CMS
CENTERS for MEDICARE & MEDICAID SERVICES

ACO #38 Risk-Standardized Acute Admission Rates for Patients With Multiple Chronic Conditions

Measure Information Form (MIF)

Data Source

- Medicare inpatient claims
- Medicare outpatient claims
- Medicare beneficiary enrollment data
- Accountable Care Organization (ACO) assignment file

Measure Set ID

- ACO #38

Version Number and Effective Date

- Version 2.0, effective 12/31/2015

CMS Approval Date

- 12/31/2015

NQF ID

- N/A; measure is under review at the National Quality Forum (NQF) for endorsement.

Date Endorsed

- N/A

Care Setting

- Hospital

Unit of Measurement

- ACO

Measurement Duration

- Calendar Year

Measurement Period

- Calendar Year

Measure Type

- Outcome

Measure Scoring

- Risk-standardized acute admission rate (RSAAR)

Payer Source

- Medicare fee-for-service (FFS)

Improvement Notation

- Lower RSAAR scores indicate better quality.

Measure Steward

- Centers for Medicare & Medicaid Services (CMS)

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- This quality measure was developed for CMS by Yale New Haven Hospital Health Services Corporation Center for Outcomes Research and Evaluation (CORE) in 2014.

Measure Description

- Rate of risk-standardized acute, unplanned hospital admissions among Medicare fee-for-service (FFS) beneficiaries 65 years and older with multiple chronic conditions (MCCs) who are assigned to the Accountable Care Organization (ACO)

Rationale

As of 2010, more than two-thirds of Medicare beneficiaries had been diagnosed with or treated for two or more chronic conditions [1]. People with MCCs are more likely to be admitted to the hospital than those without chronic conditions or with a single chronic condition. Additionally, they are more likely to visit the emergency department, use post-acute care (such as skilled nursing facilities), and require home health assistance [1]. No quality measures specifically designed for this population exist to assess quality of care or to enable the evaluation of whether current efforts to improve care are successful; this measure is designed to help fill that gap as called for in NQF's "Multiple Chronic Conditions Measurement Framework" [2].

The measure is focused on ACOs because providers in ACOs share responsibility for patients' ambulatory care, and better coordinated care should lower the risk of hospitalization for this vulnerable population. The measure is designed to illuminate variation in hospital admission rates and incentivize ACOs to develop efficient and coordinated chronic disease management strategies that anticipate and respond to patients' needs and preferences. The measure is also consistent with ACOs' commitment to deliver patient-centered care that fulfills the goals of the Department of Health and Human Services' National Quality Strategy – improving population health, providing better care, and lowering healthcare costs [3].

The rationale for measuring all-cause acute admissions is to assess the quality of care as experienced by the patient and to drive overall improvements in care quality, coordination, and efficiency that are not specific to certain diseases. Ambulatory care providers can act together to lower patients' risk for a wide range of acute illness requiring admission in several ways:

1. Provide optimal and accessible chronic disease management to reduce catastrophic sequelae of chronic disease. For example:
    a. Support healthy lifestyle behaviors and optimize medical management to minimize the risk for cardiovascular events such as stroke and heart attacks.
    b. Carefully monitor and act early to address chronic problems that require major interventions if allowed to progress (for example, assessment and treatment of peripheral artery disease in persistent infections in order to prevent amputation).
2. Anticipate and manage the interactions between chronic conditions. For example:
    a. Closely monitor renal function in patients on diuretic therapy for heart failure and chronic kidney disease.

   b. Minimize polypharmacy to reduce drug-drug and drug-disease interactions.
   c. Assess and treat depression to improve self-efficacy and self-management of chronic disease.

3. Provide optimal primary prevention of acute illnesses, such as recommended immunizations and screening.
4. Facilitate rapid, effective ambulatory intervention when acute illness does occur, whether related or unrelated to the chronic conditions. For example:

   a. Promptly prescribe antibiotics for presumed bacterial pneumonia and diuretic treatment for fluid overload in heart failure.
   b. Empower patients to recognize symptoms and to seek timely care.
   c. Create accessible care options for patients (for example, weekend or evening hours; capacity to deliver intravenous medications).

5. Partner with the government, local businesses, and community organizations to improve support for patients with chronic illness. For example:

   a. Collaborate with home nursing programs.
   b. Partner with local businesses to increase opportunities to engage in healthy lifestyle behaviors.
   c. Provide outreach and services at senior centers.

Finally, a number of studies have shown that improvements in the delivery of healthcare services for ambulatory patients with MCCs can lower the risk of admission [4-10]. Demonstrated strategies include improving access to care; supporting self-care in the home; better coordinating care across providers; and integrating social work, nursing, and medical services.

Citations

1. Centers for Medicare and Medicaid Services. Chronic Conditions among Medicare Beneficiaries, Chartbook: 2012 Edition. 2012; http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/Downloads/2012Chartbook.pdf. Accessed March 18, 2014.
2. National Quality Forum (NQF). Multiple Chronic Conditions Measurement Framework. 2012; http://www.qualityforum.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=71227
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Clinical Recommendation Statement

The rationale for measuring acute unplanned admissions for ACO assigned beneficiaries with chronic disease is that ACOs are established precisely to improve patient-centered care and outcomes for these patients. Providers within an ACO share responsibility for delivering primary preventive services, chronic disease management, and acute care to patients with MCCs. Further, ACOs accept accountability for patient outcomes; providers form ACOs voluntarily and commit to the goals of the ACO program, which include providing better coordinated care and chronic disease management while lowering costs [1]. These program goals are fully aligned with the objective of lowering patients' risk of admission incentivized by the measure [1]. ACOs should be able to lower the risk of acute, unplanned admissions more feasibly than less integrated Medicare fee-for-service providers through strengthening preventive care, delivering better coordinated and more effective chronic disease management, and providing timely ambulatory care for acute exacerbations of chronic disease. ACOs may also need to engage with community organizations and health-related community services to facilitate effective chronic disease management.

Finally, a number of studies have shown that improvements in the delivery of healthcare services for ambulatory patients with MCCs can lower the risk of admission [2-7]. Demonstrated strategies include improving access to care; supporting self-care in the home; better coordinating care across providers; and integrating social work, nursing, and medical services. It is our vision that this measure will illuminate variation among ACOs in hospital admission rates for people with MCCs and incentivize ACOs to expand efforts to develop and implement efficient and coordinated chronic disease management strategies that anticipate and respond to patients' needs and preferences.

References

1. Centers for Medicare & Medicaid Services (CMS). Accountable Care Organizations (ACOs): General Information. http://innovation.cms.gov/initiatives/aco/. Accessed September 25, 2014.
2. Dorr DA, Wilcox AB, Brunker CP, Burdon RE, Donnelly SM. The effect of technology-supported, multidisease care management on the mortality and hospitalization of seniors. Journal of the American Geriatrics Society. Dec 2008; 56(12):2195-2202.
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Release Notes / Summary of Changes

- This MIF includes only ICD-10 and version 22 HCC codes.

Technical Specifications

- Target Population

  ACO-assigned or aligned Medicare beneficiaries with MCCs

Denominator

- Denominator Statement

  Our target population is Medicare FFS beneficiaries aged 65 years and older assigned to the ACO whose combinations of chronic conditions put them at high risk of admission and whose admission rates could be

lowered through better care. NQF's "Multiple Chronic Conditions Measurement Framework," which defines patients with MCCs as people "having two or more concurrent chronic conditions that.... act together to significantly increase the complexity of management, and affect functional roles and health outcomes, compromise life expectancy, or hinder self-management" [1].

Citations

1. National Quality Forum (NQF). Multiple Chronic Conditions Measurement Framework. 2012; http://www.qualityforum.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=71227

- Denominator Details

  The cohort is Medicare FFS beneficiaries aged 65 years and older assigned to the ACO during the measurement period with diagnoses that fall into two or more of eight chronic disease groups:

  1. Acute myocardial infarction (AMI)
  2. Alzheimer's disease and related disorders or senile dementia
  3. Atrial fibrillation
  4. Chronic kidney disease (CKD)
  5. Chronic obstructive pulmonary disease (COPD) and asthma
  6. Depression
  7. Heart failure
  8. Stroke and transient ischemic attack (TIA)

  This approach captures approximately 25% of Medicare FFS beneficiaries aged 65 years and older with at least one chronic condition (about five million patients in 2012).

  The eight disease groups are defined using data from the Integrated Data Repository (IDR) in combination with algorithms for nine chronic condition categories. The nine categories are based on those used in CMS's Chronic Condition Data Warehouse (CCW) [1]. We combined two CCW categories into a single chronic disease group – COPD and asthma. Table 1 identifies the claim algorithms and the specific International Classification of Diseases, Tenth Revision (ICD-10) codes for each of the eight chronic disease groups.

  To be included in the cohort, beneficiaries must also be enrolled full-time in both Medicare Part A and B during the year prior to the measurement period. This requirement for full enrollment in Medicare Part A & B one year prior to measurement is to ensure adequate claims data to identify beneficiaries with these chronic conditions.

Table 1. Denominator Details: Diagnostic Codes Used to Define Eight Chronic Disease Groups That Qualify Patients for the MCC Cohort

ICD-10	Description
Acute myocardial infarction (AMI) Years prior to measurement year from which codes are used: 1 year Number/types of claims to qualify: At least 1 inpatient claim with diagnosis (DX) codes during the 1-year period	
I21.01	ST elevation (STEMI) myocardial infarction involving left main coronary artery
I21.02	ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery
I21.09	ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall
I21.11	ST elevation (STEMI) myocardial infarction involving right coronary artery
I21.19	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall
I21.21	ST elevation (STEMI) myocardial infarction involving left circumflex coronary artery
I21.29	ST elevation (STEMI) myocardial infarction involving other sites
I21.3	ST elevation (STEMI) myocardial infarction involving other sites
I21.4	Non-ST elevation (NSTEMI) myocardial infarction
I22.0	Subsequent ST elevation (STEMI) myocardial infarction of anterior wall

(continued)

Table 1. Denominator Details: Diagnostic Codes Used to Define Eight Chronic Disease Groups That Qualify Patients for the MCC Cohort (continued)

ICD-10	Description
Acute myocardial infarction (AMI) Years prior to measurement year from which codes are used: 1 year Number/types of claims to qualify: At least 1 inpatient claim with diagnosis (DX) codes during the 1-year period	
I22.1	Subsequent ST elevation (STEMI) myocardial infarction of inferior wall
I22.2	Subsequent non-ST elevation (NSTEMI) myocardial infarction
I22.8	Subsequent ST elevation (STEMI) myocardial infarction of other sites
I22.9	Subsequent ST elevation (STEMI) myocardial infarction of unspecified site
Alzheimer's disease and related disorders or senile dementia Years prior to measurement year from which codes are used: 3 years Number/types of claims to qualify: At least 1 inpatient, Skilled Nursing Facility (SNF), Home Health Agency (HHA), Hospital Outpatient (HOP) or Carrier claim with DX codes during the 1-year period	
F01.50	Vascular dementia without behavioral disturbance
F01.51	Vascular dementia with behavioral disturbance
F02.80	Dementia in other diseases classified elsewhere without behavioral disturbance
F02.81	Dementia in other diseases classified elsewhere with behavioral disturbance
F03.90	Unspecified dementia without behavioral disturbance
F03.91	Unspecified dementia with behavioral disturbance
F04	Amnestic disorder due to known physiological condition
G13.2	Systemic atrophy primarily affecting the central nervous system in myxedema
G13.8	Systemic atrophy primarily affecting central nervous system in other diseases classified elsewhere
F05	Delirium due to known physiological condition
F06.1	Catatonic disorder due to known physiological condition
F06.8	Other specified mental disorders due to known physiological condition
G30.0	Alzheimer's disease with early onset
G30.1	Alzheimer's disease with late onset
G30.8	Other Alzheimer's disease
G30.9	Alzheimer's disease, unspecified
G31.1	Senile degeneration of brain, not elsewhere classified
G31.2	Degeneration of nervous system due to alcohol
G31.01	Pick's disease
G31.09	Other frontotemporal dementia
G91.4	Hydrocephalus in diseases classified elsewhere
G94	Other disorders of brain in diseases classified elsewhere
R41.81	Age-related cognitive decline
R54	Age-related physical debility
Atrial fibrillation Years prior to measurement year from which codes are used: 1 year Number/types of claims to qualify: At least 1 inpatient claim or 2 HOP or Carrier claims with DX code during the 1-year period	
I48.0	Paroxysmal atrial fibrillation
I48.2	Chronic atrial fibrillation
I48.91	Unspecified atrial fibrillation

(continued)

Table 1. Denominator Details: Diagnostic Codes Used to Define Eight Chronic Disease Groups That Qualify Patients for the MCC Cohort (continued)

ICD-10	Description
Chronic kidney disease (CKD) Years prior to measurement year from which codes are used: 2 years Number/types of claims to qualify: At least 1 inpatient, SNF or HHA claim or 2 HOP or Carrier claims with DX codes during the 1-year period	
A18.11	Tuberculosis of kidney and ureter
A52.75	Syphilis of kidney and ureter
B52.0	Plasmodium malariae malaria with nephropathy
C64.1	Malignant neoplasm of right kidney, except renal pelvis
C64.2	Malignant neoplasm of left kidney, except renal pelvis
C64.9	Malignant neoplasm of unspecified kidney, except renal pelvis
C68.9	Malignant neoplasm of urinary organ, unspecified
D30.00	Benign neoplasm of unspecified kidney
D30.01	Benign neoplasm of right kidney
D30.02	Benign neoplasm of left kidney
D41.00	Neoplasm of uncertain behavior of unspecified kidney
D41.01	Neoplasm of uncertain behavior of right kidney
D41.02	Neoplasm of uncertain behavior of left kidney
D41.10	Neoplasm of uncertain behavior of unspecified renal pelvis
D41.11	Neoplasm of uncertain behavior of right renal pelvis
D41.12	Neoplasm of uncertain behavior of left renal pelvis
D41.20	Neoplasm of uncertain behavior of unspecified ureter
D41.21	Neoplasm of uncertain behavior of right ureter
D41.22	Neoplasm of uncertain behavior of left ureter
D59.3	Hemolytic-uremic syndrome
E08.21	Diabetes mellitus due to underlying condition with diabetic nephropathy
E08.22	Diabetes mellitus due to underlying condition with diabetic chronic kidney disease
E08.29	Diabetes mellitus due to underlying condition with other diabetic kidney complication
E08.65	Diabetes mellitus due to underlying condition with hyperglycemia
E09.21	Drug or chemical induced diabetes mellitus with diabetic nephropathy
E09.22	Drug or chemical induced diabetes mellitus with diabetic chronic kidney disease
E09.29	Drug or chemical induced diabetes mellitus with other diabetic kidney complication
E10.21	Type 1 diabetes mellitus with diabetic nephropathy
E10.22	Type 1 diabetes mellitus with diabetic chronic kidney disease
E10.29	Type 1 diabetes mellitus with other diabetic kidney complication
E10.65	Type 1 diabetes mellitus with hyperglycemia
E11.21	Type 2 diabetes mellitus with diabetic nephropathy
E11.22	Type 2 diabetes mellitus with diabetic chronic kidney disease
E11.29	Type 2 diabetes mellitus with other diabetic kidney complication
E11.65	Type 2 diabetes mellitus with hyperglycemia
E13.21	Other specified diabetes mellitus with diabetic nephropathy
E13.22	Other specified diabetes mellitus with diabetic chronic kidney disease
E13.29	Other specified diabetes mellitus with other diabetic kidney complication
E74.8	Other specified disorders of carbohydrate metabolism

(continued)

Table 1. Denominator Details: Diagnostic Codes Used to Define Eight Chronic Disease Groups That Qualify Patients for the MCC Cohort (continued)

ICD-10	Description
I12.0	Hypertensive chronic kidney disease with stage 5 chronic kidney disease or end stage renal disease
I13.11	Hypertensive heart and chronic kidney disease without heart failure, with stage 5 chronic kidney disease, or end stage renal disease
I13.2	Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease
I70.1	Atherosclerosis of renal artery
I72.2	Aneurysm of renal artery
K76.7	Hepatorenal syndrome
M10.30	Gout due to renal impairment, unspecified site
M10.311	Gout due to renal impairment, right shoulder
M10.312	Gout due to renal impairment, left shoulder
M10.319	Gout due to renal impairment, unspecified shoulder
M10.321	Gout due to renal impairment, right elbow
M10.322	Gout due to renal impairment, left elbow
M10.329	Gout due to renal impairment, unspecified elbow
M10.331	Gout due to renal impairment, right wrist
M10.332	Gout due to renal impairment, left wrist
M10.339	Gout due to renal impairment, unspecified wrist
M10.341	Gout due to renal impairment, right hand
M10.342	Gout due to renal impairment, left hand
M10.349	Gout due to renal impairment, unspecified hand
M10.351	Gout due to renal impairment, right hip
M10.352	Gout due to renal impairment, left hip
M10.359	Gout due to renal impairment, unspecified hip
M10.361	Gout due to renal impairment, right knee
M10.362	Gout due to renal impairment, left knee
M10.369	Gout due to renal impairment, unspecified knee
M10.371	Gout due to renal impairment, right ankle and foot
M10.372	Gout due to renal impairment, left ankle and foot
M10.379	Gout due to renal impairment, unspecified ankle and foot
M10.38	Gout due to renal impairment, vertebrae
M10.39	Gout due to renal impairment, multiple sites
M32.14	Glomerular disease in systemic lupus erythematosus
M32.15	Tubulo-interstitial nephropathy in systemic lupus erythematosus
M35.04	Sicca syndrome with tubulo-interstitial nephropathy
N00.0	Acute nephritic syndrome with minor glomerular abnormality
N00.1	Acute nephritic syndrome with focal and segmental glomerular lesions
N00.2	Acute nephritic syndrome with diffuse membranous glomerulonephritis
N00.3	Acute nephritic syndrome with diffuse mesangial proliferative glomerulonephritis
N00.4	Acute nephritic syndrome with diffuse endocapillary proliferative glomerulonephritis
N00.5	Acute nephritic syndrome with diffuse mesangiocapillary glomerulonephritis
N00.6	Acute nephritic syndrome with dense deposit disease
N00.7	Acute nephritic syndrome with diffuse crescentic glomerulonephritis
N00.8	Acute nephritic syndrome with other morphologic changes

(continued)

Table 1. Denominator Details: Diagnostic Codes Used to Define Eight Chronic Disease Groups That Qualify Patients for the MCC Cohort (continued)

ICD-10	Description
N00.9	Acute nephritic syndrome with unspecified morphologic changes
N01.0	Rapidly progressive nephritic syndrome with minor glomerular abnormality
N01.1	Rapidly progressive nephritic syndrome with focal and segmental glomerular lesions
N01.2	Rapidly progressive nephritic syndrome with diffuse membranous glomerulonephritis
N01.3	Rapidly progressive nephritic syndrome with diffuse mesangial proliferative glomerulonephritisc
N01.4	Rapidly progressive nephritic syndrome with diffuse endocapillary proliferative glomerulonephritis
N01.5	Rapidly progressive nephritic syndrome with diffuse mesangiocapillary glomerulonephritis
N01.6	Rapidly progressive nephritic syndrome with dense deposit disease
N01.7	Rapidly progressive nephritic syndrome with diffuse crescentic glomerulonephritis
N01.8	Rapidly progressive nephritic syndrome with other morphologic changes
N01.9	Rapidly progressive nephritic syndrome with unspecified morphologic changes
N02.0	Recurrent and persistent hematuria with minor glomerular abnormality
N02.1	Recurrent and persistent hematuria with focal and segmental glomerular lesions
N02.2	Recurrent and persistent hematuria with diffuse membranous glomerulonephritis
N02.3	Recurrent and persistent hematuria with diffuse mesangial proliferative glomerulonephritis
N02.4	Recurrent and persistent hematuria with diffuse endocapillary proliferative glomerulonephritis
N02.5	Recurrent and persistent hematuria with diffuse mesangiocapillary glomerulonephritis
N02.6	Recurrent and persistent hematuria with dense deposit disease
N02.7	Recurrent and persistent hematuria with diffuse crescentic glomerulonephritis
N02.8	Recurrent and persistent hematuria with other morphologic changes
N02.9	Recurrent and persistent hematuria with unspecified morphologic changes
N03.0	Chronic nephritic syndrome with minor glomerular abnormality
N03.1	Chronic nephritic syndrome with focal and segmental glomerular lesions
N03.2	Chronic nephritic syndrome with diffuse membranous glomerulonephritis
N03.3	Chronic nephritic syndrome with diffuse mesangial proliferative glomerulonephritis
N03.4	Chronic nephritic syndrome with diffuse endocapillary proliferative glomerulonephritis
N03.5	Chronic nephritic syndrome with diffuse mesangiocapillary glomerulonephritis
N03.6	Chronic nephritic syndrome with dense deposit disease
N03.7	Chronic nephritic syndrome with diffuse crescentic glomerulonephritis
N03.8	Chronic nephritic syndrome with other morphologic changes
N03.9	Chronic nephritic syndrome with unspecified morphologic changes
N04.0	Nephrotic syndrome with minor glomerular abnormality
N04.1	Nephrotic syndrome with focal and segmental glomerular lesions
N04.2	Nephrotic syndrome with diffuse membranous glomerulonephritis
N04.3	Nephrotic syndrome with diffuse mesangial proliferative glomerulonephritis
N04.4	Nephrotic syndrome with diffuse endocapillary proliferative glomerulonephritis
N04.5	Nephrotic syndrome with diffuse mesangiocapillary glomerulonephritis
N04.6	Nephrotic syndrome with dense deposit disease
N04.7	Nephrotic syndrome with diffuse crescentic glomerulonephritis
N04.8	Nephrotic syndrome with other morphologic changes
N04.9	Nephrotic syndrome with unspecified morphologic changes
N05.0	Unspecified nephritic syndrome with minor glomerular abnormality
N05.1	Unspecified nephritic syndrome with focal and segmental glomerular lesions
N05.2	Unspecified nephritic syndrome with diffuse membranous glomerulonephritis

(continued)

Table 1. Denominator Details: Diagnostic Codes Used to Define Eight Chronic Disease Groups That Qualify Patients for the MCC Cohort (continued)

ICD-10	Description
N05.3	Unspecified nephritic syndrome with diffuse mesangial proliferative glomerulonephritis
N05.4	Unspecified nephritic syndrome with diffuse endocapillary proliferative glomerulonephritis
N05.5	Unspecified nephritic syndrome with diffuse mesangiocapillary glomerulonephritis
N05.6	Unspecified nephritic syndrome with dense deposit disease
N05.7	Unspecified nephritic syndrome with diffuse crescentic glomerulonephritis
N05.8	Unspecified nephritic syndrome with other morphologic changes
N05.9	Unspecified nephritic syndrome with unspecified morphologic changes
N06.0	Isolated proteinuria with minor glomerular abnormality
N06.1	Isolated proteinuria with focal and segmental glomerular lesions
N06.2	Isolated proteinuria with diffuse membranous glomerulonephritis
N06.3	Isolated proteinuria with diffuse mesangial proliferative glomerulonephritis
N06.4	Isolated proteinuria with diffuse endocapillary proliferative glomerulonephritis
N06.5	Isolated proteinuria with diffuse mesangiocapillary glomerulonephritis
N06.6	Isolated proteinuria with dense deposit disease
N06.7	Isolated proteinuria with diffuse crescentic glomerulonephritis
N06.8	Isolated proteinuria with other morphologic lesion
N06.9	Isolated proteinuria with unspecified morphologic lesion
N07.0	Hereditary nephropathy, not elsewhere classified with minor glomerular abnormality
N07.1	Hereditary nephropathy, not elsewhere classified with focal and segmental glomerular lesions
N07.2	Hereditary nephropathy, not elsewhere classified with diffuse membranous glomerulonephritis
N07.3	Hereditary nephropathy, not elsewhere classified with diffuse mesangial proliferative glomerulonephritis
N07.4	Hereditary nephropathy, not elsewhere classified with diffuse endocapillary proliferative glomerulonephritis
N07.5	Hereditary nephropathy, not elsewhere classified with diffuse mesangiocapillary glomerulonephritis
N07.6	Hereditary nephropathy, not elsewhere classified with dense deposit disease
N07.7	Hereditary nephropathy, not elsewhere classified with diffuse crescentic glomerulonephritis
N07.8	Hereditary nephropathy, not elsewhere classified with other morphologic lesions
N07.9	Hereditary nephropathy, not elsewhere classified with unspecified morphologic lesions
N08	Glomerular disorders in diseases classified elsewhere
N13.1	Hydronephrosis with ureteral stricture, not elsewhere classified
N13.2	Hydronephrosis with renal and ureteral calculous obstruction
N13.30	Unspecified hydronephrosis
N13.39	Other hydronephrosis
N14.0	Analgesic nephropathy
N14.1	Nephropathy induced by other drugs, medicaments and biological substances
N14.2	Nephropathy induced by unspecified drug, medicament or biological substance
N14.3	Nephropathy induced by heavy metals
N14.4	Toxic nephropathy, not elsewhere classified
N15.0	Balkan nephropathy
N15.8	Other specified renal tubulo-interstitial diseases
N15.9	Renal tubulo-interstitial disease, unspecified
N16	Renal tubulo-interstitial disorders in diseases classified elsewhere
N17.0	Acute kidney failure with tubular necrosis

(continued)

Table 1. Denominator Details: Diagnostic Codes Used to Define Eight Chronic Disease Groups That Qualify Patients for the MCC Cohort (continued)

ICD-10	Description
N17.1	Acute kidney failure with acute cortical necrosis
N17.2	Acute kidney failure with medullary necrosis
N17.8	Other acute kidney failure
N17.9	Acute kidney failure, unspecified
N18.1	Chronic kidney disease, stage 1
N18.2	Chronic kidney disease, stage 2 (mild)
N18.3	Chronic kidney disease, stage 3 (moderate)
N18.4	Chronic kidney disease, stage 4 (severe)
N18.5	Chronic kidney disease, stage 5
N18.6	End stage renal disease
N18.9	Chronic kidney disease, unspecified
N19	Unspecified kidney failure
N25.0	Renal osteodystrophy
N25.1	Nephrogenic diabetes insipidus
N25.81	Secondary hyperparathyroidism of renal origin
N25.89	Other disorders resulting from impaired renal tubular function
N25.9	Disorder resulting from impaired renal tubular function, unspecified
N26.1	Atrophy of kidney (terminal)
N26.9	Renal sclerosis, unspecified
Q61.02	Congenital multiple renal cysts
Q61.11	Cystic dilatation of collecting ducts
Q61.19	Other polycystic kidney, infantile type
Q61.2	Polycystic kidney, adult type
Q61.3	Polycystic kidney, unspecified
Q61.4	Renal dysplasia
Q61.5	Medullary cystic kidney
Q61.8	Other cystic kidney diseases
Q62.0	Congenital hydronephrosis
Q62.2	Congenital megaureter
Q62.10	Congenital occlusion of ureter, unspecified
Q62.11	Congenital occlusion of ureteropelvic junction
Q62.12	Congenital occlusion of ureterovesical orifice
Q62.31	Congenital ureterocele, orthotopic
Q62.32	Cecoureterocele
Q62.39	Other obstructive defects of renal pelvis and ureter
R94.4	Abnormal results of kidney function studies
Chronic obstructive pulmonary disease (COPD) and asthma Years prior to measurement year from which codes are used: 1 year Number/types of claims to qualify: At least 1 inpatient, SNF, HHA or 2 HOP or Carrier claims with DX codes during the 1-year period	
J40	Bronchitis, not specified as acute or chronic
J41.0	Simple chronic bronchitis
J41.1	Mucopurulent chronic bronchitis
J41.8	Mixed simple and mucopurulent chronic bronchitis

(continued)

Table 1. Denominator Details: Diagnostic Codes Used to Define Eight Chronic Disease Groups That Qualify Patients for the MCC Cohort (continued)

ICD-10	Description
J42	Unspecified chronic bronchitis
J43.0	Unilateral pulmonary emphysema [MacLeod's syndrome]
J43.1	Panlobular emphysema
J43.2	Centrilobular emphysema
J43.8	Other emphysema
J43.9	Emphysema, unspecified
J44.0	Chronic obstructive pulmonary disease with acute lower respiratory infection
J44.1	Chronic obstructive pulmonary disease with (acute) exacerbation
J44.9	Chronic obstructive pulmonary disease, unspecified
J47.0	Bronchiectasis with acute lower respiratory infection
J47.1	Bronchiectasis with (acute) exacerbation
J47.9	Bronchiectasis, uncomplicated
Depression Years prior to measurement year from which codes are used: 1 year Number/types of claims to qualify: At least 1 inpatient, SNF, HHA, HOP or Carrier claim with DX codes during the 1-year period	
F31.30	Bipolar disorder, current episode depressed, mild or moderate severity, unspecified
F31.31	Bipolar disorder, current episode depressed, mild
F31.32	Bipolar disorder, current episode depressed, moderate
F31.4	Bipolar disorder, current episode depressed, severe, without psychotic features
F31.5	Bipolar disorder, current episode depressed, severe, with psychotic features
F31.60	Bipolar disorder, current episode mixed, unspecified
F31.61	Bipolar disorder, current episode mixed, mild
F31.62	Bipolar disorder, current episode mixed, moderate
F31.63	Bipolar disorder, current episode mixed, severe, without psychotic features
F31.64	Bipolar disorder, current episode mixed, severe, with psychotic features
F31.75	Bipolar disorder, in partial remission, most recent episode depressed
F31.76	Bipolar disorder, in full remission, most recent episode depressed
F31.77	Bipolar disorder, in partial remission, most recent episode mixed
F31.78	Bipolar disorder, in full remission, most recent episode mixed
F31.81	Bipolar II disorder
F32.0	Major depressive disorder, single episode, mild
F32.1	Major depressive disorder, single episode, moderate
F32.2	Major depressive disorder, single episode, severe without psychotic features
F32.3	Major depressive disorder, single episode, severe with psychotic features
F32.4	Major depressive disorder, single episode, in partial remission
F32.5	Major depressive disorder, single episode, in full remission
F32.9	Major depressive disorder, single episode, unspecified
F33.0	Major depressive disorder, recurrent, mild
F33.1	Major depressive disorder, recurrent, moderate
F33.2	Major depressive disorder, recurrent severe without psychotic features
F33.3	Major depressive disorder, recurrent, severe with psychotic symptoms
F33.40	Major depressive disorder, recurrent, in remission, unspecified
F33.41	Major depressive disorder, recurrent, in partial remission

(continued)

Table 1. Denominator Details: Diagnostic Codes Used to Define Eight Chronic Disease Groups That Qualify Patients for the MCC Cohort (continued)

ICD-10	Description
F33.42	Major depressive disorder, recurrent, in full remission
F33.9	Major depressive disorder, recurrent, unspecified
F34.1	Dysthymic disorder
F43.21	Adjustment disorder with depressed mood
Heart failure Years prior to measurement year from which codes are used: 2 years Number/types of claims to qualify: At least 1 inpatient, HOP or Carrier claim with DX codes during the 1-year period	
I09.81	Rheumatic heart failure
I11.0	Hypertensive heart disease with heart failure
I13.0	Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease
I13.2	Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease
I50.1	Left ventricular failure
I50.20	Unspecified systolic (congestive) heart failure
I50.21	Acute systolic (congestive) heart failure
I50.22	Chronic systolic (congestive) heart failure
I50.23	Acute on chronic systolic (congestive) heart failure
I50.30	Unspecified diastolic (congestive) heart failure
I50.31	Acute diastolic (congestive) heart failure
I50.32	Chronic diastolic (congestive) heart failure
I50.33	Acute on chronic diastolic (congestive) heart failure
I50.40	Unspecified combined systolic (congestive) and diastolic(congestive) heart failure
I50.41	Acute combined systolic and diastolic heart failure
I50.42	Chronic combined systolic (congestive) and diastolic
I50.43	Acute on chronic combined systolic (congestive) and diastolic heart failure
I50.9	Heart failure, unspecified
Stroke and transient ischemic attack (TIA) Years prior to measurement year from which codes are used: 1 year Number/types of claims to qualify: At least 1 inpatient claim or 2 HOP or Carrier claims with DX codes during the 1-year period	
G45.0	Vertebro-basilar artery syndrome
G45.1	Carotid artery syndrome (hemispheric)
G45.2	Multiple and bilateral precerebral artery syndromes
G45.8	Other transient cerebral ischemic attacks and related syndromes
G45.9	Transient cerebral ischemic attack, unspecified
G46.0	Middle cerebral artery syndrome
G46.1	Anterior cerebral artery syndrome
G46.2	Posterior cerebral artery syndrome
G97.31	Intraoperative hemorrhage and hematoma of a nervous system organ or structure complicating a nervous system procedure
G97.32	Intraoperative hemorrhage and hematoma of a nervous system organ or structure complicating other procedure
I60.00	Nontraumatic subarachnoid hemorrhage from unspecified carotid siphon and bifurcation

(continued)

Table 1. Denominator Details: Diagnostic Codes Used to Define Eight Chronic Disease Groups That Qualify Patients for the MCC Cohort (continued)

ICD-10	Description
I60.01	Nontraumatic subarachnoid hemorrhage from right carotid siphon and bifurcation
I60.02	Nontraumatic subarachnoid hemorrhage from left carotid siphon and bifurcation
I60.10	Nontraumatic subarachnoid hemorrhage from unspecified middle cerebral artery
I60.12	Nontraumatic subarachnoid hemorrhage from left middle cerebral artery
I60.20	Nontraumatic subarachnoid hemorrhage from unspecified anterior communicating artery
I60.21	Nontraumatic subarachnoid hemorrhage from right anterior communicating artery
I60.22	Nontraumatic subarachnoid hemorrhage from left anterior communicating artery
I60.30	Nontraumatic subarachnoid hemorrhage from unspecified posterior communicating artery
I60.31	Nontraumatic subarachnoid hemorrhage from right posterior communicating artery
I60.32	Nontraumatic subarachnoid hemorrhage from left posterior communicating artery
I60.4	Nontraumatic subarachnoid hemorrhage from basilar artery
I60.50	Nontraumatic subarachnoid hemorrhage from unspecified vertebral artery
I60.51	Nontraumatic subarachnoid hemorrhage from right vertebral artery
I60.52	Nontraumatic subarachnoid hemorrhage from left vertebral artery
I60.6	Nontraumatic subarachnoid hemorrhage from other intracranial arteries
I60.7	Nontraumatic subarachnoid hemorrhage from unspecified intracranial artery
I60.8	Other nontraumatic subarachnoid hemorrhage
I60.9	Nontraumatic subarachnoid hemorrhage, unspecified
I61.0	Nontraumatic intracerebral hemorrhage in hemisphere, subcortical
I61.1	Nontraumatic intracerebral hemorrhage in hemisphere, cortical
I61.2	Nontraumatic intracerebral hemorrhage in hemisphere, unspecified
I61.3	Nontraumatic intracerebral hemorrhage in brain stem
I61.4	Nontraumatic intracerebral hemorrhage in cerebellum
I61.5	Nontraumatic intracerebral hemorrhage, intraventricular
I61.6	Nontraumatic intracerebral hemorrhage, multiple localized
I61.8	Other nontraumatic intracerebral hemorrhage
I61.9	Nontraumatic intracerebral hemorrhage, unspecified
I63.00	Cerebral infarction due to thrombosis of unspecified precerebral artery
I63.02	Cerebral infarction due to thrombosis of basilar artery
I63.011	Cerebral infarction due to thrombosis of right vertebral artery
I63.012	Cerebral infarction due to thrombosis of left vertebral artery
I63.019	Cerebral infarction due to thrombosis of unspecified vertebral artery
I63.031	Cerebral infarction due to thrombosis of right carotid artery
I63.032	Cerebral infarction due to thrombosis of left carotid artery
I63.039	Cerebral infarction due to thrombosis of unspecified carotid artery
I63.09	Cerebral infarction due to thrombosis of other precerebral artery
I63.10	Cerebral infarction due to embolism of unspecified precerebral artery
I63.111	Cerebral infarction due to embolism of right vertebral artery
I63.112	Cerebral infarction due to embolism of left vertebral artery
I63.119	Cerebral infarction due to embolism of unspecified vertebral artery
I63.12	Cerebral infarction due to embolism of basilar artery
I63.131	Cerebral infarction due to embolism of right carotid artery
I63.132	Cerebral infarction due to embolism of left carotid artery
I63.139	Cerebral infarction due to embolism of unspecified carotid artery

(continued)

Table 1. Denominator Details: Diagnostic Codes Used to Define Eight Chronic Disease Groups That Qualify Patients for the MCC Cohort (continued)

ICD-10	Description
I63.19	Cerebral infarction due to embolism of other precerebral artery
I63.20	Cerebral infarction due to unspecified occlusion or stenosis of unspecified
I63.211	Cerebral infarction due to unspecified occlusion or stenosis of right vertebral arteries
I63.212	Cerebral infarction due to unspecified occlusion or stenosis of left vertebral arteries
I63.219	Cerebral infarction due to unspecified occlusion or stenosis of unspecified vertebral arteries
I63.22	Cerebral infarction due to unspecified occlusion or stenosis of basilar arteries
I63.231	Cerebral infarction due to unspecified occlusion or stenosis of right carotid arteries
I63.232	Cerebral infarction due to unspecified occlusion or stenosis of left carotid arteries
I63.239	Cerebral infarction due to unspecified occlusion or stenosis of unspecified carotid arteries
I63.29	Cerebral infarction due to unspecified occlusion or stenosis of other precerebral arteries
I63.30	Cerebral infarction due to thrombosis of unspecified cerebral artery
I63.311	Cerebral infarction due to thrombosis of right middle cerebral artery
I63.312	Cerebral infarction due to thrombosis of left middle cerebral artery
I63.319	Cerebral infarction due to thrombosis of unspecified middle cerebral artery
I63.321	Cerebral infarction due to thrombosis of right anterior cerebral artery
I63.322	Cerebral infarction due to thrombosis of left anterior cerebral artery
I63.329	Cerebral infarction due to thrombosis of unspecified anterior cerebral artery
I63.331	Cerebral infarction due to thrombosis of right posterior cerebral artery
I63.332	Cerebral infarction due to thrombosis of left posterior cerebral artery
I63.339	Cerebral infarction due to thrombosis of unspecified posterior cerebral artery
I63.341	Cerebral infarction due to thrombosis of right cerebellar artery
I63.342	Cerebral infarction due to thrombosis of left cerebellar artery
I63.349	Cerebral infarction due to thrombosis of unspecified cerebellar artery
I63.39	Cerebral infarction due to thrombosis of other cerebral artery
I63.40	Cerebral infarction due to embolism of unspecified cerebral artery
I63.411	Cerebral infarction due to embolism of right middle cerebral artery
I63.412	Cerebral infarction due to embolism of left middle cerebral artery
I63.419	Cerebral infarction due to embolism of unspecified middle cerebral artery
I63.421	Cerebral infarction due to embolism of right anterior cerebral artery
I63.422	Cerebral infarction due to embolism of left anterior cerebral artery
I63.429	Cerebral infarction due to embolism of unspecified anterior cerebral artery
I63.431	Cerebral infarction due to embolism of right posterior cerebral artery
I63.432	Cerebral infarction due to embolism of left posterior cerebral artery
I63.439	Cerebral infarction due to embolism of unspecified posterior cerebral artery
I63.441	Cerebral infarction due to embolism of right cerebellar artery
I63.442	Cerebral infarction due to embolism of left cerebellar artery
I63.449	Cerebral infarction due to embolism of unspecified cerebellar artery
I63.49	Cerebral infarction due to embolism of other cerebral artery
I63.50	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebral artery
I63.511	Cerebral infarction due to unspecified occlusion or stenosis of right middle cerebral artery
I63.512	Cerebral infarction due to unspecified occlusion or stenosis of left middle cerebral artery
I63.519	Cerebral infarction due to unspecified occlusion or stenosis of unspecified middle cerebral artery
I63.521	Cerebral infarction due to unspecified occlusion or stenosis of right anterior cerebral artery
I63.522	Cerebral infarction due to unspecified occlusion or stenosis of left anterior cerebral artery

(continued)

Table 1. Denominator Details: Diagnostic Codes Used to Define Eight Chronic Disease Groups That Qualify Patients for the MCC Cohort (continued)

ICD-10	Description
I63.529	Cerebral infarction due to unspecified occlusion or stenosis of unspecified anterior cerebral artery
I63.531	Cerebral infarction due to unspecified occlusion or stenosis of right posterior cerebral artery
I63.532	Cerebral infarction due to unspecified occlusion or stenosis of left posterior cerebral artery
I63.539	Cerebral infarction due to unspecified occlusion or stenosis of unspecified posterior cerebral artery
I63.541	Cerebral infarction due to unspecified occlusion or stenosis of right cerebellar artery
I63.542	Cerebral infarction due to unspecified occlusion or stenosis of left cerebellar artery
I63.549	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebellar artery
I63.59	Cerebral infarction due to unspecified occlusion or stenosis of other cerebral artery
I63.6	Cerebral infarction due to cerebral venous thrombosis, nonpyogenic
I63.8	Other cerebral infarction
I63.9	Cerebral infarction, unspecified
I66.01	Occlusion and stenosis of right middle cerebral artery
I66.02	Occlusion and stenosis of left middle cerebral artery
I66.03	Occlusion and stenosis of bilateral middle cerebral arteries
I66.09	Occlusion and stenosis of unspecified middle cerebral artery
I66.11	Occlusion and stenosis of right anterior cerebral artery
I66.12	Occlusion and stenosis of left anterior cerebral artery
I66.13	Occlusion and stenosis of bilateral anterior cerebral arteries
I66.19	Occlusion and stenosis of unspecified anterior cerebral artery
I66.21	Occlusion and stenosis of right posterior cerebral artery
I66.22	Occlusion and stenosis of left posterior cerebral artery
I66.23	Occlusion and stenosis of bilateral posterior cerebral arteries
I66.29	Occlusion and stenosis of unspecified posterior cerebral artery
I66.3	Occlusion and stenosis of cerebellar arteries
I66.8	Occlusion and stenosis of other cerebral arteries
I66.9	Occlusion and stenosis of unspecified cerebral artery
I67.841	Reversible cerebrovascular vasoconstriction syndrome
I67.848	Other cerebrovascular vasospasm and vasoconstriction
I67.89	Other cerebrovascular disease
I97.810	Intraoperative cerebrovascular infarction during cardiac surgery
I97.811	Intraoperative cerebrovascular infarction during other surgery
I97.820	Postprocedural cerebrovascular infarction during cardiac surgery
I97.821	Postprocedural cerebrovascular infarction during other surgery
	EXCLUSION: If any of the qualifying claims have: 1) S02.0XXA--S02.91XB or S06.0X0A--S06.0X6A or S06.0X9A--S06.9X9A in any DX position OR 2) Z51.89 as the principal DX code, then EXCLUDE the CLAIM [Note: this exclusion only applies to Stroke/TIA chronic condition]

- Denominator Exceptions and Exclusions
    1. Beneficiaries that do not have 12 months continuous enrollment in Medicare Part A and B during the year prior to the measurement year.
    Rationale: This data is needed to attribute chronic conditions to beneficiaries.
    2. Beneficiaries that do not have 12 months continuous enrollment in Medicare Part A during the measurement year. Beneficiaries who become deceased during the measurement period are excluded if they do not have continuous enrollment in Medicare Part A until death (i.e. the 12 month requirement is relaxed for these beneficiaries). Beneficiaries with continuous enrollment until death are excluded after the time of death.
    Rationale: We exclude these patients to ensure full data availability for outcome assessment (Part A during the measurement year). Beneficiaries with continuous enrollment who become deceased during the year are included only for the time they are alive.
- Denominator Exceptions and Exclusions Details
    1. Beneficiaries without continuous enrollment in Medicare Part A and B during the year prior to the measurement year. Lack of continuous enrollment in Medicare Part A and B is determined by patient enrollment status in a Medicare Denominator File. The enrollment indicators must be appropriately marked during the year prior to the measurement year.
    2. Beneficiaries without continuous enrollment in Medicare Part A for the duration of the measurement period (or until death) are excluded. Lack of continuous enrollment in Medicare Part A is determined by patient enrollment status in a Medicare Denominator File. The enrollment indicators must be appropriately marked during the measurement year.

Numerator

- Numerator Statement

  The outcome measured for each beneficiary is the number of acute unplanned admissions per 100 person-years at risk for admission. Persons are considered at risk for admission if they are alive, enrolled in FFS Medicare, and not currently admitted to an acute care hospital.

- Numerator Details

  Outcome Definition
  The outcome for this measure is the number of acute unplanned admissions per 100 person-years at risk for admission. The outcome includes inpatient admissions to an acute care hospital for any cause during the measurement year, unless an admission is identified as “planned.”

  Identification of Planned Admissions
  The measure outcome includes only unplanned admissions. Although clinical experts agree that proper care in the ambulatory setting should reduce hospital admissions, variation in planned admissions (such as for elective surgery) does not typically reflect quality differences. We based the planned admission algorithm on CMS’s Planned Readmission Algorithm Version 3.0, which CMS originally created to identify planned readmissions for the hospital-wide readmission measure. In brief, the algorithm identifies a short list of always planned admissions (that is, those where the principal discharge diagnosis is major organ transplant, obstetrical delivery, or maintenance chemotherapy; See Appendix Table PA1) as well as those admissions with a potentially planned procedure (for example, total hip replacement or cholecystectomy; See Appendix Table PA2 and PA3) AND a non-acute principal discharge diagnosis code (See Appendix Table PA4 for acute diagnoses). Admissions that include potentially planned procedures that might represent complications of ambulatory care, such as cardiac catheterization, are not considered planned. To adapt the algorithm for this measures, we removed from the potentially planned procedure list two procedures, cardiac catheterization and amputation, because the need for these procedures might reflect progression of clinical conditions that potentially could have been managed in the ambulatory setting to avoid admissions for these procedures.

Outcome Attribution
The outcome is attributed to the ACO to which the beneficiary is assigned in the Shared Savings Program or aligned in the Pioneer ACO Model.

Stratification or Risk Adjustment

- Stratification: Not applicable. This measure is not stratified.
- Risk Adjustment:

  We use a two-level hierarchical negative binomial model to estimate risk-standardized acute, unplanned admissions per 100 person-years at risk for admission. This approach accounts for the clustering of patients within ACOs and variation in sample size.

  The model adjusts for clinical risk factors present at the start of the measurement year, age, and the chronic disease categories that qualify the patient for the measure cohort.

  Our approach to risk adjustment is tailored to and appropriate for a publicly reported outcome measure, as articulated in the American Heart Association Scientific Statement, “Standards for Statistical Models Used for Public Reporting of Health Outcomes” [1-2].

  The risk-standardization model has 45 variables: age, each of the eight chronic disease groups, and 36 comorbidity variables. We define clinical variables primarily using CMS’s Condition Categories (CCs), which are clinically meaningful groupings of ICD-10 diagnosis codes [3]. Where ICD-10 codes in CCs overlap with those used in the variables that define the eight chronic disease groups, we removed those ICD-10 codes from the CCs to eliminate the overlap. Some variables are also defined by subsets of ICD-10 codes within CCs.

  The risk-adjustment variables are:

Demographic

1. Age (continuous variable)

Eight chronic disease groups

1. AMI
2. Alzheimer’s disease and related disorders or senile dementia
3. Atrial fibrillation
4. CKD
5. COPD and asthma
6. Depression
7. Heart failure
8. Stroke and TIA

Clinical comorbidities defined using Version 22 CCs or ICD-10 codes

1. Dialysis status (CC 134)
2. Respiratory failure (CC 82, 83, 84)
3. Advanced liver disease (27 [remove ICD-10 K767], 28, 29, 30)
4. Pneumonia (CC 114, 115, 116)
5. Septicemia/shock (CC 2)
6. Marked disability/frailty (CC 21, 70, 71, 73, 157, 158, 159, 160, 161, 189, 190)
7. Pleural effusion/pneumothorax (CC 117)
8. Hematological diseases (CC46 [remove ICD-10 D593], 48)
9. Advanced cancer (CC 8, 9, 10, 13)
10. Infectious and immunologic diseases (CC 1, 3, 4, 5 [remove ICD-10 A1811], 6, 47, 90)
11. Severe cognitive impairment (CC 50 [remove ICD-10 F05, F061, F068], 80, 64, 65)

12. Major organ transplant status (CC 132, 186)
13. Pulmonary heart disease (ICD-10 I2601, I2602, I2609, I270, I271, I272, I2789, I2781, I279, I280, I281, I288, I289)
14. Cardiomyopathy (ICD-10 I420, I421, I422, I428, I425, I429, I426, I43, I427, I514)
15. Gastrointestinal disease (CC 31, 32, 33, 35, 36)
16. Bone/joint/muscle infections/necrosis (CC 39)
17. Iron deficiency anemia (CC 49)
18. Diabetes with complications (CC 17, 18 [remove ICD-10 E0821, E0822, E0829, E0865, E0921, E0922, E0929, E1021, E1022, E1029, E1065, E1121, E1122, E1129, E1165, E1321, E1322, E1329], 19, 122, 123)
19. Ischemic heart disease except AMI (87, 88, 89, 98 add ICD-10 I234, I235, I51.1, I51.2)
20. Other lung disorders (CC 112 [remove ICD-10 J470, J471, J479], 118)
21. Vascular or circulatory disease (CC 106, 107, 108 [remove ICD-10 I701, I722])
22. Other significant endocrine disorders (CC 23 (remove ICD-10 E748, N251, N2581)
23. Other disability and paralysis (CC 72, 74, 103, 104, 119)
24. Substance abuse (CC 54, 55, 56)
25. Pancreatic disease (CC 34)
26. Other neurologic disorders (CC 75, 77, 78, 79, 81, 105)
27. Arrhythmia (except atrial fibrillation) (96 [remove ICD-10 I480, I482, I4891] and 97]
28. Hypertension (CC 94, 95)
29. Hip or vertebral fracture (CC 169, 170)
30. Lower-risk cardiovascular disease (CC 91, 92, 93)
31. Cerebrovascular disease (CC 102 [remove ICD-10 I6789])
32. Other malignancy (CC 11 [Remove ICD-10 C641, C642, C649, C689], 12)
33. Morbid obesity (ICD-10 Z6835, Z6836, Z6837, Z6838, Z6839, Z6841, Z6842, Z6843, Z6844, Z6845, E6601)
34. Urinary disorders (142 [remove ICD-10 N131, N132, N1330, N1339, Q620, Q6210, Q6211, Q6212, Q622, Q6231, Q6232, Q6239], 145 [remove ICD-10 N2589, N259, N261, N269, Q6102, Q612, Q613, Q614, Q615, Q618])
35. Psychiatric disorders other than depression (CC 57, 59, 60, 62, 63 [remove ICD-10 F4321])

Citations

1. Krumholz HM, Brindis RG, Brush JE, et al. Standards for Statistical Models Used for Public Reporting of Health Outcomes: An American Heart Association Scientific Statement From the Quality of Care and Outcomes Research Interdisciplinary Writing Group: Cosponsored by the Council on Epidemiology and Prevention and the Stroke Council Endorsed by the American College of Cardiology Foundation. Circulation. 2006; 113 (3): 456-462.
2. Normand S-LT, Shahian DM. Statistical and Clinical Aspects of Hospital Outcomes Profiling. Stat Sci. 2007; 22 (2): 206-226.

Sampling

- This is not based on a sample or survey.

Calculation Algorithm

The risk-standardized acute admission rate (RSAAR) for each ACO is calculated as the number of “predicted” to the number of “expected” admissions per 100 person-years, multiplied by the national crude number of admissions per 100 person-years among all ACO beneficiaries with MCCs. All eligible ACO beneficiaries with MCCs are used in the measure score calculation, and a score is generated for each ACO.

1. Two-level hierarchical statistical models, accounting for clustering of patients within ACOs and patient level characteristics, are estimated. The measure uses a negative binomial model since our outcome is a count of the number of admissions. The first level of the model adjusts for patient factors. The relationship between patient risk factors and the outcome of admission is determined based on the overall sample of patients within ACOs. The second level of the model estimates a random-intercept term that reflects the ACO’s contribution to admission risk, based on

its actual admission rate, the performance of other providers with similar case mix, and its sample size. The ACO-specific random intercept is used in the numerator calculation to derive an ACO-specific number of "predicted" admissions per person-year.

2. The expected number of admissions is calculated based on the ACO's case mix and national average intercept.
3. The predicted number of admissions is calculated based on the ACO's case mix and the estimated ACO-specific intercept term.
4. The measure score is the ratio of predicted admissions over the expected admissions multiplied by the crude national admission rate among all ACO patients. The predicted to expected ratio of admissions is analogous to an observed/expected ratio, but the numerator accounts for clustering and sample-size variation.
5. We multiply the ratio for each ACO by a constant, the crude national rate of acute, unplanned admissions per 100 person-years at risk for hospitalization, for ease of interpretation (RSAAR).

Appendix Tables

Table 1. Risk Adjustment Variables

ICD-10 Code	ICD-10 Descriptor
I421	Obstructive hypertrophic cardiomyopathy
I422	Other hypertrophic cardiomyopathy
I425	Other restrictive cardiomyopathy
I420	Dilated Cardiomyopathy
I428	Other cardiomyopathies
I429	Cardiomyopathy, unspecified
I426	Alcoholic cardiomyopathy
I43	Cardiomyopathy in diseases classified elsewhere
I427	Cardiomyopathy due to drug and external agent
I514	Myocarditis, unspecified
I515	Myocardial degeneration
E6601	Morbid (severe) obesity due to excess calories
Z6835	Body mass index (BMI) 35.0-35.9, adult
Z6836	Body mass index (BMI) 36.0-36.9, adult
Z6837	Body mass index (BMI) 37.0-37.9, adult
Z6838	Body mass index (BMI) 38.0-38.9, adult
Z6839	Body mass index (BMI) 39.0-39.9, adult
Z6841	Body mass index (BMI) 40.0-44.9, adult
Z6842	Body mass index (BMI) 45.0-49.9, adult
Z6843	Body mass index (BMI) 50-59.9, adult
Z6844	Body mass index (BMI) 60.0-69.9, adult
Z6845	Body mass index (BMI) 70 or greater, adult
I2601	Septic pulmonary embolism w acute cor pulmonale
I2602	Saddle embolus w acute cor pulmonale
I2609	Other pulmonary embolism with acute cor pulmonale
I270	Primary pulmonary hypertension
I271	Kyphoscoliotic heart disease
I272	Other secondary pulmonary hypertension
I2789	Other specified pulmonary heart diseases
I2781	Cor pulmonale (chronic)
I279	Pulmonary heart disease, unspecified
I280	Arteriovenous fistula of pulmonary vessels
I281	Aneurysm of pulmonary artery
I288	Other diseases of pulmonary vessels
I289	Disease of pulmonary vessels, unspecified

Table PA1. Procedure Categories That Are Always Planned in the Planned Admission Algorithm Version 3.0

Procedure CCS (ICD-10)	Description
64	Bone marrow transplant
105	Kidney transplant
176	Other organ transplantation (other than bone marrow corneal or kidney)

Table PA2. Diagnosis Categories That Are Always Planned in the Planned Admission Algorithm Version 3.0

Diagnosis CCS (ICD-10)	Description
45	Maintenance Chemotherapy
254	Rehabilitation

Table PA3: Potentially Planned Procedure Categories

The ICD-9-CM specification of the planned admission algorithm version 3.0 – MCC Population includes procedure CCS 169 (Debridement of wound; infection or burn). The ICD-10 version no longer includes procedure CCS 169. The codes in that category were moved to the following procedure CCS categories: CCS 170 (Excision of skin), CCS 174 (Other non-OR therapeutic procedures on skin and breast), CCS 175 (Other OR therapeutic procedures on skin and breast), and CCS 231 (Other therapeutic procedures).

Procedure CCS 170 is in version 3.0 – MCC Population of the algorithm; however, upon reviewing the codes in that category, it appears that they are for skin excision procedures that would not require an inpatient hospitalization. While these would not show up as admissions in the measure, we have removed procedure CCS 170 in the ICD-10 version of the algorithm to improve the face validity of the algorithm.

We reviewed the codes in the ICD-10 version of procedure CCS 174, CCS 175, and CCS 231 and determined that it would be appropriate to add CCS 175 to the ICD-10 version of the planned admission algorithm. However, we did not feel that procedure CCS 174 or CCS 231 were appropriate additions to the planned admission algorithm because they contained too many minor procedures that do not require admission to the hospital. The few major surgical procedures in both categories rarely occur in isolation so we felt that it is likely that planned admissions that include those procedures would already be captured by accompanying procedures in other CCS categories in the planned admission algorithm. The one exception is gender reconstruction surgery, which we may consider in future iterations of the planned admission algorithm if we determine that there are enough admissions in the Medicare population to split these codes out from procedure CCS 231.

Table PA3. Potentially Planned Procedure Categories and ICD-10 Codes

ICD-10 Procedure CCS	Description
3	Excision, destruction or resection of intervertebral disc
5	Insertion of catheter or spinal stimulator and injection into spinal
9	Other OR therapeutic nervous system procedures
10	Thyroidectomy; partial or complete
12	Therapeutic endocrine procedures
33	Other OR therapeutic procedures of mouth and throat
36	Lobectomy or pneumonectomy
38	Other diagnostic procedures on lung and bronchus
40	Other diagnostic procedures of respiratory tract and mediastinum
43	Heart valve procedures
44	Coronary artery bypass graft (CABG)
45	Percutaneous transluminal coronary angioplasty (PTCA) with or without stent
47	Diagnostic cardiac catheterization; coronary arteriography
48	Insertion; revision; replacement; removal of cardiac pacemaker or cardioverter/defibrillator
49	Other OR heart procedures
51	Endarterectomy; vessel of head and neck
52	Aortic resection; replacement or anastomosis
53	Varicose vein stripping; lower limb
55	Peripheral vascular bypass
56	Other vascular bypass and shunt; not heart
59	Other OR procedures on vessels of head and neck
62	Other diagnostic cardiovascular procedures
66	Procedures on spleen
67	Other therapeutic procedures; hemic and lymphatic system
74	Gastrectomy; partial and total
78	Colorectal resection
79	Excision of large intestine lesion (not endoscopic)
84	Cholecystectomy and common duct exploration
85	Inguinal and femoral hernia repair
86	Other hernia repair
99	Other OR gastrointestinal therapeutic procedures
104	Nephrectomy; partial or complete
106	Genitourinary incontinence procedures
107	Extracorporeal lithotripsy; urinary
109	Procedures on the urethra
112	Other OR therapeutic procedures of urinary tract
113	Transurethral resection of prostate (TURP)
114	Open prostatectomy
119	Oophorectomy; unilateral and bilateral
120	Other operations on ovary
124	Hysterectomy; abdominal and vaginal
129	Repair of cystocele and rectocele; obliteration of vaginal vault

(continued)

Table PA3. Potentially Planned Procedure Categories and ICD-10 Codes

ICD-10 Procedure CCS	Description
132	Other OR therapeutic procedures; female organs
142	Partial excision bone
152	Arthroplasty knee
153	Hip replacement; total and partial
154	Arthroplasty other than hip or knee
157	Amputation of lower extremity
158	Spinal fusion
159	Other diagnostic procedures on musculoskeletal system
166	Lumpectomy; quadrantectomy of breast
167	Mastectomy
172	Skin graft
175	Other OR therapeutic procedures on skin subcutaneous tissue fascia and breast
ICD-10 Procedures	**Description**
0CBS0ZZ	Excision of Larynx, Open Approach
0CBS3ZZ	Excision of Larynx, Percutaneous Approach
0CBS4ZZ	Excision of Larynx, Percutaneous Endoscopic Approach
0CBS7ZZ	Excision of Larynx, Via Natural or Artificial Opening
0CBS8ZZ	Excision of Larynx, Via Natural or Artificial Opening Endoscopic
0CBS0ZZ	Excision of Larynx, Open Approach
0CBS3ZZ	Excision of Larynx, Percutaneous Approach
0CBS4ZZ	Excision of Larynx, Percutaneous Endoscopic Approach
0CBS7ZZ	Excision of Larynx, Via Natural or Artificial Opening
0CBS8ZZ	Excision of Larynx, Via Natural or Artificial Opening Endoscopic
0B110F4	Bypass Trachea to Cutaneous with Tracheostomy Device, Open Approach
0B110Z4	Bypass Trachea to Cutaneous, Open Approach
0B113F4	Bypass Trachea to Cutaneous with Tracheostomy Device, Percutaneous Approach
0B113Z4	Bypass Trachea to Cutaneous, Percutaneous Approach
0B114F4	Bypass Trachea to Cutaneous with Tracheostomy Device, Percutaneous Endoscopic Approach
0B114Z4	Bypass Trachea to Cutaneous, Percutaneous Endoscopic Approach
0CTS0ZZ	Resection of Larynx, Open Approach
0CTS4ZZ	Resection of Larynx, Percutaneous Endoscopic Approach
0CTS7ZZ	Resection of Larynx, Via Natural or Artificial Opening
0CTS8ZZ	Resection of Larynx, Via Natural or Artificial Opening Endoscopic
0B110F4	Bypass Trachea to Cutaneous with Tracheostomy Device, Open Approach
0B110Z4	Bypass Trachea to Cutaneous, Open Approach
0B113F4	Bypass Trachea to Cutaneous with Tracheostomy Device, Percutaneous Approach
0B113Z4	Bypass Trachea to Cutaneous, Percutaneous Approach
0B114F4	Bypass Trachea to Cutaneous with Tracheostomy Device, Percutaneous Endoscopic Approach
0B114Z4	Bypass Trachea to Cutaneous, Percutaneous Endoscopic Approach
0CTS0ZZ	Resection of Larynx, Open Approach
0CTS4ZZ	Resection of Larynx, Percutaneous Endoscopic Approach
0CTS7ZZ	Resection of Larynx, Via Natural or Artificial Opening
0CTS8ZZ	Resection of Larynx, Via Natural or Artificial Opening Endoscopic
0GTG0ZZ	Resection of Left Thyroid Gland Lobe, Open Approach

(continued)

Table PA3. Potentially Planned Procedure Categories and ICD-10 Codes

ICD-10 Procedure CCS	Description
0GTG4ZZ	Resection of Left Thyroid Gland Lobe, Percutaneous Endoscopic Approach
0GTH0ZZ	Resection of Right Thyroid Gland Lobe, Open Approach
0GTH4ZZ	Resection of Right Thyroid Gland Lobe, Percutaneous Endoscopic Approach
0GTK0ZZ	Resection of Thyroid Gland, Open Approach
0GTK4ZZ	Resection of Thyroid Gland, Percutaneous Endoscopic Approach
0WB60ZZ	Excision of Neck, Open Approach
0WB63ZZ	Excision of Neck, Percutaneous Approach
0WB64ZZ	Excision of Neck, Percutaneous Endoscopic Approach
0WB6XZZ	Excision of Neck, External Approach
0BW10FZ	Revision of Tracheostomy Device in Trachea, Open Approach
0BW13FZ	Revision of Tracheostomy Device in Trachea, Percutaneous Approach
0BW14FZ	Revision of Tracheostomy Device in Trachea, Percutaneous Endoscopic Approach
0WB6XZ2	Excision of Neck, Stoma, External Approach
0WQ6XZ2	Repair Neck, Stoma, External Approach
0B5N0ZZ	Destruction of Right Pleura, Open Approach
0B5N3ZZ	Destruction of Right Pleura, Percutaneous Approach
0B5N4ZZ	Destruction of Right Pleura, Percutaneous Endoscopic Approach
0B5P0ZZ	Destruction of Left Pleura, Open Approach
0B5P3ZZ	Destruction of Left Pleura, Percutaneous Approach
0B5P4ZZ	Destruction of Left Pleura, Percutaneous Endoscopic Approach
04CK0ZZ	Extirpation of Matter from Right Femoral Artery, Open Approach
04CK3ZZ	Extirpation of Matter from Right Femoral Artery, Percutaneous Approach
04CK4ZZ	Extirpation of Matter from Right Femoral Artery, Percutaneous Endoscopic Approach
04CL0ZZ	Extirpation of Matter from Left Femoral Artery, Open Approach
04CL3ZZ	Extirpation of Matter from Left Femoral Artery, Percutaneous Approach
04CL4ZZ	Extirpation of Matter from Left Femoral Artery, Percutaneous Endoscopic Approach
04CM0ZZ	Extirpation of Matter from Right Popliteal Artery, Open Approach
04CM3ZZ	Extirpation of Matter from Right Popliteal Artery, Percutaneous Approach
04CM4ZZ	Extirpation of Matter from Right Popliteal Artery, Percutaneous Endoscopic Approach
04CN0ZZ	Extirpation of Matter from Left Popliteal Artery, Open Approach
04CN3ZZ	Extirpation of Matter from Left Popliteal Artery, Percutaneous Approach
04CN4ZZ	Extirpation of Matter from Left Popliteal Artery, Percutaneous Endoscopic Approach
04CP0ZZ	Extirpation of Matter from Right Anterior Tibial Artery, Open Approach
04CP3ZZ	Extirpation of Matter from Right Anterior Tibial Artery, Percutaneous Approach
04CP4ZZ	Extirpation of Matter from Right Anterior Tibial Artery, Percutaneous Endoscopic Approach
04CQ0ZZ	Extirpation of Matter from Left Anterior Tibial Artery, Open Approach
04CQ3ZZ	Extirpation of Matter from Left Anterior Tibial Artery, Percutaneous Approach
04CQ4ZZ	Extirpation of Matter from Left Anterior Tibial Artery, Percutaneous Endoscopic Approach
04CR0ZZ	Extirpation of Matter from Right Posterior Tibial Artery, Open Approach
04CR3ZZ	Extirpation of Matter from Right Posterior Tibial Artery, Percutaneous Approach
04CR4ZZ	Extirpation of Matter from Right Posterior Tibial Artery, Percutaneous Endoscopic Approach
04CS0ZZ	Extirpation of Matter from Left Posterior Tibial Artery, Open Approach
04CS3ZZ	Extirpation of Matter from Left Posterior Tibial Artery, Percutaneous Approach
04CS4ZZ	Extirpation of Matter from Left Posterior Tibial Artery, Percutaneous Endoscopic Approach

(continued)

Table PA3. Potentially Planned Procedure Categories and ICD-10 Codes

ICD-10 Procedure CCS	Description
04CT0ZZ	Extirpation of Matter from Right Peroneal Artery, Open Approach
04CT3ZZ	Extirpation of Matter from Right Peroneal Artery, Percutaneous Approach
04CT4ZZ	Extirpation of Matter from Right Peroneal Artery, Percutaneous Endoscopic Approach
04CU0ZZ	Extirpation of Matter from Left Peroneal Artery, Open Approach
04CU3ZZ	Extirpation of Matter from Left Peroneal Artery, Percutaneous Approach
04CU4ZZ	Extirpation of Matter from Left Peroneal Artery, Percutaneous Endoscopic Approach
04CV0ZZ	Extirpation of Matter from Right Foot Artery, Open Approach
04CV3ZZ	Extirpation of Matter from Right Foot Artery, Percutaneous Approach
04CV4ZZ	Extirpation of Matter from Right Foot Artery, Percutaneous Endoscopic Approach
04CW0ZZ	Extirpation of Matter from Left Foot Artery, Open Approach
04CW3ZZ	Extirpation of Matter from Left Foot Artery, Percutaneous Approach
04CW4ZZ	Extirpation of Matter from Left Foot Artery, Percutaneous Endoscopic Approach
04CY0ZZ	Extirpation of Matter from Lower Artery, Open Approach
04CY3ZZ	Extirpation of Matter from Lower Artery, Percutaneous Approach
04CY4ZZ	Extirpation of Matter from Lower Artery, Percutaneous Endoscopic Approach
0T9030Z	Drainage of Right Kidney with Drainage Device, Percutaneous Approach
0T9040Z	Drainage of Right Kidney with Drainage Device, Percutaneous Endoscopic Approach
0T9130Z	Drainage of Left Kidney with Drainage Device, Percutaneous Approach
0T9140Z	Drainage of Left Kidney with Drainage Device, Percutaneous Endoscopic Approach
0TC03ZZ	Extirpation of Matter from Right Kidney, Percutaneous Approach
0TC04ZZ	Extirpation of Matter from Right Kidney, Percutaneous Endoscopic Approach
0TC13ZZ	Extirpation of Matter from Left Kidney, Percutaneous Approach
0TC14ZZ	Extirpation of Matter from Left Kidney, Percutaneous Endoscopic Approach
0TC33ZZ	Extirpation of Matter from R Kidney Pelvis, Perc Approach
0TC34ZZ	Extirpate of Matter from R Kidney Pelvis, Perc Endo Approach
0TC43ZZ	Extirpation of Matter from Left Kidney Pelvis, Perc Approach
0TC44ZZ	Extirpate of Matter from L Kidney Pelvis, Perc Endo Approach
0TF33ZZ	Fragmentation in Right Kidney Pelvis, Percutaneous Approach
0TF34ZZ	Fragmentation in Right Kidney Pelvis, Percutaneous Endoscopic Approach
0TF43ZZ	Fragmentation in Left Kidney Pelvis, Percutaneous Approach
0TF44ZZ	Fragmentation in Left Kidney Pelvis, Percutaneous Endoscopic Approach
GZB4ZZZ	Other Electroconvulsive Therapy
GZB0ZZZ	Electroconvulsive Therapy, Unilateral-Single Seizure
GZB1ZZZ	Electroconvulsive Therapy, Unilateral-Multiple Seizure
GZB2ZZZ	Electroconvulsive Therapy, Bilateral-Single Seizure
GZB3ZZZ	Electroconvulsive Therapy, Bilateral-Multiple Seizure
GZB4ZZZ	Other Electroconvulsive Therapy

Table PA4. Acute Diagnosis CCS Categories and ICD-10 Codes

ICD-10 Diagnosis CCS	Description
1	Tuberculosis
2	Septicemia (except in labor)
3	Bacterial infection; unspecified site
4	Mycoses
5	HIV infection
7	Viral infection
8	Other infections; including parasitic
9	Sexually transmitted infections (not HIV or hepatitis)
54	Gout and other crystal arthropathies
55	Fluid and electrolyte disorders
60	Acute posthemorrhagic anemia
61	Sickle cell anemia
63	Diseases of white blood cells
76	Meningitis (except that caused by tuberculosis or sexually transmitted disease)
77	Encephalitis (except that caused by tuberculosis or sexually transmitted disease)
78	Other CNS infection and poliomyelitis
82	Paralysis
83	Epilepsy; convulsions
84	Headache; including migraine
85	Coma; stupor; and brain damage
87	Retinal detachments; defects; vascular occlusion; and retinopathy
89	Blindness and vision defects
90	Inflammation; infection of eye (except that caused by tuberculosis or sexually transmitted disease)
91	Other eye disorders
92	Otitis media and related conditions
93	Conditions associated with dizziness or vertigo
99	Hypertension with complications and secondary hypertension
100	Acute myocardial infarction
102	Nonspecific chest pain
104	Other and ill-defined heart disease
107	Cardiac arrest and ventricular fibrillation
109	Acute cerebrovascular disease
112	Transient cerebral ischemia
116	Aortic and peripheral arterial embolism or thrombosis
118	Phlebitis; thrombophlebitis and thromboembolism
120	Hemorrhoids
122	Pneumonia (except that caused by TB or sexually transmitted disease)
123	Influenza
124	Acute and chronic tonsillitis
125	Acute bronchitis
126	Other upper respiratory infections
127	Chronic obstructive pulmonary disease and bronchiectasis
128	Asthma

(continued)

Table PA4. Acute Diagnosis CCS Categories and ICD-10 Codes

ICD-10 Diagnosis CCS	Description
129	Aspiration pneumonitis; food/vomitus
130	Pleurisy; pneumothorax; pulmonary collapse
131	Respiratory failure; insufficiency; arrest (adult)
135	Intestinal infection
137	Diseases of mouth; excluding dental
139	Gastroduodenal ulcer (except hemorrhage)
140	Gastritis and duodenitis
142	Appendicitis and other appendiceal conditions
145	Intestinal obstruction without hernia
146	Diverticulosis and diverticulitis
148	Peritonitis and intestinal abscess
153	Gastrointestinal hemorrhage
154	Noninfectious gastroenteritis
157	Acute and unspecified renal failure
159	Urinary tract infections
165	Inflammatory conditions of male genital organs
168	Inflammatory diseases of female pelvic organs
172	Ovarian cyst
197	Skin and subcutaneous tissue infections
198	Other inflammatory condition of skin
225	Joint disorders / dislocations; trauma-related
226	Fracture of neck of femur (hip)
227	Spinal cord injury
228	Skull and face fractures
229	Fracture of upper limb
230	Fracture of lower limb
232	Sprains and strains
233	Intracranial injury
234	Crushing injury or internal injury
235	Open wounds of head; neck; and trunk
237	Complication of device; implant or graft
238	Complications of surgical procedures or medical care
239	Superficial injury; contusion
240	Burns
241	Poisoning by psychotropic agents
242	Poisoning by other medications and drugs
243	Poisoning by nonmedicinal substances
244	Other injuries and conditions due to external causes
245	Syncope
246	Fever of unknown origin
247	Lymphadenitis
249	Shock
250	Nausea and vomiting

(continued)

Table PA4. Acute Diagnosis CCS Categories and ICD-10 Codes (continued)

ICD-10 Diagnosis CCS	Description
251	Abdominal pain
252	Malaise and fatigue
253	Allergic reactions
259	Residual codes; unclassified
650	Adjustment disorders
651	Anxiety disorders
652	Attention-deficit
653	Delirium
656	Impulse control disorders
658	Personality disorders
660	Alcohol-related disorders
661	Substance-related disorders
662	Suicide and intentional self-inflicted injury
663	Screening and history of mental health and substance abuse codes
670	Miscellaneous disorders
Acute ICD-10 Codes Within Dx CCS 97: Peri-; Endo-; and Myocarditis; Cardiomyopathy	
A3681	Diphtheritic cardiomyopathy
A3950	Meningococcal carditis, unspecified
A3953	Meningococcal pericarditis
A3951	Meningococcal endocarditis
A3952	Meningococcal myocarditis
B3320	Viral carditis, unspecified
B3323	Viral pericarditis
B3321	Viral endocarditis
B3322	Viral myocarditis
B376	Candidal endocarditis
B394 I32	Histoplasmosis capsulati, unspecified Pericarditis in diseases classified elsewhere
B394 I39	Histoplasmosis capsulati, unspecified Endocarditis and heart valve disorders in diseases classified elsewhere
B395 I32	Histoplasmosis duboisii Pericarditis in diseases classified elsewhere
B395 I39	Histoplasmosis duboisii Endocarditis and heart valve disorders in diseases classified elsewhere
B399 I32	Histoplasmosis, unspecified Pericarditis in diseases classified elsewhere
I39 B399	Endocarditis and heart valve disorders in diseases classified elsewhere Histoplasmosis, unspecified
B5881	Toxoplasma myocarditis
I010	Acute rheumatic pericarditis
I011	Acute rheumatic endocarditis

(continued)

Table PA4. Acute Diagnosis CCS Categories and ICD-10 Codes (continued)

ICD-10 Codes	Description
I012	Acute rheumatic myocarditis
I018	Other acute rheumatic heart disease
I019	Acute rheumatic heart disease, unspecified
I020	Rheumatic chorea with heart involvement
I090	Rheumatic myocarditis
I099	Rheumatic heart disease, unspecified
I0989	Other specified rheumatic heart diseases
I32	Pericarditis in diseases classified elsewhere
M3212	Pericarditis in systemic lupus erythematosus
I301	Infective pericarditis
I309	Acute pericarditis, unspecified
I300	Acute nonspecific idiopathic pericarditis
I308	Other forms of acute pericarditis
I330	Acute and subacute infective endocarditis
I39	Endocarditis and heart valve disorders in diseases classified elsewhere
I339	Acute and subacute endocarditis, unspecified
I41	Myocarditis in diseases classified elsewhere
I409	Acute myocarditis, unspecified
I401	Isolated myocarditis
I400	Infective myocarditis
I408	Other acute myocarditis
I312	Hemopericardium, not elsewhere classified
I310	Chronic adhesive pericarditis
I311	Chronic constrictive pericarditis
I314	Cardiac tamponade
I514	Myocarditis, unspecified
Acute ICD-10 Codes Within Dx CCS 105: Conduction Disorders	
I442	Atrioventricular block, complete
I4430	Unspecified atrioventricular block
I440	Atrioventricular block, first degree
I441	Atrioventricular block, second degree
I4469	Other fascicular block
I444	Left anterior fascicular block
I445	Left posterior fascicular block
I4460	Unspecified fascicular block
I447	Left bundle-branch block, unspecified
I450	Right fascicular block
I4510	Unspecified right bundle-branch block
I4519	Other right bundle-branch block
I4430	Unspecified atrioventricular block
I4439	Other atrioventricular block

(continued)

Table PA4. Acute Diagnosis CCS Categories and ICD-10 Codes (continued)

ICD-10 Codes	Description
I454	Nonspecific intraventricular block
I452	Bifascicular block
I453	Trifascicular block
I455	Other specified heart block
I456	Pre-excitation syndrome
I4581	Long QT syndrome
I459	Conduction disorder, unspecified
Acute ICD-10 Codes Within Dx CCS 106: Dysrhythmia	
I479	Paroxysmal tachycardia, unspecified
R000	Tachycardia, unspecified
I498	Other specified cardiac arrhythmias
R001	Bradycardia, unspecified
I499	Cardiac arrhythmia, unspecified
I493	Ventricular premature depolarization
I4949	Other premature depolarization
Acute ICD-10 Codes Within Dx CCS 108: Congestive Heart Failure; Nonhypertensive	
I0981	Rheumatic heart failure
I509	Heart failure, unspecified
I5022	Chronic systolic (congestive) heart failure
I5032	Chronic diastolic (congestive) heart failure
I5042	Chronic combined systolic/diastolic hrt failure
I501	Left ventricular failure
I5020	Unspecified systolic (congestive) heart failure
I5021	Acute systolic (congestive) heart failure
I5023	Acute on chronic systolic (congestive) heart failure
I5030	Unspecified diastolic (congestive) heart failure
I5031	Acute diastolic (congestive) heart failure
I5033	Acute on chronic diastolic (congestive) heart failure
I5040	Unsp combined systolic and diastolic (congestive) hrt fail
I5041	Acute combined systolic (congestive) and diastolic (congestive) heart failure
I5043	Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure
Acute ICD-10 Codes Within Dx CCS 149: Biliary Tract Disease	
K8000	Calculus of gallbladder w acute cholecyst w/o obstruction
K8012	Calculus of GB w acute and chronic cholecyst w/o obstruction
K8001	Calculus of gallbladder w acute cholecystitis w obstruction
K8013	Calculus of GB w acute and chronic cholecyst w obstruction
K8042	Calculus of bile duct w acute cholecystitis w/o obstruction
K8046	Calculus of bile duct w acute and chronic cholecyst w/o obst
K8043	Calculus of bile duct w acute cholecystitis with obstruction
K8047	Calculus of bile duct w acute and chronic cholecyst w obst
K8062	Calculus of GB and bile duct w acute cholecyst w/o obst

(continued)

Table PA4. Acute Diagnosis CCS Categories and ICD-10 Codes (continued)

ICD-10 Codes	Description
K8063	Calculus of GB and bile duct w acute cholecyst w obstruction
K8066	Calculus of GB and bile duct w ac and chr cholecyst w/o obst
K8067	Calculus of GB and bile duct w ac and chr cholecyst w obst
K810	Acute cholecystitis
K812	Acute cholecystitis with chronic cholecystitis
K8030	Calculus of bile duct w cholangitis, unsp, w/o obstruction
K8031	Calculus of bile duct w cholangitis, unsp, with obstruction
K8032	Calculus of bile duct with acute cholangitis w/o obstruction
K8033	Calculus of bile duct w acute cholangitis with obstruction
K8034	Calculus of bile duct w chronic cholangitis w/o obstruction
K8035	Calculus of bile duct w chronic cholangitis with obstruction
K8036	Calculus of bile duct w acute and chr cholangitis w/o obst
K8037	Calculus of bile duct w acute and chronic cholangitis w obst
K830	Cholangitis
Acute ICD-10 Codes Within Dx CCS 152: Pancreatic Disorders	
K859	Acute pancreatitis, unspecified
B252	Cytomegaloviral pancreatitis
K850	Idiopathic acute pancreatitis
K851	Biliary acute pancreatitis
K852	Alcohol induced acute pancreatitis
K853	Drug induced acute pancreatitis
K858	Other acute pancreatitis