2015 MEASURE INFORMATION ABOUT THE 30-DAY ALL-CAUSE HOSPITAL READMISSION MEASURE, CALCULATED FOR THE VALUE-BASED PAYMENT MODIFIER PROGRAM

A. Measure Name

30-day All-Cause Hospital Readmission measure

B. Measure Description

The 30-day All-Cause Hospital Readmission measure is a risk-standardized readmission rate for beneficiaries age 65 or older who were hospitalized at a short-stay acute-care hospital and experienced an unplanned readmission for any cause to an acute care hospital within 30 days of discharge. The measure applies to solo practitioners and groups, as identified by their Medicare Taxpayer Identification Number (TIN).

This TIN-level, risk-standardized, all-cause unplanned readmission measure is adapted from a hospital-level quality measure developed for the Centers for Medicare & Medicaid Services (CMS) by the Yale School of Medicine Center for Outcomes Research & Evaluation (Yale/CORE) (Horwitz et al. 2011). This version of the measure is based on the measure updates developed for CMS by Yale/CORE in 2015 (Horwitz et al. 2015). For the Annual Quality and Resource Use Reports (QRURS) only, CMS has edited Yale/CORE's 2015 measure to create a preliminary version that incorporates ICD-10 coding.

For each TIN participating in a Medicare Shared Savings Program Accountable Care Organization (ACO), CMS will compute the TIN's performance on this measure at the TIN level for the Mid-Year QRUR for informational purposes. However, CMS will display the TIN's ACO performance on this measure in the Annual QRUR and include the ACO's performance in the TIN's Quality Composite Score for the 2017 Value Modifier.[1]

C. Rationale

Some readmissions are unavoidable, but they may also result from poor quality of care, inadequate coordination of care, or lack of effective discharge planning and transitional care. CMS is applying this measure to the Value Modifier because reducing avoidable readmissions is a key component in the effort to promote more efficient, high-quality care.

[1] For ACO-level All-Cause Hospital Readmission measure calculations, please see the following documentation: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/ACO-8.pdf.

Information on TINs' performance on this measure is included in the Mid-Year and Annual QRURs and used in the calculation of the Value Modifier.

The information in this document was used to calculate this measure for the 2017 Value Modifier (based on calendar year 2015 data) as shown in the 2015 Annual QRUR. The 2015 Mid-Year QRUR provides a preview of each TIN's performance on this measure based on data from July 1, 2014 to June 30, 2015.

D. Measure Outcome (Numerator)

The outcome[2] for this measure is any unplanned readmission to a non-federal, short-stay, acute-care or critical access hospital within 30 days of discharge from an index admission. The identification of planned readmissions is discussed in section H. Readmissions during the 30-day period that follow a planned readmission are not counted in the outcome. In the case of multiple readmissions during the 30-day period, the measure counts only one outcome. Readmissions to the same hospital on the same day for the same principal diagnosis are not counted in the outcome.

E. Population Measured (Denominator)

Eligible (index) admissions include acute care hospitalizations for Medicare Fee-for-Service (FFS) beneficiaries age 65 or older at non-federal, short-stay, acute-care or critical access hospitals that occurred during the performance period and are not excluded for the reasons listed in the next section. Admissions for all principal diagnoses are included unless identified as having an exclusion. A hospital stay that counts as a readmission for a prior stay also counts as a new index stay if it meets the criteria for an index stay.

For the purposes of measure calculation (described in section H), the eligible admissions are assigned to one of five specialty cohorts—surgery/gynecology, general medicine, cardiorespiratory, cardiovascular, and neurology—based on diagnoses and procedure codes on the claim mapped to Agency for Healthcare Research and Quality (AHRQ) Clinical Classifications Software (CCS); section I provides a link to methodology reports that contain the detailed CCS categories for each cohort.

F. Exclusions

Beneficiaries are excluded from the population measured if they:

- were enrolled in Medicare Part A only or Medicare Part B only for any month during the performance period
- were enrolled in a private Medicare health plan (for example, a Medicare Advantage HMO/PPO, or a Medicare private FFS plan) for any month during the performance period

[2] This measure does not have a traditional numerator and denominator like a process of care measure; see risk adjustment and other resources below for more detail on measure construction.

- resided outside of the United States, its territories, and its possessions during the performance period

In addition, hospitalizations are excluded from the denominator if the beneficiary:

- died during the admission
- was not continuously enrolled in Medicare Part A FFS for at least 30 days following discharge from the index admission
- lacked complete Medicare Part A FFS enrollment history for the 12 months prior to the index admission
- was discharged against medical advice
- was transferred from the admission to another acute care hospital
- was hospitalized in a prospective payment system-exempt cancer hospital
- was hospitalized for medical treatment of cancer[3]
- was hospitalized for a primary psychiatric disease[4]

G. Data Collection Approach and Measure Collection

This measure is calculated from Medicare FFS claims (Parts A and B) and Medicare beneficiary enrollment data; no additional data submission is required. The measure uses one year of inpatient claims to identify eligible admissions and readmissions, as well as up to one year prior of inpatient data to collect diagnoses for risk adjustment. The measure uses Part A and B paid claims from the performance period to attribute beneficiaries to TINs as described in the next section.

H. Methodological Information and Measure Construction

Attribution. For the 30-day All-Cause Hospital Readmission measure, beneficiaries are attributed to a single TIN in a two-step process that takes into account the level of primary care services received (as measured by Medicare-allowed charges during the performance period) and the provider specialties that performed these services. Only beneficiaries who received a primary care service during the performance period are considered in attribution. For more information on attribution, please see the Attribution Fact Sheet at the following URL: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/2015-QRUR.html.

[3] These are identified by AHRQ CCS categories; see Table 1 for a listing of CCS categories for cancer that are excluded from the set of eligible index admissions.

[4] See Table 2 for a listing of AHRQ CCS categories for psychiatric disease that are excluded from the set of eligible index admissions.

The following two steps are used to attribute beneficiaries to a TIN for the 30-day All-Cause Hospital Readmission measure:

a. A beneficiary is attributed to a TIN in the first step if the beneficiary received more primary care services (as defined in Table 3) from primary care physicians (PCPs), nurse practitioners (NPs), physician assistants (PAs), and clinical nurse specialists (CNSs) in that TIN than in any other TIN.[4]

b. If a beneficiary did not receive a primary care service from any PCP, NP, PA, or CNS during the performance period, the beneficiary is attributed to a TIN in the second step if the beneficiary received more primary care services from specialist physicians within the TIN than in any other TIN.

Planned readmissions. This measure does not count hospitalizations that are considered planned in the outcome. Planned readmissions are identified based on the following three principles: (1) some types of care are always considered planned (obstetrical delivery, transplant surgery, maintenance chemotherapy, rehabilitation); (2) otherwise, a planned readmission is defined as a non-acute readmission for a scheduled procedure; and (3) admissions for acute illness or for complications of care are never planned. Tables 4 and 5 present procedure and diagnosis categories that are always considered planned, identified by AHRQ CCS. Table 6 presents procedure codes that are considered planned as long as they are not accompanied by one of the acute diagnoses listed in Table 7.

Risk adjustment and measure construction. Risk-adjusted readmissions account for beneficiary-level age and clinical risk factors of the beneficiaries attributed to the TIN that can affect hospital readmissions, regardless of the care provided. Risk-adjusted readmissions also include a TIN-level effect that accounts for the underlying risk of readmission for that TIN. The measure reports a single composite risk-standardized rate derived from the volume-weighted results of hierarchical regression models for five specialty cohorts: surgery/gynecology, general medicine, cardiorespiratory, cardiovascular, and neurology. For more detail on risk adjustment and measure construction, please see the technical reports referenced in Section I below.

Each specialty cohort model uses a fixed, common set of risk-adjustment variables summarized in Table 8. Diagnoses recorded in hospital claims during the year prior to hospitalization and secondary diagnoses from the index admission (that do not represent complications) are used in assigning risk-adjustment variables for each admission, grouped by selected condition categories. Diagnoses that are present on the index hospitalization claim but not in the prior year and which are considered complications of care are not included in the risk adjustment; see Table 9 for diagnosis categories considered to be complications of care.

A Hierarchical Generalized Linear Model (HGLM) logistic regression model is used to calculate a “standardized readmission ratio” (SRR) for each cohort. At the beneficiary level, HGLM models the log-odds of hospital readmission within 30 days of discharge using age, selected clinical covariates, and a TIN-specific intercept. At the TIN level, it models the TIN-specific intercepts as arising from a normal distribution. The TIN-level intercept represents the underlying risk of a readmission for a TIN’s beneficiaries, after accounting for beneficiary risk. The TIN-specific intercepts are given a distribution to account for the clustering (non-independence) of beneficiaries within the same TIN.

For each specialty cohort, the numerator of the SRR ("predicted") is the number of 30-day readmissions for beneficiaries within the specialty cohort predicted on the basis of the TIN's performance (accounting for its TIN-specific intercept) with its observed case mix; the denominator ("expected") is the number of readmissions expected for beneficiaries within the specialty cohort on the basis of the nation's performance with that TIN's case mix. If a TIN has an SRR > 1, this indicates higher than expected readmissions given the patient mix of its attributed beneficiaries; an SRR < 1 indicates lower than expected readmissions.

These SRRs are then pooled for each TIN to create a composite SRR. The composite SRR is the geometric mean of the specialty cohort SRRs, weighted by the number of admissions in the specialty cohort; the pooled SRR is then multiplied by the national observed readmission rate to produce the risk-standardized rate.

I. For Further Information

This risk-standardized, 30-day All-Cause Hospital Readmission measure is adapted from a hospital risk-standardized, all condition readmission quality measure previously developed for CMS by the CORE (Horwitz et al., 2011).[5] Specifically, it is calculated at the TIN level for the Value-Based Payment Modifier Program. This version of the measure is based on the measure updates developed for CMS by Yale/CORE in 2015 (Horwitz et al., 2015). For the Annual QRURs only, CMS has edited Yale's 2015 measure to create a preliminary version that incorporates ICD-10 coding in the last quarter of the CY2015 performance period. For the measure specifications and other information, please visit https://www.qualitynet.org and click on the "Hospitals-Inpatient" tab, scroll down to the "Claims-Based Measures" option, click on "Readmission Measures" and then select "Measure Methodology".

More information about the 2015 QRURs and 2017 Value Modifier is available at: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/2015-QRUR.html.

[5] This measure is also applied at the Shared Savings Program ACO level for that program. For more information see: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/ACO-8.pdf

J. References

Horwitz, L., Partovian C., Lin Z., et al. *Hospital-Wide All-Cause Risk-Standardized Readmission Measure: Measure Methodology Report*. Prepared for the Centers for Medicare and Medicaid Services. New Haven, CT: Yale New Haven Health Services Corporation/Center for Outcomes Research & Evaluation, 2011.

Horwitz, L., Partovian C., Lin Z., et al. *2015 Measure Updates and Specification Report: Hospital-Wide All-Cause Risk-Standardized Readmission Measure–Version 4.0*. Prepared for the Centers for Medicare and Medicaid Services. New Haven, CT: Yale New Haven Health Services Corporation/Center for Outcomes Research & Evaluation, 2015.

K. Tables

Table 1. Cancer discharge condition categories excluded from eligible admissions

AHRQ CCS (ICD-9)	Brief description	AHRQ CCS (ICD-10)	Brief description
11	Cancer of head and neck	11	Cancer of head and neck
12	Cancer of esophagus	12	Cancer of esophagus
13	Cancer of stomach	13	Cancer of stomach
14	Cancer of colon	14	Cancer of colon
15	Cancer of rectum and anus	15	Cancer of rectum and anus
16	Cancer of liver and intrahepatic bile duct	16	Cancer of liver and intrahepatic bile duct
17	Cancer of pancreas	17	Cancer of pancreas
18	Cancer of other GI organs, peritoneum	18	Cancer of other GI organs, peritoneum
19	Cancer of bronchus, lung	19	Cancer of bronchus, lung
20	Cancer, other respiratory and intrathoracic	20	Cancer, other respiratory and intrathoracic
21	Cancer of bone and connective tissue	21	Cancer of bone and connective tissue
22	Melanomas of skin	22	Melanomas of skin
23	Other non-epithelial cancer of skin	23	Other non-epithelial cancer of skin
24	Cancer of breast	24	Cancer of breast
25	Cancer of uterus	25	Cancer of uterus
26	Cancer of cervix	26	Cancer of cervix
27	Cancer of ovary	27	Cancer of ovary
28	Cancer of other female genital organs	28	Cancer of other female genital organs
29	Cancer of prostate	29	Cancer of prostate
30	Cancer of testis	30	Cancer of testis
31	Cancer of other male genital organs	31	Cancer of other male genital organs
32	Cancer of bladder	32	Cancer of bladder
33	Cancer of kidney and renal pelvis	33	Cancer of kidney and renal pelvis
34	Cancer of other urinary organs	34	Cancer of other urinary organs
35	Cancer of brain and nervous system	35	Cancer of brain and nervous system
36	Cancer of thyroid	36	Cancer of thyroid
37	Hodgkin`s disease	37	Hodgkin`s disease
38	Non-Hodgkin`s lymphoma	38	Non-Hodgkin`s lymphoma
39	Leukemias	39	Leukemias
40	Multiple myeloma	40	Multiple myeloma
41	Cancer, other and unspecified primary	41	Cancer, other and unspecified primary
42	Secondary malignancies	42	Secondary malignancies
43	Malignant neoplasm without specification of site	43	Malignant neoplasm without specification of site
44	Neoplasms of unspecified nature or uncertain behavior	44	Neoplasms of unspecified nature or uncertain behavior
45	Maintenance chemotherapy, radiotherapy	45	Maintenance chemotherapy, radiotherapy

Table 2. Psychiatric discharge condition categories excluded from eligible admissions

AHRQ CCS (ICD-9)	Brief description	AHRQ CCS (ICD-10)	Brief description
650	Adjustment disorders	650	Adjustment disorders
651	Anxiety disorders	651	Anxiety disorders
652	Attention-deficit, conduct, and disruptive behavior disorders	652	Attention-deficit
654	Developmental disorders	654	Developmental disorders
655	Disorders usually diagnosed in infancy, childhood, or adolescence	655	Disorders usually diagnosed in infancy
656	Impulse control disorders, NEC	656	Impulse control disorders
657	Mood disorders	657	Mood disorders
658	Personality disorders	658	Personality disorders
659	Schizophrenia and other psychotic disorders	659	Schizophrenia and other psychotic disorders
662	Suicide and intentional self-inflicted injury	662	Suicide and intentional self-inflicted injury
670	Miscellaneous disorders	670	Miscellaneous disorders

Table 3. Healthcare Common Procedure Coding System (HCPCS) primary care service codes

HCPCS codes	Brief description
99201–99205	New patient, office, or other outpatient visit
99211–99215	Established patient, office, or other outpatient visit
99304–99306	New patient, nursing facility care
99307–99310	Established patient, nursing facility care
99315–99316	Established patient, discharge day management service
99318	Established patient, other nursing facility service
99324–99328	New patient, domiciliary or rest home visit
99334–99337	Established patient, domiciliary or rest home visit
99339–99340	Established patient, physician supervision of patient (patient not present) in home, domiciliary, or rest home
99341–99345	New patient, home visit
99347–99350	Established patient, home visit
G0402	Initial Medicare visit
G0438	Annual wellness visit, initial
G0439	Annual wellness visit, subsequent
G0463	Hospital outpatient clinic visit (Electing Teaching Amendment hospitals only)

Note: Labels are approximate. See the American Medical Association's Current Procedural Terminology ® and the CMS website (http://www.cms.gov/Medicare/Coding/HCPCSReleaseCodeSets/HCPCS_Quarterly_Update.html) for detailed definitions.

Table 4. Procedure categories that are always considered planned (version 3.0)

AHRQ Procedure CCS (ICD-9)	Description	AHRQ Procedure CCS (ICD-10)	Description
64	Bone marrow transplant	64	Bone marrow transplant
105	Kidney transplant	105	Kidney transplant
134	Cesarean section*	134	Cesarean section*
135	Forceps, vacuum, and breech delivery*	135	Forceps, vacuum, and breech delivery*
176	Other orgran transplantation	176	Other orgran transplantation (other than bone marrow corneal or kidney)

* CCS to be included only in all-payer settings, not intended for inclusion in CMS's claims-based readmission measures for Medicare FFS beneficiaries age 65+ years.

Table 5. Diagnosis categories that are always considered planned (version 3.0)

AHRQ Procedure CCS (ICD-9)	Description	AHRQ Procedure CCS (ICD-10)	Description
45	Maintenance chemotherapy	45	Maintenance chemotherapy
194	Forceps delivery*	194	Forceps delivery*
196	Normal pregnancy and/or delivery*	196	Normal pregnancy and/or delivery*
254	Rehabilitation	254	Rehabilitation

* CCS to be included only in all-payer settings, not intended for inclusion in CMS's claims-based readmission measures for Medicare FFS beneficiaries age 65+ years.

Table 6. Potentially planned procedure codes (version 3.0)

ICD-9	Description	ICD-10	Description
AHRQ Procedure CCS	--	**AHRQ Procedure CCS**	--
3	Laminectomy, excision intervertebral disc	3	Excision, destruction or resection of intervertebral disc
5	Insertion of catheter or spinal stimulator and injection into spinal	5	Insertion of catheter or spinal stimulator and injection into spinal
9	Other OR therapeutic nervous system procedures	9	Other OR therapeutic nervous system procedures
10	Thyroidectomy, partial or complete	10	Thyroidectomy; partial or complete
12	Other therapeutic endocrine procedures	12	Therapeutic endocrine procedures
33	Other OR therapeutic procedures on nose, mouth, and pharynx	33	Other OR therapuetic procedures of mouth and throat
36	Lobectomy or pneumonectomy	36	Lobectomy or pneumonectomy
38	Other diagnostic procedures on lung and bronchus	38	Other diagnostic procedures on lung and bronchus
40	Other diagnostic procedures of respiratory tract and mediastinum	40	Other diagnostic procedures of respiratory tract and mediastinum
43	Heart valve procedures	43	Heart valve procedures
44	Coronary artery bypass graft (CABG)	44	Coronary artery bypass graft (CABG)
45	Percutaneous transluminal coronary angioplasty (PTCA)	45	Percutaneous transluminal coronary angioplasty (PTCA) with or without stent
47	Diagnostic cardiac catheterization, coronary arteriography	47	Diagnostic cardiac catheterization; coronary arteriography
48	Insertion, revision, replacement, or removal of cardiac pacemaker or cardioverter/defibrillator	48	Insertion; revision; replacement; removal of cardiac pacemaker or cardioverter/defibrillator
49	Other OR heart procedures	49	Other OR heart procedures
51	Endarterectomy, vessel of head and neck	51	Endarterectomy; vessel of head and neck
52	Aortic resection, replacement or anastomosis	52	Aortic resection; replacement or anastomosis
53	Varicose vein stripping, lower limb	53	Varicose vein stripping; lower limb
55	Peripheral vascular bypass	55	Peripheral vascular bypass
56	Other vascular bypass and shunt, not heart	56	Other vascular bypass and shunt; not heart
59	Other OR procedures on vessels of head and neck	59	Other OR procedures on vessels of head and neck
62	Other diagnostic cardiovascular procedures	62	Other diagnostic cardiovascular procedures
66	Procedures on spleen	66	Procedures on spleen
67	Other therapeutic procedures, hemic and lymphatic system	67	Other therapeutic procedures; hemic and lymphatic system
74	Gastrectomy, partial and total	74	Gastrectomy; partial and total
78	Colorectal resection	78	Colorectal resection
79	Local excision of large intestine lesion (not endoscopic)	79	Excision of large intestine lesion (not endoscopic)
84	Cholecystectomy and common duct exploration	84	Cholecystectomy and common duct exploration
85	Inguinal and femoral hernia repair	85	Inguinal and femoral hernia repair
86	Other hernia repair	86	Other hernia repair

ICD-9	Description	ICD-10	Description
99	Other OR gastrointestinal therapeutic procedures	99	Other OR gastrointestinal therapeutic procedures
104	Nephrectomy, partial or complete	104	Nephrectomy; partial or complete
106	Genitourinary incontinence procedures	106	Genitourinary incontinence procedures
107	Extracorporeal lithotripsy, urinary	107	Extracorporeal lithotripsy; urinary
109	Procedures on the urethra	109	Procedures on the urethra
112	Other OR therapeutic procedures of urinary tract	112	Other OR therapeutic procedures of urinary tract
113	Transurethral resection of prostate (TURP)	113	Transurethral resection of prostate (TURP)
114	Open prostatectomy	114	Open prostatectomy
119	Oophorectomy, unilateral and bilateral	119	Oophorectomy; unilateral and bilateral
120	Other operations on ovary	120	Other operations on ovary
124	Hysterectomy, abdominal and vaginal	124	Hysterectomy; abdominal and vaginal
129	Repair of cystocele and rectocele, obliteration of vaginal vault	129	Repair of cystocele and rectocele; obliteration of vaginal vault
132	Other OR therapeutic procedures, female organs	132	Other OR therapeutic procedures; female organs
142	Partial excision bone	142	Partial excision bone
152	Arthroplasty knee	152	Arthroplasty knee
153	Hip replacement, total and partial	153	Hip replacement; total and partial
154	Arthroplasty other than hip or knee	154	Arthroplasty other than hip or knee
157	Amputation of lower extremity	157	Amputation of lower extremity
158	Spinal fusion	158	Spinal fusion
159	Other diagnostic procedures on musculoskeletal system	159	Other diagnostic procedures on musculoskeletal system
166	Lumpectomy, quadrantectomy of breast	166	Lumpectomy; quadrantectomy of breast
167	Mastectomy	167	Mastectomy
169	Debridement of wound, infection, or burn		Codes were split among proc CCS 170, 174, 175, and 231; Proc CCS 170 is already in the algorithm but should be removed due to the new codes; Proc CCS 175 has been added in the ICD-10 version; Proc CCS 174 and 231 were not deemed appropriate for this algorithm
170	Excision of skin lesion		Excision of skin - This Proc CCS should be removed in the ICD-10 version of the algorithm
172	Skin graft	172	Skin graft
--	--	175	Other OR therapeutic procedures on skin subcutaneous tissue fascia and breast
ICD-9 CODES	**--**	**ICD-10 CODES**	**--**
30.1	Hemilaryngectomy	0CBS0ZZ	Excision of Larynx, Open Approach
30.1	Hemilaryngectomy	0CBS3ZZ	Excision of Larynx, Percutaneous Approach
30.1	Hemilaryngectomy	0CBS4ZZ	Excision of Larynx, Percutaneous Endoscopic Approach
30.1	Hemilaryngectomy	0CBS7ZZ	Excision of Larynx, Via Natural or Artificial Opening

ICD-9	Description	ICD-10	Description
30.1	Hemilaryngectomy	0CBS8ZZ	Excision of Larynx, Via Natural or Artificial Opening Endoscopic
30.29	Other partial laryngectomy	0CBS0ZZ	Excision of Larynx, Open Approach
30.29	Other partial laryngectomy	0CBS3ZZ	Excision of Larynx, Percutaneous Approach
30.29	Other partial laryngectomy	0CBS4ZZ	Excision of Larynx, Percutaneous Endoscopic Approach
30.29	Other partial laryngectomy	0CBS7ZZ	Excision of Larynx, Via Natural or Artificial Opening
30.29	Other partial laryngectomy	0CBS8ZZ	Excision of Larynx, Via Natural or Artificial Opening Endoscopic
30.3	Complete laryngectomy	0B110F4	Bypass Trachea to Cutaneous with Tracheostomy Device, Open Approach
30.3	Complete laryngectomy	0B110Z4	Bypass Trachea to Cutaneous, Open Approach
30.3	Complete laryngectomy	0B113F4	Bypass Trachea to Cutaneous with Tracheostomy Device, Percutaneous Approach
30.3	Complete laryngectomy	0B113Z4	Bypass Trachea to Cutaneous, Percutaneous Approach
30.3	Complete laryngectomy	0B114F4	Bypass Trachea to Cutaneous with Tracheostomy Device, Percutaneous Endoscopic Approach
30.3	Complete laryngectomy	0B114Z4	Bypass Trachea to Cutaneous, Percutaneous Endoscopic Approach
30.3	Complete laryngectomy	0CTS0ZZ	Resection of Larynx, Open Approach
30.3	Complete laryngectomy	0CTS4ZZ	Resection of Larynx, Percutaneous Endoscopic Approach
30.3	Complete laryngectomy	0CTS7ZZ	Resection of Larynx, Via Natural or Artificial Opening
30.3	Complete laryngectomy	0CTS8ZZ	Resection of Larynx, Via Natural or Artificial Opening Endoscopic
30.4	Radical laryngectomy	0B110F4	Bypass Trachea to Cutaneous with Tracheostomy Device, Open Approach
30.4	Radical laryngectomy	0B110Z4	Bypass Trachea to Cutaneous, Open Approach
30.4	Radical laryngectomy	0B113F4	Bypass Trachea to Cutaneous with Tracheostomy Device, Percutaneous Approach
30.4	Radical laryngectomy	0B113Z4	Bypass Trachea to Cutaneous, Percutaneous Approach
30.4	Radical laryngectomy	0B114F4	Bypass Trachea to Cutaneous with Tracheostomy Device, Percutaneous Endoscopic Approach
30.4	Radical laryngectomy	0B114Z4	Bypass Trachea to Cutaneous, Percutaneous Endoscopic Approach
30.4	Radical laryngectomy	0CTS0ZZ	Resection of Larynx, Open Approach
30.4	Radical laryngectomy	0CTS4ZZ	Resection of Larynx, Percutaneous Endoscopic Approach
30.4	Radical laryngectomy	0CTS7ZZ	Resection of Larynx, Via Natural or Artificial Opening
30.4	Radical laryngectomy	0CTS8ZZ	Resection of Larynx, Via Natural or Artificial Opening Endoscopic
30.4	Radical laryngectomy	0GTG0ZZ	Resection of Left Thyroid Gland Lobe, Open Approach

ICD-9	Description	ICD-10	Description
30.4	Radical laryngectomy	0GTG4ZZ	Resection of Left Thyroid Gland Lobe, Percutaneous Endoscopic Approach
30.4	Radical laryngectomy	0GTH0ZZ	Resection of Right Thyroid Gland Lobe, Open Approach
30.4	Radical laryngectomy	0GTH4ZZ	Resection of Right Thyroid Gland Lobe, Percutaneous Endoscopic Approach
30.4	Radical laryngectomy	0GTK0ZZ	Resection of Thyroid Gland, Open Approach
30.4	Radical laryngectomy	0GTK4ZZ	Resection of Thyroid Gland, Percutaneous Endoscopic Approach
30.4	Radical laryngectomy	0WB60ZZ	Excision of Neck, Open Approach
30.4	Radical laryngectomy	0WB63ZZ	Excision of Neck, Percutaneous Approach
30.4	Radical laryngectomy	0WB64ZZ	Excision of Neck, Percutaneous Endoscopic Approach
30.4	Radical laryngectomy	0WB6XZZ	Excision of Neck, External Approach
30.4	Radical laryngectomy	07T10ZZ	Resection of Right Neck Lymphatic, Open Approach
30.4	Radical laryngectomy	07T14ZZ	Resection of Right Neck Lymphatic, Perc Endo Approach
30.4	Radical laryngectomy	07T20ZZ	Resection of Left Neck Lymphatic, Open Approach
30.4	Radical laryngectomy	07T24ZZ	Resection of Left Neck Lymphatic, Perc Endo Approach
31.74	Revision of tracheostomy	0BW10FZ	Revision of Tracheostomy Device in Trachea, Open Approach
31.74	Revision of tracheostomy	0BW13FZ	Revision of Tracheostomy Device in Trachea, Percutaneous Approach
31.74	Revision of tracheostomy	0BW14FZ	Revision of Tracheostomy Device in Trachea, Percutaneous Endoscopic Approach
31.74	Revision of tracheostomy	0WB6XZ2	Excision of Neck, Stoma, External Approach
31.74	Revision of tracheostomy	0WQ6XZ2	Repair Neck, Stoma, External Approach
34.6	Scarification of pleura	0B5N0ZZ	Destruction of Right Pleura, Open Approach
34.6	Scarification of pleura	0B5N3ZZ	Destruction of Right Pleura, Percutaneous Approach
34.6	Scarification of pleura	0B5N4ZZ	Destruction of Right Pleura, Percutaneous Endoscopic Approach
34.6	Scarification of pleura	0B5P0ZZ	Destruction of Left Pleura, Open Approach
34.6	Scarification of pleura	0B5P3ZZ	Destruction of Left Pleura, Percutaneous Approach
34.6	Scarification of pleura	0B5P4ZZ	Destruction of Left Pleura, Percutaneous Endoscopic Approach
38.18	Endarterectomy, lower limb arteries	04CK0ZZ	Extirpation of Matter from Right Femoral Artery, Open Approach
38.18	Endarterectomy, lower limb arteries	04CK3ZZ	Extirpation of Matter from Right Femoral Artery, Percutaneous Approach
38.18	Endarterectomy, lower limb arteries	04CK4ZZ	Extirpation of Matter from Right Femoral Artery, Percutaneous Endoscopic Approach

ICD-9	Description	ICD-10	Description
38.18	Endarterectomy, lower limb arteries	04CL0ZZ	Extirpation of Matter from Left Femoral Artery, Open Approach
38.18	Endarterectomy, lower limb arteries	04CL3ZZ	Extirpation of Matter from Left Femoral Artery, Percutaneous Approach
38.18	Endarterectomy, lower limb arteries	04CL4ZZ	Extirpation of Matter from Left Femoral Artery, Percutaneous Endoscopic Approach
38.18	Endarterectomy, lower limb arteries	04CM0ZZ	Extirpation of Matter from Right Popliteal Artery, Open Approach
38.18	Endarterectomy, lower limb arteries	04CM3ZZ	Extirpation of Matter from Right Popliteal Artery, Percutaneous Approach
38.18	Endarterectomy, lower limb arteries	04CM4ZZ	Extirpation of Matter from Right Popliteal Artery, Percutaneous Endoscopic Approach
38.18	Endarterectomy, lower limb arteries	04CN0ZZ	Extirpation of Matter from Left Popliteal Artery, Open Approach
38.18	Endarterectomy, lower limb arteries	04CN3ZZ	Extirpation of Matter from Left Popliteal Artery, Percutaneous Approach
38.18	Endarterectomy, lower limb arteries	04CN4ZZ	Extirpation of Matter from Left Popliteal Artery, Percutaneous Endoscopic Approach
38.18	Endarterectomy, lower limb arteries	04CP0ZZ	Extirpation of Matter from Right Anterior Tibial Artery, Open Approach
38.18	Endarterectomy, lower limb arteries	04CP3ZZ	Extirpation of Matter from Right Anterior Tibial Artery, Percutaneous Approach
38.18	Endarterectomy, lower limb arteries	04CP4ZZ	Extirpation of Matter from Right Anterior Tibial Artery, Percutaneous Endoscopic Approach
38.18	Endarterectomy, lower limb arteries	04CQ0ZZ	Extirpation of Matter from Left Anterior Tibial Artery, Open Approach
38.18	Endarterectomy, lower limb arteries	04CQ3ZZ	Extirpation of Matter from Left Anterior Tibial Artery, Percutaneous Approach
38.18	Endarterectomy, lower limb arteries	04CQ4ZZ	Extirpation of Matter from Left Anterior Tibial Artery, Percutaneous Endoscopic Approach
38.18	Endarterectomy, lower limb arteries	04CR0ZZ	Extirpation of Matter from Right Posterior Tibial Artery, Open Approach
38.18	Endarterectomy, lower limb arteries	04CR3ZZ	Extirpation of Matter from Right Posterior Tibial Artery, Percutaneous Approach
38.18	Endarterectomy, lower limb arteries	04CR4ZZ	Extirpation of Matter from Right Posterior Tibial Artery, Percutaneous Endoscopic Approach
38.18	Endarterectomy, lower limb arteries	04CS0ZZ	Extirpation of Matter from Left Posterior Tibial Artery, Open Approach
38.18	Endarterectomy, lower limb arteries	04CS3ZZ	Extirpation of Matter from Left Posterior Tibial Artery, Percutaneous Approach
38.18	Endarterectomy, lower limb arteries	04CS4ZZ	Extirpation of Matter from Left Posterior Tibial Artery, Percutaneous Endoscopic Approach
38.18	Endarterectomy, lower limb arteries	04CT0ZZ	Extirpation of Matter from Right Peroneal Artery, Open Approach
38.18	Endarterectomy, lower limb arteries	04CT3ZZ	Extirpation of Matter from Right Peroneal Artery, Percutaneous Approach

ICD-9	Description	ICD-10	Description
38.18	Endarterectomy, lower limb arteries	04CT4ZZ	Extirpation of Matter from Right Peroneal Artery, Percutaneous Endoscopic Approach
38.18	Endarterectomy, lower limb arteries	04CU0ZZ	Extirpation of Matter from Left Peroneal Artery, Open Approach
38.18	Endarterectomy, lower limb arteries	04CU3ZZ	Extirpation of Matter from Left Peroneal Artery, Percutaneous Approach
38.18	Endarterectomy, lower limb arteries	04CU4ZZ	Extirpation of Matter from Left Peroneal Artery, Percutaneous Endoscopic Approach
38.18	Endarterectomy, lower limb arteries	04CV0ZZ	Extirpation of Matter from Right Foot Artery, Open Approach
38.18	Endarterectomy, lower limb arteries	04CV3ZZ	Extirpation of Matter from Right Foot Artery, Percutaneous Approach
38.18	Endarterectomy, lower limb arteries	04CV4ZZ	Extirpation of Matter from Right Foot Artery, Percutaneous Endoscopic Approach
38.18	Endarterectomy, lower limb arteries	04CW0ZZ	Extirpation of Matter from Left Foot Artery, Open Approach
38.18	Endarterectomy, lower limb arteries	04CW3ZZ	Extirpation of Matter from Left Foot Artery, Percutaneous Approach
38.18	Endarterectomy, lower limb arteries	04CW4ZZ	Extirpation of Matter from Left Foot Artery, Percutaneous Endoscopic Approach
38.18	Endarterectomy, lower limb arteries	04CY0ZZ	Extirpation of Matter from Lower Artery, Open Approach
38.18	Endarterectomy, lower limb arteries	04CY3ZZ	Extirpation of Matter from Lower Artery, Percutaneous Approach
38.18	Endarterectomy, lower limb arteries	04CY4ZZ	Extirpation of Matter from Lower Artery, Percutaneous Endoscopic Approach
55.03	Percutaneous nephrostomy without fragmentation	0T9030Z	Drainage of Right Kidney with Drainage Device, Percutaneous Approach
55.03	Percutaneous nephrostomy without fragmentation	0T9040Z	Drainage of Right Kidney with Drainage Device, Percutaneous Endoscopic Approach
55.03	Percutaneous nephrostomy without fragmentation	0T9130Z	Drainage of Left Kidney with Drainage Device, Percutaneous Approach
55.03	Percutaneous nephrostomy without fragmentation	0T9140Z	Drainage of Left Kidney with Drainage Device, Percutaneous Endoscopic Approach
55.03	Percutaneous nephrostomy without fragmentation	0TC03ZZ	Extirpation of Matter from Right Kidney, Percutaneous Approach
55.03	Percutaneous nephrostomy without fragmentation	0TC04ZZ	Extirpation of Matter from Right Kidney, Percutaneous Endoscopic Approach
55.03	Percutaneous nephrostomy without fragmentation	0TC13ZZ	Extirpation of Matter from Left Kidney, Percutaneous Approach
55.03	Percutaneous nephrostomy without fragmentation	0TC14ZZ	Extirpation of Matter from Left Kidney, Percutaneous Endoscopic Approach
55.03	Percutaneous nephrostomy without fragmentation	0TC33ZZ	Extirpation of Matter from R Kidney Pelvis, Perc Approach
55.03	Percutaneous nephrostomy without fragmentation	0TC34ZZ	Extirpate of Matter from R Kidney Pelvis, Perc Endo Approach
55.03	Percutaneous nephrostomy without fragmentation	0TC43ZZ	Extirpation of Matter from Left Kidney Pelvis, Perc Approach
55.03	Percutaneous nephrostomy without fragmentation	0TC44ZZ	Extirpate of Matter from L Kidney Pelvis, Perc Endo Approach

ICD-9	Description	ICD-10	Description
55.04	Percutaneous nephrostomy with fragmentation	0TF33ZZ	Fragmentation in Right Kidney Pelvis, Percutaneous Approach
55.04	Percutaneous nephrostomy with fragmentation	0TF34ZZ	Fragmentation in Right Kidney Pelvis, Percutaneous Endoscopic Approach
55.04	Percutaneous nephrostomy with fragmentation	0TF43ZZ	Fragmentation in Left Kidney Pelvis, Percutaneous Approach
55.04	Percutaneous nephrostomy with fragmentation	0TF44ZZ	Fragmentation in Left Kidney Pelvis, Percutaneous Endoscopic Approach
94.26	Subconvulsive electroshock therapy	GZB4ZZZ	Other Electroconvulsive Therapy
94.27	Other electroshock therapy	GZB0ZZZ	Electroconvulsive Therapy, Unilateral-Single Seizure
94.27	Other electroshock therapy	GZB1ZZZ	Electroconvulsive Therapy, Unilateral-Multiple Seizure
94.27	Other electroshock therapy	GZB2ZZZ	Electroconvulsive Therapy, Bilateral-Single Seizure
94.27	Other electroshock therapy	GZB3ZZZ	Electroconvulsive Therapy, Bilateral-Multiple Seizure
94.27	Other electroshock therapy	GZB4ZZZ	Other Electroconvulsive Therapy

Note: The ICD-10 codes in this table are preliminary mappings from version 3.0 of the planned readmission algorithm. They apply only to the Annual QRURs.

Table 7. Acute diagnosis codes (Version 3.0)

ICD-9	Description	ICD-10	Description
AHRQ Diagnosis CCS	**--**	**AHQR Diagnosis CCS**	**--**
1	Tuberculosis	1	Tuberculosis
2	Septicemia (except in labor)	2	Septicemia (except in labor)
3	Bacterial infection; unspecified site	3	Bacterial infection; unspecified site
4	Mycoses	4	Mycoses
5	HIV infection	5	HIV infection
7	Viral infection	7	Viral infection
8	Other infections; including parasitic	8	Other infections; including parasitic
9	Sexually transmitted infections (not HIV or hepatitis)	9	Sexually transmitted infections (not HIV or hepatitis)
54	Gout and other crystal arthropathies	54	Gout and other crystal arthropathies
55	Fluid and electrolyte disorders	55	Fluid and electrolyte disorders
60	Acute posthemorrhagic anemia	60	Acute posthemorrhagic anemia
61	Sickle cell anemia	61	Sickle cell anemia
63	Diseases of white blood cells	63	Diseases of white blood cells
76	Meningitis (except that caused by tuberculosis or sexually transmitted disease)	76	Meningitis (except that caused by tuberculosis or sexually transmitted disease)
77	Encephalitis (except that caused by tuberculosis or sexually transmitted disease)	77	Encephalitis (except that caused by tuberculosis or sexually transmitted disease)
78	Other CNS infection and poliomyelitis	78	Other CNS infection and poliomyelitis
82	Paralysis	82	Paralysis
83	Epilepsy; convulsions	83	Epilepsy; convulsions
84	Headache; including migraine	84	Headache; including migraine

ICD-9	Description	ICD-10	Description
85	Coma; stupor; and brain damage	85	Coma; stupor; and brain damage
87	Retinal detachments; defects; vascular occlusion; and retinopathy	87	Retinal detachments; defects; vascular occlusion; and retinopathy
89	Blindness and vision defects	89	Blindness and vision defects
90	Inflammation; infection of eye (except that caused by tuberculosis or sexually transmitted disease)	90	Inflammation; infection of eye (except that caused by tuberculosis or sexually transmitted disease)
91	Other eye disorders	91	Other eye disorders
92	Otitis media and related conditions	92	Otitis media and related conditions
93	Conditions associated with dizziness or vertigo	93	Conditions associated with dizziness or vertigo
99	Hypertension with complications and secondary hypertension	99	Hypertension with complications and secondary hypertension
100	Acute myocardial infarction (with the exception of ICD-9 codes 410.x2)	100	Acute myocardial infarction (excluding I220, I221, I222, I228, and I229)
102	Nonspecific chest pain	102	Nonspecific chest pain
104	Other and ill-defined heart disease	104	Other and ill-defined heart disease
107	Cardiac arrest and ventricular fibrillation	107	Cardiac arrest and ventricular fibrillation
109	Acute cerebrovascular disease	109	Acute cerebrovascular disease
112	Transient cerebral ischemia	112	Transient cerebral ischemia
116	Aortic and peripheral arterial embolism or thrombosis	116	Aortic and peripheral arterial embolism or thrombosis
118	Phlebitis; thrombophlebitis and thromboembolism	118	Phlebitis; thrombophlebitis and thromboembolism
120	Hemorrhoids	120	Hemorrhoids
122	Pneumonia (except that caused by TB or sexually transmitted disease)	122	Pneumonia (except that caused by TB or sexually transmitted disease)
123	Influenza	123	Influenza
124	Acute and chronic tonsillitis	124	Acute and chronic tonsillitis
125	Acute bronchitis	125	Acute bronchitis
126	Other upper respiratory infections	126	Other upper respiratory infections
127	Chronic obstructive pulmonary disease and bronchiectasis	127	Chronic obstructive pulmonary disease and bronchiectasis
128	Asthma	128	Asthma
129	Aspiration pneumonitis; food/vomitus	129	Aspiration pneumonitis; food/vomitus
130	Pleurisy; pneumothorax; pulmonary collapse	130	Pleurisy; pneumothorax; pulmonary collapse
131	Respiratory failure; insufficiency; arrest (adult)	131	Respiratory failure; insufficiency; arrest (adult)
135	Intestinal infection	135	Intestinal infection
137	Diseases of mouth; excluding dental	137	Diseases of mouth; excluding dental
139	Gastroduodenal ulcer (except hemorrhage)	139	Gastroduodenal ulcer (except hemorrhage)
140	Gastritis and duodenitis	140	Gastritis and duodenitis
142	Appendicitis and other appendiceal conditions	142	Appendicitis and other appendiceal conditions
145	Intestinal obstruction without hernia	145	Intestinal obstruction without hernia
146	Diverticulosis and diverticulitis	146	Diverticulosis and diverticulitis
148	Peritonitis and intestinal abscess	148	Peritonitis and intestinal abscess
153	Gastrointestinal hemorrhage	153	Gastrointestinal hemorrhage
154	Noninfectious gastroenteritis	154	Noninfectious gastroenteritis

ICD-9	Description	ICD-10	Description
157	Acute and unspecified renal failure	157	Acute and unspecified renal failure
159	Urinary tract infections	159	Urinary tract infections
165	Inflammatory conditions of male genital organs	165	Inflammatory conditions of male genital organs
168	Inflammatory diseases of female pelvic organs	168	Inflammatory diseases of female pelvic organs
172	Ovarian cyst	172	Ovarian cyst
197	Skin and subcutaneous tissue infections	197	Skin and subcutaneous tissue infections
198	Other inflammatory condition of skin	198	Other inflammatory condition of skin
225	Joint disorders and dislocations; trauma-related	225	Joint disorders and dislocations; trauma-related
226	Fracture of neck of femur (hip)	226	Fracture of neck of femur (hip)
227	Spinal cord injury	227	Spinal cord injury
228	Skull and face fractures	228	Skull and face fractures
229	Fracture of upper limb	229	Fracture of upper limb
230	Fracture of lower limb	230	Fracture of lower limb
232	Sprains and strains	232	Sprains and strains
233	Intracranial injury	233	Intracranial injury
234	Crushing injury or internal injury	234	Crushing injury or internal injury
235	Open wounds of head; neck; and trunk	235	Open wounds of head; neck; and trunk
237	Complication of device; implant or graft	237	Complication of device; implant or graft
238	Complications of surgical procedures or medical care	238	Complications of surgical procedures or medical care
239	Superficial injury; contusion	239	Superficial injury; contusion
240	Burns	240	Burns
241	Poisoning by psychotropic agents	241	Poisoning by psychotropic agents
242	Poisoning by other medications and drugs	242	Poisoning by other medications and drugs
243	Poisoning by nonmedicinal substances	243	Poisoning by nonmedicinal substances
244	Other injuries and conditions due to external causes	244	Other injuries and conditions due to external causes
245	Syncope	245	Syncope
246	Fever of unknown origin	246	Fever of unknown origin
247	Lymphadenitis	247	Lymphadenitis
249	Shock	249	Shock
250	Nausea and vomiting	250	Nausea and vomiting
251	Abdominal pain	251	Abdominal pain
252	Malaise and fatigue	252	Malaise and fatigue
253	Allergic reactions	253	Allergic reactions
259	Residual codes; unclassified	259	Residual codes; unclassified
650	Adjustment disorders	650	Adjustment disorders
651	Anxiety disorders	651	Anxiety disorders
652	Attention-deficit, conduct, and disruptive behavior disorders	652	Attention-deficit
653	Delirium, dementia, and amnestic and other cognitive disorders	653	Delirium
656	Impulse control disorders, NEC	656	Impulse control disorders
658	Personality disorders	658	Personality disorders
660	Alcohol-related disorders	660	Alcohol-related disorders
661	Substance-related disorders	661	Substance-related disorders

ICD-9	Description	ICD-10	Description
662	Suicide and intentional self-inflicted injury	662	Suicide and intentional self-inflicted injury
663	Screening and history of mental health and substance abuse codes	663	Screening and history of mental health and substance abuse codes
670	Miscellaneous disorders	670	Miscellaneous disorders
ICD-9 codes	**--**	**ICD-10 codes**	**--**
Acute ICD-9 codes within Dx CCS 97	Peri-; endo-; and myocarditis; cardiomyopathy	Acute ICD-10 codes within Dx CCS 97	Peri-; endo-; and myocarditis; cardiomyopathy
3282	Diphtheritic myocarditis	A3681	Diphtheritic cardiomyopathy
3640	Meningococcal carditis nos	A3950	Meningococcal carditis, unspecified
3641	Meningococcal pericarditis	A3953	Meningococcal pericarditis
3642	Meningococcal endocarditis	A3951	Meningococcal endocarditis
3643	Meningococcal myocarditis	A3952	Meningococcal myocarditis
7420	Coxsackie carditis nos	B3320	Viral carditis, unspecified
7421	Coxsackie pericarditis	B3323	Viral pericarditis
7422	Coxsackie endocarditis	B3321	Viral endocarditis
7423	Coxsackie myocarditis	B3322	Viral myocarditis
11281	Candidal endocarditis	B376	Candidal endocarditis
11503	Histoplasma capsulatum pericarditis	B394	Histoplasmosis capsulati, unspecified*
11503	Histoplasma capsulatum pericarditis	I32	Pericarditis in diseases classified* elsewhere
11504	Histoplasma capsulatum endocarditis	B394	Histoplasmosis capsulati, unspecified*
11504	Histoplasma capsulatum endocarditis	I39	Endocarditis and heart valve disorders in* diseases classified elsewhere
11513	Histoplasma duboisii pericarditis	B395	Histoplasmosis duboisii*
11513	Histoplasma duboisii pericarditis	I32	Pericarditis in diseases classified elsewhere*
11514	Histoplasma duboisii endocarditis	B395	Histoplasmosis duboisii*
11514	Histoplasma duboisii endocarditis	I39	Endocarditis and heart valve disorders in diseases classified elsewhere*
11593	Histoplasmosis pericarditis	B399	Histoplasmosis, unspecified*
11593	Histoplasmosis pericarditis	I32	Pericarditis in diseases classified elsewhere*
11594	Histoplasmosis endocarditis	I39	Endocarditis and heart valve disorders in diseases classified elsewhere*
11594	Histoplasmosis endocarditis	B399	Histoplasmosis, unspecified*
1303	Toxoplasma myocarditis	B5881	Toxoplasma myocarditis
3910	Acute rheumatic pericarditis	I010	Acute rheumatic pericarditis
3911	Acute rheumatic endocarditis	I011	Acute rheumatic endocarditis
3912	Acute rheumatic myocarditis	I012	Acute rheumatic myocarditis
3918	Acute rheumatic heart disease nec	I018	Other acute rheumatic heart disease
3919	Acute rheumatic heart disease nos	I019	Acute rheumatic heart disease, unspecified
3920	Rheumatic chorea w heart involvement	I020	Rheumatic chorea with heart involvement
3980	Rheumatic myocarditis	I090	Rheumatic myocarditis
39890	Rheumatic heart disease nos	I099	Rheumatic heart disease, unspecified
39899	Rheumatic heart disease nec	I0989	Other specified rheumatic heart diseases
4200	Acute pericarditis in other disease	I32	Pericarditis in diseases classified elsewhere
4200	Acute pericarditis in other disease	M3212	Pericarditis in systemic lupus erythematosus

ICD-9	Description	ICD-10	Description
42090	Acute pericarditis nos	I309	Acute pericarditis, unspecified
42090	Acute pericarditis nos	I301	Infective pericarditis
42091	Acute idiopath pericarditis	I300	Acute nonspecific idiopathic pericarditis
42099	Acute pericarditis nec	I308	Other forms of acute pericarditis
42099	Acute pericarditis nec	I309	Acute pericarditis, unspecified
4210	Acute/subacute bacterial endocarditis	I330	Acute and subacute infective endocarditis
4211	Acute endocarditis in other diseases	I39	Endocarditis and heart valve disorders in diseases classified elsewhere
4219	Acute/subacute endocarditis nos	I339	Acute and subacute endocarditis, unspecified
4220	Acute myocarditis in other diseases	I41	Myocarditis in diseases classified elsewhere
42290	Acute myocarditis nos	I409	Acute myocarditis, unspecified
42291	Idiopathic myocarditis	I400	Infective myocarditis
		I401	Isolated myocarditis
42292	Septic myocarditis	I400	Infective myocarditis
42293	Toxic myocarditis	I408	Other acute myocarditis
42299	Acute myocarditis nec	I408	Other acute myocarditis
4230	Hemopericardium	I312	Hemopericardium, not elsewhere classified
4231	Adhesive pericarditis	I310	Chronic adhesive pericarditis
4232	Constrictive pericarditis	I311	Chronic constrictive pericarditis
4233	Cardiac tamponade	I314	Cardiac tamponade
4290	Myocarditis nos	I514	Myocarditis, unspecified
Acute ICD-9 codes within Dx CCS 105	**Conduction disorders**	**Acute ICD-10 codes within Dx CCS 105**	**Conduction disorders**
4260	Atrioventricular	I442	Atrioventricular block, complete
42610	Atrioventricular block nos	I4430	Unspecified atrioventricular block
42611	Atrioventricular block-1st degree	I440	Atrioventricular block, first degree
42612	Atrioventricular block-mobitz ii	I441	Atrioventricular block, second degree
42613	Atrioventricular block-2nd degree nec	I441	Atrioventricular block, second degree
4262	Left bundle branch hemiblock	I4469	Other fascicular block
4262	Left bundle branch hemiblock	I444	Left anterior fascicular block
4262	Left bundle branch hemiblock	I445	Left posterior fascicular block
4262	Left bundle branch hemiblock	I4460	Unspecified fascicular block
4263	Left bundle branch block nec	I447	Left bundle-branch block, unspecified
4264	Right bundle branch block	I4510	Unspecified right bundle-branch block
4264	Right bundle branch block	I450	Right fascicular block
4264	Right bundle branch block	I4519	Other right bundle-branch block
42650	Bundle branch block nos	I4430	Unspecified atrioventricular block
42650	Bundle branch block nos	I4439	Other atrioventricular block
42650	Bundle branch block nos	I454	Nonspecific intraventricular block
42651	Right bundle branch block/left posterior fascicular block	I452	Bifascicular block
42652	Right bundle branch block/left ant fascicular block	I452	Bifascicular block
42653	Bilateral bundle branch block nec	I452	Bifascicular block
42654	Trifascicular block	I453	Trifascicular block

ICD-9	Description	ICD-10	Description
4266	Other heart block	I455	Other specified heart block
4267	Anomalous atrioventricular excitation	I456	Pre-excitation syndrome
42681	Lown-ganong-levine syndrome	I456	Pre-excitation syndrome
42682	Long qt syndrome	I4581	Long QT syndrome
4269	Conduction disorder nos	I459	Conduction disorder, unspecified
Acute ICD-9 codes within Dx CCS 106	**Dysrhythmia**	**Acute ICD-10 codes within Dx CCS 106**	**Dysrhythmia**
4272	Paroxysmal tachycardia nos	I479	Paroxysmal tachycardia, unspecified
7850	Tachycardia nos	R000	Tachycardia, unspecified
42789	Cardiac dysrhythmias nec	I498	Other specified cardiac arrhythmias
42789	Cardiac dysrhythmias nec	R001	Bradycardia, unspecified
4279	Cardiac dysrhythmia nos	I499	Cardiac arrhythmia, unspecified
42769	Premature beats nec	I4949	Other premature depolarization
42769	Premature beats nec	I493	Ventricular premature depolarization
Acute ICD-9 codes within Dx CCS 108	**Congestive heart failure; nonhypertensive**	**Acute ICD-10 codes within Dx CCS 108**	**Congestive heart failure; nonhypertensive**
39891	Rheumatic heart failure	I0981	Rheumatic heart failure
4280	Congestive heart failure	I509	Heart failure, unspecified
4280	Congestive heart failure	I5020	Unspecified systolic (congestive) heart failure
4280	Congestive heart failure	I5021	Acute systolic (congestive) heart failure
4280	Congestive heart failure	I5022	Chronic systolic (congestive) heart failure
4280	Congestive heart failure	I5023	Acute on chronic systolic (congestive) heart failure
4280	Congestive heart failure	I5030	Unspecified diastolic (congestive) heart failure
4280	Congestive heart failure	I5031	Acute diastolic (congestive) heart failure
4280	Congestive heart failure	I5032	Chronic diastolic (congestive) heart failure
4280	Congestive heart failure	I5033	Acute on chronic diastolic (congestive) heart failure
4280	Congestive heart failure	I5040	Unsp combined systolic and diastolic (congestive) hrt fail
4280	Congestive heart failure	I5041	Acute combined systolic and diastolic (congestive) hrt fail
4280	Congestive heart failure	I5042	Chronic combined systolic and diastolic hrt fail
4280	Congestive heart failure	I5043	Acute on chronic combined systolic and diastolic hrt fail
4281	Left heart failure	I501	Left ventricular failure
42820	Unspecified systolic heart failure	I5020	Unspecified systolic (congestive) heart failure
42821	Acute systolic heart failure	I5021	Acute systolic (congestive) heart failure
42823	Acute on chronic systolic heart failure	I5023	Acute on chronic systolic (congestive) heart failure
42830	Unspecified diastolic heart failure	I5030	Unspecified diastolic (congestive) heart failure
42831	Acute diastolic heart failure	I5031	Acute diastolic (congestive) heart failure
42833	Acute on chronic diastolic heart failure	I5033	Acute on chronic diastolic (congestive) heart failure

ICD-9	Description	ICD-10	Description
42840	Unspec combined syst & dias heart failure	I5040	Unsp combined systolic and diastolic (congestive) hrt fail
42841	Acute combined systolic & diastolic heart failure	I5041	Acute combined systolic (congestive) and diastolic (congestive) heart failure
42843	Acute on chronic combined systolic & diastolic heart failure	I5043	Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure
4289	Heart failure nos	I509	Heart failure, unspecified
Acute ICD-9 codes within Dx CCS 149	**Biliary tract disease**	**Acute ICD-10 codes within Dx CCS 149**	**Biliary tract disease**
5740	Calculus of gallbladder with acute cholecystitis	--	--
57400	Calculus of gallbladder with acute cholecystitis without mention of obstruction	K8000	Calculus of gallbladder w acute cholecyst w/o obstruction
57400	Calculus of gallbladder with acute cholecystitis without mention of obstruction	K8012	Calculus of GB w acute and chronic cholecyst w/o obstruction
57401	Calculus of gallbladder with acute cholecystitis with obstruction	K8001	Calculus of gallbladder w acute cholecystitis w obstruction
57401	Calculus of gallbladder with acute cholecystitis with obstruction	K8013	Calculus of GB w acute and chronic cholecyst w obstruction
5743	Calculus of bile duct with acute cholecystitis	--	--
57430	Calculus of bile duct with acute cholecystitis without mention of obstruction	K8042	Calculus of bile duct w acute cholecystitis w/o obstruction
57430	Calculus of bile duct with acute cholecystitis without mention of obstruction	K8046	Calculus of bile duct w acute and chronic cholecyst w/o obst
57431	Calculus of bile duct with acute cholecystitis with obstruction	K8043	Calculus of bile duct w acute cholecystitis with obstruction
57431	Calculus of bile duct with acute cholecystitis with obstruction	K8047	Calculus of bile duct w acute and chronic cholecyst w obst
5746	Calculus of gallbladder and bile duct with acute cholecystitis	--	--
57460	Calculus of gallbladder and bile duct with acute cholecystitis without mention of obstruction	K8062	Calculus of GB and bile duct w acute cholecyst w/o obst
57461	Calculus of gallbladder and bile duct with acute cholecystitis with obstruction	K8063	Calculus of GB and bile duct w acute cholecyst w obstruction
5748	Calculus of gallbladder and bile duct with acute and chronic cholecystitis	--	--
57480	Calculus of gallbladder and bile duct with acute and chronic cholecystitis without mention of obstruction	K8066	Calculus of GB and bile duct w ac and chr cholecyst w/o obst
57481	Calculus of gallbladder and bile duct with acute and chronic cholecystitis with obstruction	K8067	Calculus of GB and bile duct w ac and chr cholecyst w obst
5750	Acute cholecystitis	K810	Acute cholecystitis
57512	Acute and chronic cholecystitis	K812	Acute cholecystitis with chronic cholecystitis
5761	Cholangitis	K830	Cholangitis
5761	Cholangitis	K8030	Calculus of bile duct w cholangitis, unsp, w/o obstruction

ICD-9	Description	ICD-10	Description
5761	Cholangitis	K8031	Calculus of bile duct w cholangitis, unsp, with obstruction
5761	Cholangitis	K8032	Calculus of bile duct with acute cholangitis w/o obstruction
5761	Cholangitis	K8033	Calculus of bile duct w acute cholangitis with obstruction
5761	Cholangitis	K8034	Calculus of bile duct w chronic cholangitis w/o obstruction
5761	Cholangitis	K8035	Calculus of bile duct w chronic cholangitis with obstruction
5761	Cholangitis	K8036	Calculus of bile duct w acute and chr cholangitis w/o obst
5761	Cholangitis	K8037	Calculus of bile duct w acute and chronic cholangitis w obst
Acute ICD-9 codes within Dx CCS 152	**Pancreatic disorders**	**Acute ICD-10 codes within Dx CCS 152:**	**Pancreatic disorders**
5770	Acute Pancreatitis	K859	Acute pancreatitis, unspecified
5770	Acute Pancreatitis	B252	Cytomegaloviral pancreatitis
5770	Acute Pancreatitis	K850	Idiopathic acute pancreatitis
5770	Acute Pancreatitis	K851	Biliary acute pancreatitis
5770	Acute Pancreatitis	K852	Alcohol induced acute pancreatitis
5770	Acute Pancreatitis	K853	Drug induced acute pancreatitis
5770	Acute Pancreatitis	K858	Other acute pancreatitis

* The multiple ICD-10 codes mapped from the same ICD-9 code must occur together to reflect the original ICD-9 condition.

Note: The ICD-10 codes in this table are preliminary mappings from version 3.0 of the planned readmission algorithm. They apply only to the Annual QRURs.

Table 8. Comorbid risk variables common to all specialty cohorts

Variable Name	Description	CMS CCs v12	CMS CCs v22*
Age_65	Age (-65)	n/a	n/a
HxInfection	Severe infection	1, 3-5	1, 3-6
OtherInfectious	Other infectious disease & pneumonias	6, 111-113	7, 114-116
MetaCancer	Metastatic cancer/acute leukemia	7	8
SevereCancer	Severe cancer	8, 9	9, 10
OtherCancer	Other cancers	10, 11, 12	11-14
Diabetes	Diabetes mellitus	15-20, 119, 120	17-19, 122, 133
Malnutrition	Protein-calorie malnutrition	21	21
LiverDisease	End-Stage liver disease	25, 26	27, 28
Hematological	Severe hematological disorders	44	46
Alcohol	Drug and Alcohol disorders	51-52	54, 55
Psychological	Psychiatric comorbidity	54-56, 58, 60	57-59, 61, 63
MotorDisfunction	Hemiplegia, paraplegia, paralysis, functional disability	67-69, 100-102, 177, 178	70, 71, 73, 74, 103, 104, 189, 190
Seizure	Seizure disorders and convulsions	74	79
CHF	CHF	80	85
CADCVD	Coronary atherosclerosis or angina, cerebrovascular disease	81-84, 89, 98, 99, 103-106	86-89, 102, 105-109
Arryhthmias	Specified arrhythmias	92, 93	96, 97
COPD	Chronic obstructive pulmonary disease	108	111
LungDisorder	Fibrosis of lung or other chronic lung disorders	109	112
OnDialysis	Dialysis Status	130	134
Ulcers	Decubitus ulcer or chronic skin ulcer	148-149	157-161
Septicemia	Septicemia/shock	2	2
MetabolicDisorder	Disorders of fluid, electrolyte, acid-base	22, 23	23, 24
IronDeficiency	Iron deficiency or other unspecified anemias and blood disease	47	49
CardioRespiratory	Cardio-respiratory failure or cardio-respiratory shock	79	84
RenalFailure	Acute Renal failure	131	135-140
PancreaticDisease	Pancreatic disease	32	34, 36
Arthritis	Rheumatoid arthritis and inflammatory connective tissue disease	38	40
RespiratorDependence	Respirator dependence/tracheostomy status	77	82
Transplants	Transplants	128, 174	132, 186
Coagulopathy	Coagulation defects and other specified hematological disorders	46	48
HipFracture	Hip fracture/dislocation	158	170

* Note: The CC mappings in this table are preliminary mappings to V22 HCCs based on the 2015 Yale measure. They apply only to the Annual QRURs.

Table 9. Complication of Care

CMS CCs v12	Description	CMS CCs v22*	Description
2	Septicemia/Shock	2	Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/Shock
6	Other Infectious Diseases	7	Other Infectious Diseases
17	Diabetes with Acute Complications	17	Diabetes with Acute Complications
23	Disorders of Fluid/Electrolyte/Acid-Base Balance	24	Disorders of Fluid/Electrolyte/Acid-Base Balance
23	Disorders of Fluid/Electrolyte/Acid-Base Balance	177	Other Complications of Medical Care
28	Acute Liver Failure/Disease	30	Acute Liver Failure/Disease
31	Intestinal Obstruction/Perforation	33	Intestinal Obstruction/Perforation
34	Peptic Ulcer, Hemorrhage, Other Specified Gastrointestinal Disorders	36	Peptic Ulcer, Hemorrhage, Other Specified Gastrointestinal Disorders
46	Coagulation Defects and Other Specified Hematological Disorders	48	Severe Hematological Disorders
48	Delerium and Encephalopathy	50	Delirium and Encephalopathy
75	Coma, Brain Compression/Anoxic Damage	80	Coma, Brain Compression/Anoxic Damage
77	Respirator Dependence/Tracheostomy Status	82	Respirator Dependence/Tracheostomy Status
78	Respiratory Arrest	83	Respiratory Arrest
79	Cardio-Respiratory Failure and Shock	84	Cardio-Respiratory Failure and Shock
80	Congestive Heart Failure	85	Congestive Heart Failure
81	Acute Myocardial Infarction	86	Acute Myocardial Infarction
82	Unstable Angina and Other Acute Ischemic Heart Disease	87	Unstable Angina and Other Acute Ischemic Heart Disease
92	Specified Heart Arrhythmias	96	Specified Heart Arrhythmias
93	Other Heart Rhythm and Conduction Disorders	97	Other Heart Rhythm and Conduction Disorders
94	Other and Unspecified Heart Disease	98	Other and Unspecified Heart Disease
95	Cerebral Hemorrhage	99	Cerebral Hemorrhage
96	Ischemic or Unspecified Stroke	100	Ischemic or Unspecified Stroke
97	Precerebral Arterial Occlusion and Transient Cerebral Ischemia	101	Precerebral Arterial Occlusion and Transient Cerebral Ischemia
100	Hemiplegia/Hemiparesis	103	Hemiplegia/Hemiparesis
101	Cerebral Palsy and Other Paralytic Syndromes	104	Monoplegia, Other Paralytic Syndromes
102	Speech, Language, Cognitive, Perceptual Deficits	--	--
104	Vascular Disease with Complications	106	Atherosclerosis of the Extremities with Ulceration or Gangrene
104	Vascular Disease with Complications	107	Vascular Disease with Complications
105	Vascular Disease	108	Vascular Disease
106	Other Circulatory Disease	109	Other Circulatory Disease
111	Aspiration and Specified Bacterial Pneumonias	114	Aspiration and Specified Bacterial Pneumonias
112	Pneumococcal Pneumonia, Empyema, Lung Abscess	115	Pneumococcal Pneumonia, Empyema, Lung Abscess
114	Pleural Effusion/Pneumothorax	117	Pleural Effusion/Pneumothorax
129	End Stage Renal Disease (Medicare eligible)	133	End Stage Renal Disease (Medicare eligible)
130	Dialysis Status	134	Dialysis Status

CMS CCs v12	Description	CMS CCs v22*	Description
131	Dialysis Status	135	Acute Renal Failure
131	Dialysis Status	140	Unspecified Renal Failure
132	Nephritis	141	Nephritis
133	Urinary Obstruction and Retention	142	Urinary Obstruction and Retention
135	Urinary Tract Infection	144	Urinary Tract Infection
148	Decubitus Ulcer of Skin	157	Pressure Ulcer of Skin with Necrosis Through to Muscle, Tendon, or Bone
148	Decubitus Ulcer of Skin	158	Pressure Ulcer of Skin with Full Thickness Skin Loss
148	Decubitus Ulcer of Skin	159	Pressure Ulcer of Skin with Partial Thickness Skin Loss
148	Decubitus Ulcer of Skin	160	Pressure Pre-Ulcer Skin Changes or Unspecified Stage
152	Cellulitis, Local Skin Infection	164	Cellulitis, Local Skin Infection
154	Severe Head Injury	166	Severe Head Injury
155	Major Head Injury	167	Major Head Injury
156	Concussion or Unspecified Head Injury	168	Concussion or Unspecified Head Injury
158	Hip Fracture/Dislocation	170	Hip Fracture/Dislocation
159	Major Fracture, Except of Skull, Vertebrae, or Hip	171	Major Fracture, Except of Skull, Vertebrae, or Hip
163	Poisonings and Allergic Reactions	175	Poisonings and Allergic and Inflammatory Reactions
164	Major Complications of Medical Care and Trauma	173	Traumatic Amputations and Complications
164	Major Complications of Medical Care and Trauma	176	Complications of Specified Implanted Device or Graft
165	Other Complications of Medical Care	177	Other Complications of Medical Care
174	Major Organ Transplant Status	186	Major Organ Transplant or Replacement Status
175	Other Organ Transplant Status/Replacement	187	Other Organ Transplant Status/Replacement
176	Artificial Openings for Feeding or Elimination	188	Artificial Openings for Feeding or Elimination
177	Amputation Status, Lower Limb/Amputation Complications	189	Amputation Status, Lower Limb/Amputation Complications
178	Amputation Status, Upper Limb	190	Amputation Status, Upper Limb
179	Post-Surgical States/Aftercare/Elective	191	Post-Surgical States/Aftercare/Elective

* Note: The CC mappings in this table are preliminary mappings to V22 HCCs based on the 2015 Yale measure. They apply only to the Annual QRURs.