

**ODJFS Methods for
ECM Clinical Performance Measures**

DRAFT

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Background on the Proposed Methods

This document outlines the proposed methods for calculating the clinical performance measures listed in Appendix K of the provider agreement. There are two types of measures. The general measures are designed to assess the ability of the Enhanced Care Management Plan (ECMP) to manage inpatient and emergency department utilization. Because the ODJFS ECM program is a holistic focused program, as opposed to a disease management program, all admissions, irrespective of the diagnosis, will be included in the numerator of the general measures. The ECMPs **will not** be held accountable for the two general measures. The general measures will be calculated for informational purposes only. In addition to the two general measures, there are also disease or condition specific measures that assess the ability of the ECMP to provide disease specific care, consistent with clinical guidelines, and to manage inpatient and ED utilization related to the patient's condition(s).

ODJFS uses MedStat's Episode Grouper (MEG) software to identify members who are eligible for participation in the ECM program. MEG is a methodology that links inpatient, outpatient, and drug experience into clinically relevant episodes of care. Key portions of the episode grouper are based on the Medstat Disease Staging methodology. Disease Staging is a widely accepted, peer reviewed disease classification and severity stratification scheme that allows one to measure the appropriateness of care in a more clinically relevant manner, thereby making provider profiling and disease management information more actionable. Appendix A contains a list of the Episode Group codes that were used to identify the ECM eligible population.

If a patient has multiple conditions, such as diabetes and asthma, ODJFS uses a hierarchy to determine the "primary condition." This primary condition is used by ODJFS to help track patients by condition. Also, the primary condition is shared with the ECMPs. Although a hierarchy is used to determine the primary condition, it is important that the patient receive appropriate care for all of their conditions, not just for the condition that was determined to be primary. Therefore, the methods for calculating the measures will not rely on the primary condition. Instead, if a patient has multiple conditions, such as diabetes and asthma, then this patient will be in the denominator for the asthma **and** the diabetes measures.

General Measures

Inpatient Hospital

This measure calculates the overall admission rate.

Numerator: Admissions (X 1,000), irrespective of the diagnosis, for members in the ECMP as of the reporting year.

Denominator: Member months for members in the ECMP as of the reporting year.

Data Source: Administrative claims data

Exclusions: None

Notes: Admissions are unduplicated by recipient ID and service date

Codes to Identify Admissions
Type of Bill Codes
11x, 12x, 41x, 42x

Emergency Department

This measure calculates the overall emergency department (ED) utilization rate.

Numerator: ED visits (X 1,000), irrespective of the diagnosis, for members in the ECMP as of the reporting year.

Denominator: Member months for members in the ECMP as of the reporting year.

Data Source: Administrative claims data

Exclusions: None

Notes: Emergency department visits are unduplicated by recipient ID and service date

Codes to Identify Emergency Department Visits		
Type of Bill Codes	AND	Revenue Center Codes
13X, 43X		0450-0452, 0459

OR

CPT Codes	AND	Place of Service Code
10040-69979, 99281-99288		23

Congestive Heart Failure (CHF) Measures

Inpatient Hospital

This measure calculates the condition related admission rate.

Numerator: Admissions (X 1,000) where the principal diagnosis was CHF for members in the ECMP as of the reporting year who had an episode of CHF in the year prior to the reporting year.

Denominator: Member months for members in the ECMP as of the reporting year who had an episode of CHF (see Appendix A for episode codes used to identify CHF) in the year prior to the reporting year.

Data Source: Administrative claims data

Exclusions: None

Notes: Admissions are unduplicated by recipient ID and service date

Codes to Identify Admissions Where the Principal Diagnosis Was CHF		
ICD-9 Principal Diagnosis Codes	WITH	Type of Bill Codes
428.xx		11x, 12x, 41x, 42x

Emergency Department

This measure calculates the condition related emergency department (ED) utilization rate.

Numerator: ED visits (X 1,000) where the principal diagnosis was CHF for members in the ECMP as of the reporting year who had an episode of CHF in the year prior to the reporting year.

Denominator: Member months for members in the ECMP as of the reporting year who had an episode of CHF in the year prior to the reporting year.

Data Source: Administrative claims data

Exclusions: None

Notes: Emergency department visits are unduplicated by recipient ID and service date

Codes to Identify Emergency Department Visits Where the Principal Diagnosis Was CHF				
ICD-9 Principal Diagnosis Codes	WITH	Type of Bill Code	AND	Revenue Center Codes
428.xx		13X,43X		0450-0452, 0459

OR

ICD-9 Principal Diagnosis Codes	WITH	CPT Codes	AND	Place of Service Code
428.xx		10040-69979, 99281-99288		23

ACE Inhibitor/Angiotensin Receptor Blocker

This measure calculates the percentage of members with CHF who had at least one prescription during the reporting period for an ACE Inhibitor or Angiotensin Receptor Blocker.

Numerator: Number of members in the denominator who received one or more prescriptions for an ACE Inhibitor or Angiotensin Receptor Blocker during the reporting year.

Denominator: Members in the ECMP who had an episode of CHF in the year prior to the reporting year, who had six or more months of enrollment in the ECMP during the reporting year, and who were enrolled during the last month of the reporting year.

Data Source: Administrative claims data

Exclusions: Members who had a principal or secondary diagnosis during the reporting year, or the year prior to the reporting year, of any of the following conditions are excluded from the measure: angioedema, aortic stenosis, hypertrophic cardiomyopathy, pregnancy, renal disease

Codes to Identify ACE Inhibitor/Angiotensin Receptor Blocker Drugs
Therapeutic Classification Code
A4D (Ace Inhibitors)
or
A4F (Angiotensin Receptor Blockers)

Codes to Identify Exclusions	
Condition	ICD-9 Diagnosis Codes
Angioedema	277.6, 995.1
aortic stenosis	093.22, 395.0, 395.2, 396.0, 396.2, 396.8 424.1, 746.3
hypertrophic cardiomyopathy	425.1, 425.4, 746.84
pregnancy	630.xx-677.xx
renal disease	580.xx-588.xx

Cardiac Related Hospital Readmission

This measure calculates the cardiac related inpatient readmission rate.

Numerator: Number of cardiac related readmissions for members in the ECMP as of the reporting year who had an episode of CHF in the year prior to the reporting year. A readmission is defined as a cardiac related admission that occurs within 30 days of a prior cardiac related admission.

Denominator: Number of cardiac related admissions during the reporting year for members in the ECMP as of the reporting year who had an episode of CHF in the year prior to the reporting year.

Data Source: Administrative claims data

Exclusions: None

Codes to Identify Cardiac Related Admissions		
ICD-9 Principal Diagnosis Codes	WITH	Type of Bill Codes
393.xx-398.xx, 401.xx-405.xx, 410.xx-414.xx, 415.xx-417.xx, 420.xx-429.xx, 440.xx-448.xx, 451.xx-459.xx		11x, 12x, 41x, 42x

Coronary Artery Disease (CAD) Measures

Inpatient Hospital

This measure calculates the condition related discharge rate.

Numerator: Admissions (X 1,000) where the principal diagnosis was CAD for members in the ECMP as of the reporting year who had an episode of CAD in the year prior to the reporting year.

Denominator: Member months for members in the ECMP as of the reporting year who had an episode of CAD in the year prior to the reporting year.

Data Source: Administrative claims data

Exclusions: None

Notes: Admissions are unduplicated by recipient ID and service date

Codes to Identify Admissions Where the Principal Diagnosis Was CAD		
ICD-9 Principal Diagnosis Codes	WITH	Type of Bill Codes
410.xx-414.xx		11x, 12x, 41x, 42x

Emergency Department

This measure calculates the condition related emergency department (ED) utilization rate.

Numerator: ED visits (X 1,000) where the principal diagnosis was CAD for members in the ECMP as of the reporting year who had an episode of CAD in the year prior to the reporting year.

Denominator: Member months for members in the ECMP as of the reporting year who had an episode of CAD in the year prior to the reporting year.

Data Source: Administrative claims data

Exclusions: None

Notes: Emergency department visits are unduplicated by recipient ID and service date

Codes to Identify Emergency Department Visits Where the Principal Diagnosis Was CAD				
ICD-9 Principal Diagnosis Codes	WITH	Type of Bill Code	AND	Revenue Center Codes
410.xx-414.xx		13X,43X		0450-0452, 0459

OR

ICD-9 Principal Diagnosis Codes	WITH	CPT Codes	AND	Place of Service Code
410.xx-414.xx		10040-69979, 99281-99288		23

Cardiac Related Hospital Readmission

This measure calculates the cardiac related inpatient readmission rate.

Numerator: Number of cardiac related readmissions for members in the ECMP as of the reporting year who had an episode of CAD in the year prior to the reporting year. A readmission is defined as a cardiac related admission that occurs within 30 days of a prior cardiac related admission.

Denominator: Number of cardiac related admissions during the reporting period for members in the ECMP as of the reporting year who had an episode of CAD in the year prior to the reporting year.

Data Source: Administrative claims data

Exclusions: None

Codes to Identify Cardiac Related Admissions		
ICD-9 Principal Diagnosis Codes	WITH	Type of Bill Codes
393.xx-398.xx, 401.xx-405.xx, 410.xx-414.xx, 415.xx-417.xx, 420.xx-429.xx, 440.xx-448.xx, 451.xx-459.xx		11x, 12x, 41x, 42x

Beta-Blocker Treatment after Heart Attack

This measure calculates the percentage of ECM members 35 years and older during the reporting year who were hospitalized from January 1-December 24th of the reporting year with a diagnosis of acute myocardial infarction (AMI) and who received an ambulatory prescription for beta blockers within seven days of discharge.

Numerator: Number of members in the denominator who received a prescription for a beta-blocker within seven days of discharge. The list of drugs included in the numerator can be found at:
<http://www.ncqa.org/Programs/HEDIS/hedis2004NDCFfinalLists.htm>

Denominator: Number of ECM members 35 years and older during the reporting year who were hospitalized from January 1-December 24th of the reporting year with a diagnosis of acute myocardial infarction and who were enrolled at least seven days after discharge.

Data Source: Administrative claims data

Exclusions: If a member had a prescription for one of the drugs listed in NCQA's "beta-blocker exclusion" list, then the member is excluded from the measure. This list of drugs can be found at
<http://www.ncqa.org/Programs/HEDIS/hedis2004NDCFfinalLists.htm> and includes inhaled corticosteroids.

Notes: If a member has more than one episode of AMI from January 1-December 24th of the reporting year, then only the first discharge will be included in the measure. If a member had a prescription for beta blockers before entering the hospital, then the member will be considered numerator-compliant if the prescription date is no more than 35 days before the discharge date.

Annual Lipid Profile

This measure calculates the percentage of members with coronary artery disease who received a lipid profile during the reporting year.

Numerator: Members in the denominator who received a lipid profile during the reporting period.

Denominator: Members who had an episode of CAD in the year prior to the reporting year, who were enrolled for at least 11 months with the ECMP during the reporting period, and who were enrolled during the last month of the reporting year.

Data Source: Administrative claims data

Exclusions: None

Note: If a member had a lipid profile, or all of the components of a lipid profile during the reporting year, then the member will be considered to have had a lipid profile during the reporting year.

Codes to Identify Lipid Profile		
CPT Code	OR	CPT Codes
80061 (Lipid Profile)		82465 (total cholesterol) and 83718 (HDL) and 84478 (triglycerides) with (83715, 83716, or 83721 (LDL))

Hypertension Measures

Inpatient Hospital

This measure calculates the condition related discharge rate.

Numerator: Admissions (X 1,000) where the principal diagnosis was hypertension for members in the ECMP as of the reporting year who had an episode of hypertension in the year prior to the reporting year.

Denominator: Member months for members in the ECMP as of the reporting year who had an episode of hypertension in the year prior to the reporting year.

Data Source: Administrative claims data

Exclusions: None

Notes: Admissions are unduplicated by recipient ID and service date

Codes to Identify Admissions Where the Principal Diagnosis Was Hypertension		
ICD-9 Principal Diagnosis Codes	WITH	Type of Bill Codes
401.xx-405.xx		11x, 12x, 41x, 42x

Emergency Department

This measure calculates the condition related emergency department (ED) utilization rate.

Numerator: ED visits (X 1,000) where the principal diagnosis was hypertension for members in the ECMP as of the reporting year who had an episode of hypertension in the year prior to the reporting year.

Denominator: Member months for members in the ECMP as of the reporting year who had an episode of hypertension in the year prior to the reporting year.

Data Source: Administrative claims data

Exclusions: None

Notes: Emergency department visits are unduplicated by recipient ID and service date

Codes to Identify Emergency Department Visits Where the Principal Diagnosis Was Hypertension				
ICD-9 Principal Diagnosis Codes	WITH	Type of Bill Code	AND	Revenue Center Codes
401.xx-405.xx		13X,43X		0450-0452, 0459

OR

ICD-9 Principal Diagnosis Codes	WITH	CPT Codes	AND	Place of Service Code
401.xx-405.xx		10040-69979, 99281-99288		23

Diabetes Measures

Inpatient Hospital

This measure calculates the condition related discharge rate.

Numerator: Admissions (X 1,000) where the principal diagnosis was diabetes for members in the ECMP as of the reporting year who had an episode of diabetes in the year prior to the reporting year.

Denominator: Member months for members in the ECMP as of the reporting year who had an episode of diabetes in the year prior to the reporting year.

Data Source: Administrative claims data

Exclusions: None

Notes: Admissions are unduplicated by recipient ID and service date

Codes to Identify Admissions Where the Principal Diagnosis Was Diabetes		
ICD-9 Principal Diagnosis Codes	WITH	Type of Bill Codes
250.xx, 357.2, 362.0x, 366.41, 648.0		11x, 12x, 41x, 42x

Emergency Department

This measure calculates the condition related emergency department (ED) utilization rate.

Numerator: ED visits (X 1,000) where the principal diagnosis was diabetes for members in the ECMP as of the reporting year who had an episode of diabetes in the year prior to the reporting year.

Denominator: Member months for members in the ECMP as of the reporting year who had an episode of diabetes in the year prior to the reporting year.

Data Source: Administrative claims data

Exclusions: None

Notes: Emergency department visits are unduplicated by recipient ID and service date

Codes to Identify Emergency Department Visits Where the Principal Diagnosis Was Diabetes				
ICD-9 Principal Diagnosis Codes	WITH	Type of Bill Code	AND	Revenue Center Codes
250.xx, 357.2, 362.0x, 366.41, 648.0		13X,43X		0450-0452, 0459

OR

ICD-9 Principal Diagnosis Codes	WITH	CPT Codes	AND	Place of Service Code
250.xx, 357.2, 362.0x, 366.41, 648.0		10040-69979, 99281-99288		23

Eye Exam

This measure calculates the percentages of members with diabetes mellitus who received a retinal exam during the reporting year by an optometrist or ophthalmologist.

Numerator: Number of members in the denominator who received one or more retinal exams during the reporting year by an optometrist or ophthalmologist

Denominator: Number of members in the ECMP who had an episode of diabetes in the year prior to the reporting year, who had at least 11 months of enrollment in the ECMP during the reporting year, and who were enrolled during the last month of the reporting year.

Data Source: Administrative claims data

Codes to Identify Eye Exams		
CPT Codes	OR	ICD-9-CM Codes
67101, 67105, 67107-67108, 67110, 67112, 67141, 67145, 67208, 67210, 67218, 67227, 67228, 92002, 92004, 92012, 92014, 92018, 92019, 92225, 92226, 92230, 92235, 92240, 92250, 92260, 92287, 99204, 99205, 99214, 99215, 99242-99245		14.1-14.5, 14.9, 95.02-95.04, 95.11, 95.12, 95.16

Codes to Identify Eye Care Professionals		
Provider Type	OR	Provider Specialty Code
35 (Optometrist, Individual)		54 (Ophthalmology)
55 (Professional School Clinic - Optometry)		72 (Ophthalmology, Otology, Laryngology)
61 (Optometrist, Group)		

Chronic Obstructive Pulmonary Disease (COPD) Measures

Inpatient Hospital

This measure calculates the condition related discharge rate.

Numerator: Admissions (X 1,000) where the principal diagnosis was COPD for members in the ECMP as of the reporting year who had an episode of COPD in the year prior to the reporting year.

Denominator: Member months for members in the ECMP as of the reporting year who had an episode of COPD in the year prior to the reporting year.

Data Source: Administrative claims data

Exclusions: None

Notes: Admissions are unduplicated by recipient ID and service date

Codes to Identify Admissions Where the Principal Diagnosis Was COPD		
ICD-9 Principal Diagnosis Codes	WITH	Type of Bill Codes
490.xx-492.xx, 494.xx-496.xx		11x, 12x, 41x, 42x

Emergency Department

This measure calculates the condition related emergency department (ED) utilization rate.

Numerator: ED visits (X 1,000) where the principal diagnosis was COPD for members in the ECMP as of the reporting year who had an episode of COPD in the year prior to the reporting year.

Denominator: Member months for members in the ECMP as of the reporting year who had an episode of COPD in the year prior to the reporting year.

Data Source: Administrative claims data

Exclusions: None

Notes: Emergency department visits are unduplicated by recipient ID and service date

Codes to Identify Emergency Department Visits Where the Principal Diagnosis Was COPD				
ICD-9 Principal Diagnosis Codes	WITH	Type of Bill Code	AND	Revenue Center Codes
490.xx-492.xx, 494.xx-496.xx		13X,43X		0450-0452, 0459

OR

ICD-9 Principal Diagnosis Codes	WITH	CPT Codes	AND	Place of Service Code
490.xx-492.xx, 494.xx-496.xx		10040-69979, 99281-99288		23

Asthma Measures

Inpatient Hospital

This measure calculates the condition related discharge rate.

Numerator: Admissions (X 1,000) where the principal diagnosis was asthma for members in the ECMP as of the reporting year who had an episode of asthma in the year prior to the reporting year.

Denominator: Member months for members in the ECMP as of the reporting year who had an episode of asthma in the year prior to the reporting year.

Data Source: Administrative claims data

Exclusions: None

Notes: Admissions are unduplicated by recipient ID and service date

Codes to Identify Admissions Where the Principal Diagnosis Was Asthma		
ICD-9 Principal Diagnosis Codes	WITH	Type of Bill Codes
493.xx		11x, 12x, 41x, 42x

Emergency Department

This measure calculates the condition related emergency department (ED) utilization rate.

Numerator: ED visits (X 1,000) where the principal diagnosis was asthma for members in the ECMP as of the reporting year who had an episode of asthma in the year prior to the reporting year.

Denominator: Member months for members in the ECMP as of the reporting year who had an episode of asthma in the year prior to the reporting year.

Data Source: Administrative claims data

Exclusions: None

Notes: Emergency department visits are unduplicated by recipient ID and service date

Codes to Identify Emergency Department Visits Where the Principal Diagnosis Was COPD				
ICD-9 Principal Diagnosis Codes	WITH	Type of Bill Code	AND	Revenue Center Codes
493.xx		13X,43X		0450-0452, 0459

OR

ICD-9 Principal Diagnosis Codes	WITH	CPT Codes	AND	Place of Service Code
493.xx		10040-69979, 99281-99288		23

Use of Appropriate Medications

This measure calculates the percentage of members aged 5 and older with asthma who received the recommended medication during the reporting year.

Numerator: The number of members in the denominator who received one or more prescriptions of the recommended medications during the reporting year. A list of the medications can be found at <http://www.ncqa.org/Programs/HEDIS/hedis2004NDCFinalLists.htm>
The classes of medications included in the list are inhaled corticosteroids, anti-asthmatic combinations, leukotriene modifiers, methylxanthines, and mast cell stabilizers.

Denominator: The number of members aged 5 and older as of the last month of the reporting year with an episode of asthma in the year prior to the reporting year, who had six or more months of enrollment in the ECMP during the reporting year, and who were enrolled during the last month of the reporting year.

Data Source: Administrative claims data

Exclusions: None

Appendix A

Condition Selection Criteria

Codes Used to Select the ECM Eligible Population	
Condition	Episode Group Code
Coronary Artery Disease	10,11
Hypertension	13 & High Disease Stage Code (HDSC) > 1.01, 14 182 & HDSC = 2.02, 186 & HDSC = 2.03,
Diabetes	49,50,51
Congestive Heart Failure	7 & HDSC = 3.03, 9, 10 & HDSC = 3.05 or 3.11, 11 & HDSC = 3.05 or 3.11, 13 & HDSC = 3.02, 17 & HDSC = 3.01, 19 & HDSC = 3.02, 29 & HDSC = 3.01, 53 & HDSC = 3.02, 55 & HDSC = 3.01, 87 & HDSC = 3.05, 235 & HDSC = 3.01, 236 & HDSC = 3.04, 317 & HDSC = 3.02, 380 & HDSC = 3.03
Asthma	496, 497
Chronic Obstructive Pulmonary Disease	500, 504

Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: CVS07

DXCat Label: Cardiomyopathies

Etiology:

Congenital; Genetic (or hereditary); Immune; Infection;
Toxicologic

Stage	Description	ICD-9-CM Codes
1.01	Transient hypertrophic cardiomyopathy of infancy	NO;
2.01	Cardiomyopathies	DX 4250-4254, 4257-4259;
2.02	with first degree heart block or Mobitz I heart block or bundle branch block	STAGE 2.01 + (DX 42611, 4262, 42613, 4263, 4264, 42650-42654, 4269);
2.03	with Mobitz II heart block	STAGE 2.01-2.02 + DX 42612;
2.04	with supraventricular tachycardia or atrial fibrillation or atrial flutter	STAGE 2.01-2.03 + (DX 4270, 42731, 42732);
3.01	with complete heart block	STAGE 2.01-2.04 + (DX 4260, 42689);
3.02	with pulmonary embolism	STAGE 2.01-3.01 + GROUP PULMEMB;
3.03	with congestive heart failure	STAGE 2.01-3.02 + GROUP CHF_NON_HTN;
3.04	with non-sustained ventricular tachycardia	STAGE 2.01-3.03 + DX 4271;
3.05	with respiratory failure	STAGE 2.01-3.04 + GROUP RESP_FAIL;
3.06	with sustained ventricular tachycardia	NO;
3.07	with ventricular fibrillation or ventricular flutter or shock	STAGE 2.01-3.05 + (GROUP SHOCKC OR GROUP SHOCKN) ; STAGE 2.01-3.05 + (DX 42741-42742);
4.00	with death	NO;

References:

Bernstein D. The Primary cardiomyopathies. In: Behrman RE, Kliegman RM, Arvin AM, Nelson WE, eds. Nelson Textbook of Pediatrics, 15th ed. Philadelphia, PA: WB Saunders; 1996:1354-1355.

Dec GW, Fuster V. Idiopathic dilated cardiomyopathy. N Engl J Med. 1994;331(23):1564-1575.

Maron BJ, Isner JM, McKenna WJ. 26th Bethesda conference: recommendations for determining eligibility for competition in athletes with cardiovascular abnormalities. Task Force 3: hypertrophic cardiomyopathy, myocarditis and other myopericardial diseases and mitral valve prolapse. Journal of the American College of Cardiology. 1994;24(4):880-885.

Massie BM, Amidon TM. Myocarditis and the cardiomyopathies. In: Tierney Jr LM, McPhee SJ, Papadakis MA, eds. Current Medical Diagnosis & Treatment. Stamford, CT: Appleton & Lange; 1998:413-417.

Pisani B, Taylor DO, Mason JW. Inflammatory myocardial diseases and cardiomyopathies. American Journal of Medicine. 1997;102(5):459-469.

Richardson P et al. Report of the 1995 World Health Organization/International Society and Federation of Cardiology Task Force on the Definition and Classification of Cardiomyopathies. Circ. 1996; 93:841-842.

Wynne J, Braunwald E. The cardiomyopathies and myocarditides. In: Fauci AS, Braunwald E, Isselbacher KJ, Wilson JD, Martin JB, Kasper DL, Hauser SL, Longo, DL, eds. Harrison's Principles of Internal Medicine, 14th ed. New York, NY: McGraw-Hill; 1998:1328-1334.

Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: CVS09

Etiology:

DXCat Label: Congestive Heart Failure

Idiopathic

Stage Description**ICD-9-CM Codes**

3.01	Congestive heart failure	DX 4280-42843;
3.02	with azotemia or hyponatremia	STAGE 3.01 + (DX 2761, 7906);
3.03	with low ejection fraction	NO;
3.04	with respiratory failure	STAGE 3.01-3.02 + GROUP RESP_FAIL;
3.05	with shock	STAGE 3.01-3.04 + (GROUP SHOCKC OR GROUP SHOCKN) ;
4.00	with death	NO;

References:

Braunwald E. Heart failure. In: Fauci AS, Braunwald E, Isselbacher KJ, Wilson JD, Martin JB, Kasper DL, Hauser SL, Longo, DL, eds. Harrison's Principles of Internal Medicine. 14th ed. New York, NY: McGraw-Hill; 1998:1287-1298.

Eichhorn EJ, Bristow MR. Medical therapy can improve the biological properties of the chronically failing heart. A new era in the treatment of heart failure. Circulation. 1996;94(9):2285-2296.

Massie BM, Amidon TM. Heart: cardiac failure. In: Tierney Jr LM, McPhee SJ Papadakis MA, eds. Current Medical Diagnosis & Treatment. Stamford, CT: Appleton & Lange; 1998: 403-413.

Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: CVS10

Etiology:

DXCat Label: Coronary Artery Disease with Prior Coronary Revascularization

Degenerative; Genetic (or hereditary)

Stage	Description	ICD-9-CM Codes
1.01	Coronary atherosclerosis or asymptomatic chronic ischemic heart disease or old myocardial infarction	DX V4581, 99603, 41402-41407; (DX 41181, 412, 41400-41405, 4292) + (DX V4581, 99603);
1.02	Chronic stable exertional angina or chronic ischemic heart disease	(DX 4139, 4148-4149) + (DX V4581, 99603);
2.01	Progressing angina pectoris or exertional myocardial ischemic at low workload or old myocardial infarction with low ejection fraction	(DX 4110, 41189) + (DX V4581, 99603);
2.02	Prinzmetal's variant angina	DX 4130-4131 + (DX V4581, 99603);
2.03	Angina with hypertrophy or akinesia or dyskinesia or S3 gallop or S4 gallop	STAGE 1.01-2.02 + (DX 4293, 42789);
2.04	Unstable angina pectoris	DX 4111 + (DX V4581, 99603);
3.01	Acute inferior or posterior wall myocardial infarction	DX 41020-41092 + (DX V4581, 99603);
3.02	Acute inferior or posterior wall myocardial infarction with heart block or pericarditis	STAGE 3.01 + (DX 42090-42099, 4260-4269);
3.03	Acute inferior or posterior wall myocardial infarction with left ventricular thrombus	NO;
3.04	Acute inferior or posterior wall myocardial infarction with left ventricular aneurysm	STAGE 3.01-3.03 + DX 41410;
3.05	Acute inferior or posterior wall myocardial infarction with CHF	STAGE 3.01-3.04 + (GROUP CHF__NON_HTN OR DX 5184);
3.06	Acute anterior wall myocardial infarction	(DX 41000-41002, 41010-41012) + (DX V4581, 99603);
3.07	Acute anterior wall or all other myocardial infarction with low ejection fraction	NO;
3.08	Acute anterior wall myocardial infarction with heart block or pericarditis	STAGE 3.06 + (DX 42090-42099, 4260-4269);
3.09	Acute anterior wall myocardial infarction with ventricular thrombus formation	NO;
3.10	Acute anterior wall myocardial infarction with ventricular aneurysm	STAGE 3.06-3.08 + DX 41410;
3.11	Acute anterior wall myocardial infarction with CHF	STAGE 3.06-3.10 + (GROUP CHF__NON_HTN OR DX 5184);
3.12	Acute myocardial infarction with pulmonary embolism	STAGE 3.01-3.11 + DX 41519;
3.13	Acute myocardial infarction with cerebrovascular accident	STAGE 3.01-3.12 + (DX 430-4329, 43401, 43411, 43491, 436);
3.14	Acute anterior myocardial infarction with papillary muscle rupture or ventricular septal rupture	STAGE 3.06-3.13 + DX 4296;
3.15	Coronary artery disease with ventricular fibrillation or shock	STAGE 1.01-3.14 + (DX 42741-42742 OR GROUP SHOCKC OR GROUP SHOCKN);
3.16	Coronary artery disease with cardiac arrest	STAGE 1.01-3.15 + DX 4275;
4.00	Coronary artery disease with death	NO;

Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: CVS10

DXCat Label: Coronary Artery Disease with Prior Coronary Revascularization

Etiology:

Degenerative; Genetic (or hereditary)

Stage Description

ICD-9-CM Codes

References:

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Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: CVS13

DXCat Label: Essential Hypertension

Etiology:

Degenerative; Genetic (or hereditary); Idiopathic

Stage	Description	ICD-9-CM Codes
1.01	Hypertension, minimal	DX 4011, 4019;
1.02	Hypertension, moderate	DX 40300, 40310, 40390;
1.03	Hypertension, severe	NO;
2.01	Hypertension, very severe	DX 4010;
2.02	Hypertensive retinopathy, Grade I or II of Keith and Wagener	DX 36211;
2.03	Hypertensive retinopathy, Grade III or IV of Keith and Wagener	STAGE 1.01-2.02 + (DX 36281-36282);
2.04	Hypertensive cardiomegaly, arrhythmias, or wall motion abnormalities	DX 40200, 40210, 40290;
3.01	Hypertensive renal failure	DX 40301, 40311, 40391, 40400, 40402, 40410, 40412, 40490, 40492;
3.02	Hypertensive congestive heart failure	(DX 4010, 4011, 4019) + DX 4280; DX 40201, 40211, 40291, 40401, 40403, 40411, 40413, 40491, 40493;
3.03	Hypertensive CVA or Hypertensive encephalopathy	DX 4372; STAGE 1.01-3.02 + (DX 430, 431, 4320-4329, 436); STAGE 1.01-3.02 + (GROUP DISORIENT) + (DX 37000-37701);
3.04	Hypertensive CVA with cranial nerve involvement	STAGE 3.03 + GROUP CRAN_NRV_PAL;
3.05	Hypertensive CVA with cerebellar or pyramidal tract dysfunction	STAGE 3.03-3.04 + DX 3483;
3.06	Hypertensive CVA with hemiparesis or hemiplegia	STAGE 3.03-3.05 + (DX 34200-34202, 34210-34212, 34280-34281, 34290-34292);
3.07	Hypertensive CVA with amblyopia and contralateral hemiplegia	STAGE 3.03-3.06 + (DX 36800, 36855 OR GROUP BLINDNESS);
3.08	Hypertensive CVA with quadriplegia	STAGE 3.03-3.07 + (DX 34400-34409);
3.09	with coma	STAGE 1.01-3.08 + GROUP COMA;
4.00	with death	NO;

References:

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Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: CVS16

DXCat Label: Mitral Stenosis

Etiology:

Congenital; Degenerative

Stage	Description	ICD-9-CM Codes
1.01	Mild mitral stenosis or mitral atresia	DX 4240, 7465;
2.01	Moderate mitral stenosis	NO;
2.02	Moderate mitral stenosis with left atrial enlargement	STAGE 1.01 + DX 4293;
2.03	Moderate mitral stenosis with atrial fibrillation	STAGE 1.01-2.02 + (DX 42731-42732);
2.04	Severe mitral stenosis	NO;
2.05	Severe mitral stenosis with atrial fibrillation	NO;
3.01	Severe mitral stenosis with congestive heart failure	STAGE 1.01-2.03 + GROUP CHF_NON_HTN;
3.02	Severe mitral stenosis with pulmonary hypertension	STAGE 1.01-3.01 + (DX 4150, 4160, 4168);
3.03	Severe mitral stenosis with systemic embolic phenomena	STAGE 1.01-3.02 + (DX 41511, 41519, 43410-43491, 4530, 4533, 59381);
3.04	Severe mitral stenosis with respiratory failure	STAGE 1.01-3.03 + GROUP RESP_FAIL;
3.05	Severe mitral stenosis with shock	STAGE 1.01-3.04 + GROUP SHOCKN;
4.00	Severe mitral stenosis with death	NO;

References:

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Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: CVS18

Etiology:

DXCat Label: Pericarditis: Chronic

Infection; Idiopathic; Metabolic

Stage	Description	ICD-9-CM Codes
2.01	Chronic pericarditis	DX 4238;
2.02	Constrictive pericarditis	DX 4231-4232;
2.03	with effusion	DX 4230, 4239;
2.04	with mediastinitis	STAGE 2.01-2.03 + DX 5192;
3.01	with myocarditis	STAGE 2.01-2.04 + GROUP MYOCARDITIS;
3.02	with congestive heart failure	STAGE 2.01-3.01 + GROUP CHF__NON_HTN;
3.03	with anasarca	STAGE 2.01-3.02 + (DX 5119, 514, 7823, 7891, 7895);
3.04	with respiratory failure	STAGE 2.01-3.03 + GROUP RESP_FAIL;
4.00	with death	NO;

References:

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Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: CVS83

Etiology:

DXCat Label: Other Cardiac Conditions

Stage	Description	ICD-9-CM Codes
1.01	Kyphoscoliotic heart disease or chronic pulmonary heart disease; nonrheumatic valve disorder, heart or other coronary transplant or implanted device status	DX 4160-4169, 4242-4243, V421-V422, V432-V433, V4500-V4509;
2.01	Aneurysm of heart wall or coronary vessel, cardiomegaly, ill-defined heart disease	DX 41410-41411, 41419, 4220-42299, 4293, 42981-4299;
3.01	Acute cor pulmonale, dissection of coronary artery, myocarditis or endocarditis not specified as infective, heart failure, septal defect, sequelae of AMI	DX 4150, 41412, 42490, 42499, 4290-4291, 4289, 4294-4296, 42971-42979;

References:

Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: END04

Etiology:

DXCat Label: Diabetes Mellitus Type 1

Metabolic

Stage	Description	ICD-9-CM Codes
1.01	Type 1 diabetes mellitus	DX 25001;
1.02	Symptomatic diabetes mellitus	DX 25003, 25081, 25083, 25091, 25093;
1.03	with history of ketoacidosis or pancreatic islet cell antibodies	NO;
2.01	with retinopathy	DX 25051, 25053; (DX 25051, 25053) + (DX 36100-36107, 3612-3619, 36201-36202, 36214, 36216, 36281-36282, 36442);
2.02	with neuropathy	DX 25061, 25063; (DX 25061, 25063) + (DX 3371, 3501-3569, 3572, 3581, 5363);
2.03	with glomerulosclerosis	DX 25041, 25043; (DX 25041, 25043) + (DX 5811, 58181, 5821, 587, 7910);
2.04	with vascular disease (peripheral, cardiovascular, or cerebral)	DX 25071, 25073; STAGE 1.02-2.03 + (DX 43300, 43310, 43320, 43330, 43380, 43390, 43400, 43410, 43490, 44381, 70714-70715, 4139 OR DXCAT CVS13) ; (DX 25071, 25073) + (DX 43300, 43320, 43330, 43380, 43390, 43400, 43490, 44381, 70714-70715, 4139 OR DXCAT CVS13);
2.05	with cellulitis	STAGE 1.02-2.04 + (DX 37313, 37531, 38010-38016, 37601, 4572, 4781, 5283, 5285, 566, 6040, 6072, 6084, 6110, 6163-6164, 68100-683, 69589);
2.06	with pyelonephritis	STAGE 1.02-2.05 + DX 59000-5909;
2.07	with gangrenous infection	(DX 25060, 25062, 25070, 25080, 25082) + DX 7854 ;
2.08	with osteomyelitis	STAGE 1.01-2.07 + GROUP OSTEOMYELIT;
3.01	with renal failure	STAGE 1.02-2.08 + (GROUP REN_FAIL_ACU OR GROUP REN_FAIL_CHR);
3.02	with hyperosmolar state	DX 25021, 25023;
3.03	with ketoacidosis	DX 25011, 25013;
3.04	with acute myocardial infarction	STAGE 2.04 + GROUP AMI;
3.05	with acute cerebral vascular accident	(STAGE 2.04, 3.04) + (DX 430, 431, 4320-4321, 4329, 43301, 43311, 43321, 43331, 43381, 43391, 43401, 43411, 43491, 436);
3.06	with sepsis	STAGE 2.05-3.05 + GROUP SEPSIS; DX 25081 + GROUP SEPSIS; DX 25083 + GROUP SEPSIS;
3.07	with coma	DX 25031, 25033;
3.08	with hyperosmolar coma	STAGE 3.02 + GROUP COMA;
3.09	with shock	STAGE 3.01-3.08 + (GROUP SHOCKC OR GROUP SHOCKN) ; DX 25081 + (GROUP SHOCKC OR GROUP SHOCKN) ; DX 25083 + (GROUP SHOCKC OR GROUP SHOCKN);

Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: END04

Etiology:

DXCat Label: Diabetes Mellitus Type 1

Metabolic

Stage	Description	ICD-9-CM Codes
4.00	with death	NO;

References:

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Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: END05

Etiology:

DXCat Label: Diabetes Mellitus Type 2 and Hyperglycemic States

Metabolic

Stage	Description	ICD-9-CM Codes
1.01	Impaired fasting glucose	DX 79021, 79029;
1.02	Impaired glucose tolerance	DX 7902, 79022;
1.03	Asymptomatic diabetes mellitus	DX 25000;
1.04	Symptomatic diabetes mellitus	DX 25002, 25080, 25082, 25090, 25092;
2.01	with retinopathy	DX 25050, 25052; (DX 25050, 25052) + (DX 36100-36107, 3612-3619, 36201-36202, 36214, 36216, 36281-36282, 36242);
2.02	with neuropathy	DX 25060, 25062; (DX 25060, 25062) + (DX 3371, 3501-3569, 3572, 3581, 5363);
2.03	with glomerulosclerosis	DX 25040, 25042; (DX 25040, 25042) + (DX 5811, 58181, 5821, 587, 7910);
2.04	with vascular disease (peripheral, cardiovascular, or cerebral)	DX 25070, 25072; STAGE 1.04-2.03 + (DX 43300, 43310, 43320, 43330, 43380, 43390, 43400, 43410, 43490, 44381, 70714-70715, 4139 OR DXCAT CVS13) ; (DX 25070, 25072) + (DX 43300, 43310, 43320, 43330, 43380, 43390, 43400, 43410, 43490, 44381, 70714-70715, 4139 OR DXCAT CVS13);
2.05	with cellulitis	STAGE 1.04-2.04 + (DX 37313, 37531, 38010-38016, 37601, 4572, 4781, 5283, 5285, 566, 6040, 6072, 6084, 6110, 6163-6164, 68100-6829, 683, 69589);
2.06	with pyelonephritis	STAGE 1.04-2.05 + DX 59000-5909;
2.07	with gangrenous infection	(DX 25061, 25063, 25071, 25073, 25081, 25083) + DX 7854;
2.08	with osteomyelitis	STAGE 1.04-2.07 + GROUP OSTEOMYELIT;
3.01	with renal failure	STAGE 1.04-2.08 + (GROUP REN_FAIL_ACU OR GROUP REN_FAIL_CHR);
3.02	with hyperosmolar state	DX 25020, 25022;
3.03	with ketoacidosis	DX 25010, 25012;
3.04	with acute myocardial infarction	STAGE 2.04 + GROUP AMI;
3.05	with acute cerebral vascular accident	(STAGE 2.04, 3.04) + (DX 430, 431, 4320-4321, 4329, 43301, 43311, 43321, 43331, 43381, 43391, 43401, 43411, 43491, 436);
3.06	with sepsis	STAGE 2.05-3.05 + GROUP SEPSIS; DX 25080 + GROUP SEPSIS; DX 25082 + GROUP SEPSIS;
3.07	with coma	DX 25030, 25032;
3.08	with hyperosmolar coma	STAGE 3.02 + GROUP COMA;

Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: END05

Etiology:

DXCat Label: Diabetes Mellitus Type 2 and Hyperglycemic States

Metabolic

Stage Description

ICD-9-CM Codes

3.09	with shock	STAGE 3.01-3.08 + (GROUP SHOCKC OR GROUP SHOCKN) ; DX 25080 + (GROUP SHOCKC OR GROUP SHOCKN) ; DX 25082 + (GROUP SHOCKC OR GROUP SHOCKN);
4.00	with death	NO;

References:

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Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: END07

DXCat Label: Hyperthyroidism

Etiology:

Immune; Metabolic

Stage	Description	ICD-9-CM Codes
1.01	Primary Hyperthyroidism	DX 24200, 24210, 24220, 24230, 24240, 24280, 24290;
1.02	Secondary Hyperthyroidism	NO;
2.01	with infiltrating dermopathy	NO;
2.02	with infiltrating ophthalmopathy	STAGE 1.01 + (DX 3682, 37122, 37273, 3739, 37441 , 37863); DX 37621;
2.03	with compressive optic neuropathy	STAGE 1.01-2.02 + (DX 36841, 36851-36855, 36859, 36900-36925, 3694, 36960-3699); DX 37622;
2.04	with atrial fibrillation	STAGE 1.01-2.03 + (GROUP ARHTHYM_AFIB OR GROUP ARHTHYM_AFLU);
3.01	with thyroid storm	DX 24201, 24211, 24221, 24231, 24241, 24281, 24291;
3.02	with congestive heart failure	STAGE 1.01-3.02 + GROUP CHF_NON_HTN;
3.03	with respiratory failure	STAGE 1.01-3.02 + GROUP RESP_FAIL;
3.04	with coma	STAGE 1.01-3.03 + GROUP COMA;
3.05	with shock	STAGE 1.01-3.04 + (GROUP SHOCKC OR GROUP SHOCKN) ;
4.00	with death	NO;

References:

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Klein I, Becker DV, Levey GS. Treatment of hyperthyroid disease. Annals of Internal Medicine. 1994;121(4):281-288.

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Wartofsky L. Diseases of the thyroid. In: Fauci AS, Braunwald E, Isselbacher KJ, Wilson JD, Martin JB, Kasper DL, Hauser SL, Longo, DL, eds. Harrison's Principles of Internal Medicine. 14th ed. New York, NY: McGraw-Hill; 1998:2012-2035.

Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: END09

DXCat Label: Hypothyroidism

Etiology:

Congenital; Immune

Stage	Description	ICD-9-CM Codes
1.01	Asymptomatic primary hypothyroidism	DX 243, 2449;
1.02	Secondary hypothyroidism	DX 2440-2448;
2.01	Symptomatic hypothyroidism	STAGE 1.01-1.02 + (DX 3540, 37633, 7011, 7018 OR GROUP BRADYCARDIA OR GROUP HYPOTHERMIA OR GROUP ANEM_OTH_CHR OR GROUP ANEM_DEF_OTH OR GROUP ANEM_OTH_UN);
2.02	Cretinism	DX 2461;
2.03	with abdominal effusion	STAGE 1.01-2.02 + DX 56882;
2.04	with pericardial or pleural effusion	STAGE 1.01-2.03 + (DX 42090, 4239, 5119);
3.01	with congestive heart failure	STAGE 1.01-2.04 + GROUP CHF_NON_HTN;
3.02	with respiratory failure	STAGE 1.01-3.01 + GROUP RESP_FAIL;
3.03	with myxedema madness	STAGE 1.01-3.02 + (DX 2930, 2931, 2989);
3.04	with myxedema coma	STAGE 1.01-3.03 + GROUP COMA;
3.05	with shock	STAGE 1.01-3.04 + (GROUP SHOCKC OR GROUP SHOCKN) ;
4.00	with death	NO;

References:

Fitzgerald PA. Hypothyroidism and myxedema. In: Tierney Jr LM, McPhee SJ Papadakis MA, eds. Current Medical Diagnosis & Treatment. Stamford, CT: Appleton & Lange; 1998:1049-1051.

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Woeber KA. Subclinical thyroid dysfunction. Archives of Internal Medicine. 1997;157(10):1065-1068.

Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: ENT20

Etiology:

DXCat Label: Pharyngitis: Streptococcal

Infection, Bacterial

Stage	Description	ICD-9-CM Codes
1.01	Streptococcal pharyngitis or tonsillitis	DX 0340;
2.01	with cervical suppurative adenitis	STAGE 1.01 + (DX 2891, 2893, 683);
2.02	with peritonsillar or retropharyngeal abscess	STAGE 1.01-2.01 + (DX 475, 47821-47824, 47829);
2.03	with bronchopneumonia	STAGE 1.01-2.02 + GROUP PNEUMONIA;
2.04	with pharyngeal edema	STAGE 1.01-2.03 + DX 47825;
2.05	Streptococcal pharyngitis and scarlet fever	DX 0341;
3.01	Acute post-streptococcal glomerulonephritis	STAGE 1.01-2.04 + DX 5800;
3.02	with acute renal failure	STAGE 1.01-3.01 + GROUP REN_FAIL_ACU;
3.03	with meningitis	STAGE 1.01-3.02 + DX 3200;
3.04	with acute rheumatic fever	STAGE 1.01-3.03 + DX 390-3929;
3.05	with congestive heart failure	STAGE 1.01-3.04 + GROUP CHF_NON_HTN;
3.06	with sepsis	STAGE 1.01-3.05 + DX 0380;
3.07	with respiratory failure	STAGE 1.01-3.06 + GROUP RESP_FAIL;
3.08	with shock	STAGE 1.01-3.07 + (GROUP SHOCKC OR GROUP SHOCKN) ;
4.00	with death	NO;

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- Anonymous. Prevention of invasive group A streptococcal disease among household contacts of case-patients: is prophylaxis warranted? The Working Group on Prevention of Invasive Group A Streptococcal Infections. *JAMA*. 1998;279(15):1206-10.
- Bergstein JM. Acute poststreptococcal glomerulonephritis. In: Behrman RE, Kliegman RM, Arvin AM, Nelson WE, eds. *Nelson Textbook of Pediatrics*, 15th ed. Philadelphia, PA: WB Saunders; 1996:1487-1488.
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Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: GUS03

Etiology:

DXCat Label: Glomerulonephritis, Acute

Infection; Metabolic; Toxicologic

Stage	Description	ICD-9-CM Codes
1.01	Focal Glomerulonephritis	DX 5804, 5824, 5839;
2.01	Glomerulonephritis	STAGE 1.01 + DXCAT INF23; DX 5800, 58081-5809, 5820-5822, 58281-5829, 5832-5834, 58381, 5830-5831, 5836-5837, 58389;
2.02	with hypertension	STAGE 1.01-2.01 + (DX 40501, 40511, 40591);
2.03	with nephrotic syndrome	STAGE 1.01-2.02 + DX 5810-5819;
3.01	with renal failure	STAGE 1.01-2.03 + (GROUP REN_FAIL_ACU OR GROUP REN_FAIL_CHR);
3.02	with congestive heart failure	STAGE 1.01-3.01 + (GROUP CHF_HTNIVE OR GROUP CHF_NON_HTN);
3.03	with respiratory failure	STAGE 1.01-3.02 + GROUP RESP_FAIL;
3.04	with coma	STAGE 1.01-3.03 + GROUP COMA;
3.05	with shock	STAGE 1.01-3.04 + (GROUP SHOCKC OR GROUP SHOCKN) ;
4.00	with death	NO;

References:

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Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: GUS07

DXCat Label: Nephrotic Syndrome

Etiology:

Genetic (or hereditary); Immune; Metabolic; Toxicologic

Stage	Description	ICD-9-CM Codes
2.01	Nephrotic syndrome	DX 5810-5819;
2.02	with hypercholesteremia	STAGE 2.01 + GROUP HYPR_CHOLEST;
2.03	with hypertension	STAGE 2.01-2.02 + (DX 40501, 40511, 40591);
2.04	with deep vein thrombosis	STAGE 2.01-2.03 + GROUP DVT;
2.05	with renal vein thrombosis	STAGE 2.01-2.04 + DX 4533;
2.06	with peritonitis	STAGE 2.01-2.05 + (DX 5672, 5678, 5679, 56983, 6143-6146);
2.07	with chronic renal failure	STAGE 2.01-2.06 + GROUP REN_FAIL_CHR;
3.01	with acute renal failure	STAGE 2.01-2.07 + GROUP REN_FAIL_ACU;
3.02	with sepsis	STAGE 2.01-3.01 + GROUP SEPSIS;
3.03	with shock	STAGE 2.01-3.02 + (GROUP SHOCKC OR GROUP SHOCKN) ;
4.00	with death	NO;

References:

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Coe FL, Brenner BM. Approach to the patient with diseases of the kidneys and urinary tract. In: Fauci AS, Braunwald E, Isselbacher KJ, Wilson JD, Martin JB, Kasper DL, Hauser SL, Longo DL, eds. Harrison's Principles of Internal Medicine. 14th ed. New York, NY: McGraw-Hill; 1998:1495-1498.

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Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: HEM05

Etiology:

DXCat Label: Anemia: Iron Deficiency

Nutritional

Stage	Description	ICD-9-CM Codes
1.01	Iron-deficiency anemia	DX 2800, 2801, 2808, 2809;
2.01	with moderate anemia	NO;
2.02	with severe anemia	NO;
3.01	with congestive heart failure	STAGE 1.01 + GROUP CHF__NON_HTN;
4.00	with death	NO;

References:

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Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: HEM06

Etiology:

DXCat Label: Anemia: Sickle Cell

Genetic (or hereditary)

Stage	Description	ICD-9-CM Codes
1.01	Sickle cell trait	DX 2825;
1.02	Sickle cell trait with hematuria or hyposthenuria	STAGE 1.01 + (DX 59389, 5997);
2.01	Sickle beta+ thalassemia	DX 28241, 28268; STAGE 1.01-1.02 + DX 2824;
2.02	Hemoglobin SC disease	DX 28263;
2.03	Sickle cell anemia or sickle beta0 thalassemia	DX 28260, 28261, 28269;
2.04	with skin ulcers or vitreous hemorrhage	STAGE 1.01-2.03 + (DX 37923, 70710-70715, 70719, 7078, 7079);
2.05	with priapism	STAGE 1.01-2.04 + DX 6073;
2.06	with retinal detachment	STAGE 1.01-2.05 + DXCAT EYE07;
2.07	with hepatitis or choledocholithiasis or cholelithiasis	STAGE 1.01-2.06 + DXCAT HEP01;
2.08	with painful crisis	DX 28242, 28262, 28264; STAGE 2.01-2.07 + DX 28952;
2.09	with papillary necrosis	STAGE 1.01-2.08 + (DX 59000, 59001, 59010, 59011 , 59080, 59081);
2.10	with bacteremia	STAGE 1.01-2.09 + GROUP BACTEREMIA;
2.11	with bacterial pneumonia	STAGE 1.01-2.10 + DXCAT RES15;
2.12	with osteomyelitis	STAGE 1.01-2.11 + GROUP OSTEOMYELIT;
3.01	with aplastic crisis	STAGE 1.01-2.12 + (GROUP LEUKOPENIA) + (GROUP THRMBCYTPEN);
3.02	acute chest syndrome	STAGE 1.01-3.01 + (DX 5173 OR GROUP PULMEMB);
3.03	with renal failure	STAGE 1.01-3.02 + (GROUP REN_FAIL_ACU OR GROUP REN_FAIL_CHR);
3.04	with congestive heart failure	STAGE 1.01-3.03 + GROUP CHF_NON_HTN;
3.05	with cerebrovascular accidents	STAGE 1.01-3.04 + (DX 430, 431, 4320-4321, 4329, 43301, 43311, 43321, 43331, 43381, 43391, 43401, 43411, 43491, 436);
3.06	with sepsis	STAGE 1.01-3.05 + GROUP SEPSIS;
3.07	with respiratory failure	STAGE 1.01-3.06 + GROUP RESP_FAIL;
3.08	with shock	STAGE 1.01-3.07 + (GROUP SHOCKC OR GROUP SHOCKN) ;
4.00	with death	NO;

Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: HEM06

DXCat Label: Anemia: Sickle Cell

Etiology:

Genetic (or hereditary)

Stage Description

ICD-9-CM Codes

References:

- | |
|---|
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Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: INF23

DXCat Label: Rheumatic Fever

Etiology:

Immune; Infection, Bacterial

Stage	Description	ICD-9-CM Codes
1.01	Rheumatic fever with migratory polyarthritits	DX 390;
1.02	with erythema marginatum or subcutaneous nodules	STAGE 1.01 + (DX 6950, 7822);
1.03	with Sydenham's chorea	DX 3929;
2.01	with carditis	DX 3910, 3912-3920, 393, 3980-39890, 39899;
2.02	with valvular disease	DX 3940-3963, 3968-3979;
3.01	with endocarditis	DX 3911;
3.02	with congestive heart failure	DX 39891; STAGE 1.01-3.01 + GROUP CHF_NON_HTN;
3.03	with sepsis	STAGE 1.01-3.02 + GROUP SEPSIS;
3.04	with respiratory failure	STAGE 1.01-3.03 + GROUP RESP_FAIL;
3.05	with shock	STAGE 1.01-3.04 + (GROUP SHOCKC OR GROUP SHOCKN) ;
4.00	with death	NO;

References:

- Bernstein D. Rheumatic heart disease. In: Behrman RE, Kliegman RM, Arvin AM, Nelson WE, eds. Nelson Textbook of Pediatrics. 15th ed. Philadelphia, PA: WB Saunders; 1996:1347-1349.
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Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: MUS40

Etiology:

DXCat Label: Rheumatoid Arthritis

Immune

Stage	Description	ICD-9-CM Codes
1.01	Rheumatoid arthritis	DX 7140, 7142, 7144;
1.02	with uveitis	STAGE 1.01 + (DX 36400, 36404, 36411, 3643);
1.03	with fusion of metacarpophalangeal or interphalangeal joint spaces	STAGE 1.01-1.02 + DX 71854;
1.04	with carpal tunnel syndrome	STAGE 1.01-1.03 + DX 3540;
2.01	Juvenile onset rheumatoid arthritis	DX 71430-71433;
2.02	with anemia	STAGE 1.01-2.01 + (GROUP ANEM_OTH_CHR OR GROUP ANEM_DEF_OTH OR GROUP ANEM_OTH_UN);
2.03	with Felty's syndrome	DX 7141;
2.04	with pneumoconiosis or interstitial fibrosis	STAGE 1.01-2.03 + DX 515; DX 71481;
2.05	with cardiac conduction abnormalities or pericarditis or cardiomyopathy	STAGE 1.01-2.04 + (GROUP COND_BBBS OR DX 4200, 4258);
3.01	with vasculitides	STAGE 1.01-2.05 + DXCAT MUS45;
3.02	with amyloidosis	STAGE 1.01-3.01 + DX 2773;
3.03	with congestive heart failure	STAGE 1.01-3.02 + GROUP CHF_NON_HTN;
3.04	with respiratory failure	STAGE 1.01-3.03 + GROUP RESP_FAIL;
3.05	with shock	STAGE 1.01-3.04 + (GROUP SHOCKC OR GROUP SHOCKN) ;
4.00	with death	NO;

References:

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Wolfe F. The prognosis of rheumatoid arthritis: assessment of disease activity and disease severity in the clinic. *American Journal of Medicine.* 103(6A):12S-18S, 1997 Dec 29.

Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: RES02

DXCat Label: Asthma

Etiology:

Idiopathic; Immune

Stage	Description	ICD-9-CM Codes
1.01	Asymptomatic bronchial asthma	DX 49300, 49310, 49320, 49381-49382, 49390;
2.01	Mild intermittent bronchial asthma	DX 49302, 49312, 49322, 49392;
2.02	Mild persistent bronchial asthma	NO;
2.03	Moderate persistent bronchial asthma	NO;
3.01	Severe persistent bronchial asthma	NO;
3.02	Status asthmaticus or severe asthma	DX 49301, 49311, 49321, 49391;
3.03	with respiratory failure	STAGE 1.01-3.02 + GROUP RESP_FAIL;
3.04	with shock	STAGE 1.01-3.03 + (GROUP SHOCKC OR GROUP SHOCKN) ;
4.00	with death	NO;

References:

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Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: RES05

DXCat Label: Chronic Obstructive Pulmonary Disease

Etiology:

Toxicologic; Genetic (or hereditary)

Stage	Description	ICD-9-CM Codes
1.01	Chronic bronchitis	DX 4910-49120, 4918-4919;
1.02	Acute exacerbation of chronic bronchitis	DX 49121;
2.01	Chronic obstructive pulmonary disease, mild	DX 496;
2.02	Chronic obstructive pulmonary disease, moderate	NO;
2.03	Chronic obstructive pulmonary disease, severe	NO;
3.01	Chronic obstructive pulmonary disease with pulmonary hypertension	STAGE 1.01-2.01 + (DX 4160, 4168);
3.02	Chronic obstructive pulmonary disease with cor pulmonale	STAGE 1.01-3.01 + GROUP COR_PULMONAL;
3.03	Chronic obstructive pulmonary disease with acute respiratory failure	STAGE 1.01-3.02 + GROUP RESP_FAIL;
3.04	with shock	STAGE 1.01-3.03 + (GROUP SHOCKC OR GROUP SHOCKN) ;
4.00	with death	NO;

References:

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Clinical Criteria with Description and ICD-9-CM codes

DXCat Number: RES09

DXCat Label: Emphysema

Etiology:

Genetic (or hereditary); Toxicologic

Stage	Description	ICD-9-CM Codes
1.01	Emphysema	DX 4920, 4928;
2.01	Moderately severe emphysema	NO;
2.03	Severe emphysema	NO;
3.01	with cor pulmonale	STAGE 1.01 + GROUP COR_PULMONAL;
3.02	with acute respiratory failure	STAGE 1.01-3.01 + GROUP RESP_FAIL;
3.03	with shock	STAGE 1.01-3.02 + (GROUP SHOCKC OR GROUP SHOCKN) ;
4.00	with death	NO;

References:

Anonymous. Strategies in preserving lung health and preventing COPD and associated diseases. The National Lung Health Education Program (NLHEP). Chest. 1995;113(2 Suppl):123S-163S.

Honig EG, Ingram Jr RH. Chronic bronchitis, emphysema, and airway obstruction. In: Fauci AS, Braunwald E, Isselbacher KJ, Wilson JD, Martin JB, Kasper DL, Hauser SL, Longo DL, eds. Harrison's Principles of Internal Medicine, 14th ed. New York, NY: McGraw-Hill; 1998:1451-1460.

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