Systemic lupus erythematosus and connective tissue disorders	26,149	29,569	26,563	13.1	-10.2
217: Other congenital anomalies	19,805	22,579	20,218	14.0	-10.5
96: Heart valve disorders	66,790	77,130	68,955	15.5	-10.6
13: Cancer of stomach	2,465	2,787	2,466	13.1	-11.5
88: Glaucoma	19,477	21,546	19,052	10.6	-11.6
204: Other non-traumatic joint disorders	403,094	444,311	390,889	10.2	-12.0
22: Melanomas of skin	6,392	7,350	6,428	15.0	-12.5
206: Osteoporosis	45,809	50,959	44,266	11.2	-13.1
44: Neoplasms of unspecified nature or uncertain behavior	10,322	11,626	10,088	12.6	-13.2

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
110: Occlusion or stenosis of precerebral arteries	10,153	12,224	10,454	20.4	-14.5
133: Other lower respiratory disease	647,297	750,831	633,948	16.0	-15.6
658: Personality disorders	9,341	11,245	9,476	20.4	-15.7
95: Other nervous system disorders	563,313	645,894	542,930	14.7	-15.9
86: Cataract	7,844	9,007	7,422	14.8	-17.6
52: Nutritional deficiencies	27,388	32,520	26,593	18.7	-18.2
134: Other upper respiratory disease	226,931	266,755	217,903	17.5	-18.3
219: Short gestation; low birth weight; and fetal growth retardation	690	633	501	-8.3	-20.9
114: Peripheral and visceral atherosclerosis	70,033	86,471	67,880	23.5	-21.5
179: Postabortion complications	942	960	738	1.9	-23.1
7: Viral infection	268,113	341,215	262,255	27.3	-23.1
104: Other and ill-defined heart disease	35,777	39,345	30,015	10.0	-23.7
218: Liveborn	158	174	131	10.1	-24.7
189: Previous C-section	2,925	3,529	2,648	20.6	-25.0
207: Pathological fracture	5,321	6,174	4,612	16.0	-25.3
175: Other female genital disorders	122,957	132,883	98,849	8.1	-25.6
246: Fever of unknown origin	331,195	396,319	291,490	19.7	-26.5
111: Other and ill-defined cerebrovascular disease	8,566	10,529	7,039	22.9	-33.1
256: Medical examination/evaluation	28,796	30,514	20,142	6.0	-34.0
215: Genitourinary congenital anomalies	11,432	12,900	8,317	12.8	-35.5
192: Umbilical cord complication	28	38	24	35.7	-36.8
43: Malignant neoplasm without specification of site	4,728	4,931	3,062	4.3	-37.9
141: Other disorders of stomach and duodenum	27,688	31,036	19,157	12.1	-38.3
227: Spinal cord injury	1,457	1,572	961	7.9	-38.9
77: Encephalitis (except that caused by tuberculosis or sexually transmitted disease)	571	620	375	8.6	-39.5
174: Female infertility	301	424	256	40.9	-39.6
171: Menstrual disorders	48,187	51,285	30,607	6.4	-40.3
242: Poisoning by other medications and drugs	36,676	40,311	23,887	9.9	-40.7
193: OB-related trauma to perineum and vulva	92	89	52	-3.3	-41.6
654: Developmental disorders	26,314	29,928	16,303	13.7	-45.5
28: Cancer of other female genital organs	1,468	1,632	864	11.2	-47.1
241: Poisoning by psychotropic agents	12,981	14,395	7,411	10.9	-48.5
85: Coma; stupor; and brain damage	22,098	23,153	11,644	4.8	-49.7

All-Listed CCS Diagnosis Category	Q4 2013, N	Q4 2014, N	Q4 2015, N	Percentage Change	
				2013–2014 (Baseline)	2014–2015 (Transition)
31: Cancer of other male genital organs	185	264	121	42.7	–54.2
195: Other complications of birth; puerperium affecting management of mother	29,462	33,600	15,249	14.0	–54.6
156: Nephritis; nephrosis; renal sclerosis	7,105	7,339	3,033	3.3	–58.7
87: Retinal detachments; defects; vascular occlusion; and retinopathy	21,825	24,246	9,581	11.1	–60.5
663: Screening and history of mental health and substance abuse codes	1,395,868	1,842,596	576,158	32.0	–68.7
220: Intrauterine hypoxia and birth asphyxia	45	60	16	33.3	–73.3
123: Influenza	62,216	164,907	19,406	165.1	–88.2
178: Induced abortion	4,085	4,137	438	1.3	–89.4
194: Forceps delivery	0	0	<=10	NA	NA

Abbreviations: CCS, Clinical Classifications Software; CNS, central nervous system; GI, gastrointestinal; HIV, human immunodeficiency virus; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification; NA, not applicable; NEC, not elsewhere classified; OB, obstetric; Q, quarter.

Note: Shaded rows indicate CCS diagnosis categories that changed by less than 5 percent with the introduction of ICD-10-CM. The table only includes CCS diagnosis categories; external cause (E code) categories are not included, as they are not expected to be comparable between ICD-9-CM and ICD-10-CM.

Source: Healthcare Cost and Utilization Project State Emergency Department Databases from 17 States.