Supplementary Table 1. ICD9 codes used to identify underlying medical conditions

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| --- | --- | --- | --- |
| ICD9 Code | | | ICD9 condition name |
| Cardiac Disease | | | |
| 093  112.81  130.3  391  392  393-398  402  404  410-414  415  416  417  421  423  424  425  427  428  429  440  442  443  444  446  447  745  746  747  997.1  V42.1  V43.3  V45.0  V45.81  V45.82 | | Cardiovascular syphilis  Candidal endocarditis  Myocarditis due to toxoplasmosis  Rheumatic fever with heart involvement  Rheumatic chorea  Chronic rheumatic heart disease  Hypertensive heart disease  Hypertensive heart and chronic kidney disease  Ischemic heart disease  Acute pulmonary heart disease  Chronic pulmonary heart disease  Other diseases of pulmonary circulation  Acute and subacute endocarditis  Other diseases of pericardium  Other diseases of endocardium  Cardiomyopathy  Cardiac dysrhythmias  Heart Failure  Ill-defined descriptions and complications of heart disease  Atherosclerosis  Other aneurysm  Other peripheral vascular disease  Arterial embolism and thrombosis  Polyarteritis nodosa and allied conditions  Other disorders of arteries and arterioles  Bulbus cordis anomalies and anomalies of cardiac septal closure  Other congenital anomalies of heart  Other congenital anomalies of circulatory system  Cardiac complications, not elsewhere classified  Heart replaced by transplant  Heart valve replaced by transplant  Cardiac device in situ  Aortocoronary bypass status  Percutaneous transluminal coronary angioplasty status | |
| Asthma | | | |
| 493 | | Asthma | |
| Other pulmonary disease | | | |
| |  | | --- | | 011  012  031.0  135  277.0  273.4  491  492  494  495  496  500  501  502  503  504  505  506  507.0  507.1  508  510  513  514  515  516  517  518.0  518.1  518.2  518.3  518.8  519.0  519.9  714.81  748.4  748.5  748.6  759.3  769  770  770.2  770.7  V42.6 | | | |  | | --- | | Pulmonary tuberculosis  Other respiratory tuberculosis  Diseases due to other mycobacteria, pulmonary  Sarcoidosis  Cystic Fibrosis  Alpha-1 anti-trypsin deficiency  Chronic Bronchitis  Emphysema  Bronchiectasis  Extrinsic allergic alveolitis  Chronic airway obstruction, not elsewhere classified  Coal workers pneumoconiosis  Asbestosis  Pneumoconiosis due to other silica or silicates  Pneumoconiosis due to other inorganic dust  Pneumonopathy due to inhalation of other dust  Pneumoconiosis, unspecified  Respiratory conditions due to chemical fumes and vapors  Pneumonitis due to inhalation of food or vomitus  Pneumonitis due to inhalation of oils and essences  Respiratory conditions due to other and unspecified external agents  Empyema  Abscess of lung and mediastinum  Pulmonary Edema  Post inflammatory pulmonary fibrosis  Other alveolar and parietoalveolar pneumonopathy  Lung involvement in conditions classified elsewhere  Pulmonary Collapse  Interstitial edema  Compensatory emphysema  Pulmonary eosinophila  Other diseases of the lung, not elsewhere classified  Tracheostomy complications  Unspecified disease of respiratory system  Rheumatoid lung  Congenital cystic lung  Agenesis, hypoplasia, and dysplasia of lung  Other congenital anomalies of lung  Situs inversus  Respiratory distress syndrome (in perinatal period)  Other respiratory conditions of fetus and newborn  Interstitial emphysema and related conditions (of fetus and newborn)  Chronic respiratory disease arising in the perinatal period (of fetus and newborn)  Lung Replaced by transplant | | |
| **Renal Disease** | | | |
| 285.21  403   |  | | --- | | 581  582  583  585  586  587  588.0  588.1  590.0  593.8  V451  V56 | | | Anemia in chronic kidney disease  Hypertensive renal disease   |  | | --- | | Nephrotic syndrome  Chronic glomerulonephritis  Nephritis and nephropathy, not specified as acute or chronic  Chronic kidney disease  Renal Failure, unspecified  Renal sclerosis, unspecified  Renal osteodystrophy  Nephrogenic diabetes insipidus  Chronic pyelonephritis  Other specified disorders of kidney and ureter  Renal dialysis  Encounter for dialysis and dialysis catheter care | | |
| **Hemoglobinopathies** | | | |
| |  | | --- | | 282  283  284 | | | |  | | --- | | Hereditary hemolytic anemias  Acquired hemolytic anemias  Aplastic anemia | | |
| **HIV/AIDS** | | | |
| 042  043  044  V08 | | Human immunodeficiency disease  Human immunodeficiency disease  Human immunodeficiency disease  Asymptomatic human immunodeficiency virus infection status | |
| **Immunosuppression** | | | |
| 136.3  279  280.0  288.1  288.2  289.4  289.5  289.89   |  |  | | --- | --- | | 555  556  710.0  710.2  710.4  714  963.1  996.8  V42.0  V42.1  V42.2 V42.4  V42.6  V42.7  V42.8  V42.9 | | |  | | | Pneumocystosis   |  | | --- | | Disorders involving immune mechanism  Agranulocytosis  Functional disorders of polymorphonuclear neutrophils  Genetic anomalies of leukocytes  Hypersplenism  Other diseases of spleen  Other specified disorders of blood and blood-forming organs  Regional enteritis  Ulcerative colitis  Systemic lupus erythematosus  Sicca syndrome  Polymyositis  Rheumatoid arthritis and other inflammatory polyarthropathies  Antineoplastic and immunosuppressive drugs  Complications of transplanted organ  Kidney transplant  V42.1 Heart transplant  Heart valve transplant  Bone transplant  Lung transplant  Liver transplant  Other organ transplant  Unspecified organ or tissue transplant | | |
| **Malignancy** | | | |
| 140-208  235-238  960.7  V58.0  V58.1 | | Neoplasms  Neoplasms of uncertain behavior  Antineoplastic antibiotics  Encounter for radiotherapy  Encounter for chemotherapy and immunotherapy for neoplastic conditions | |
| **Diabetes** | | | |
| |  | | --- | | 250  251  648.0  357.2  362.0  362.11  366.41 | | | |  | | --- | | Diabetes Mellitus  Other disorders of pancreatic internal secretion  Diabetes mellitus-current condition classified elsewhere  Polyneuropathy in diabetes  Diabetic retinopathy  Diabetic retinopathy  Diabetic cataract | | |
| **Other metabolic disorders** | | | |
| |  | | --- | | 255  270  271  272  277 | | | Disorder of adrenal glands  Disorders of amino acid transport and metabolism  Disorders of carbohydrate transport and metabolism  Disorders of lipoid metabolism  Other and unspecified disorders of metabolism | |
| **Obesity** | | | |
| 278 | | Obesity | |
| **Liver Disease** | | | |
| 571  572.1-527.8 | | Chronic liver disease and cirrhosis  Sequelae of chronic liver disease | |
| **Neurologic and neuromuscular Disorders** | | | |
| 290  294.1  315  317-319  330.0, 333.4-333.9  331  333  334  335  340  341  343  344.0  345  348  356  358  359.1  359.2  438  741  742  756.4  780.3  783.42 | Dementias  Dementia in conditions classified elsewhere  Specific delays in development  Mental retardation  Extrapyramidal disease and abnormal movement disorders  Cerebral degenerations usually manifest in childhood  Other cerebral degenerations  Spinocerebellar disease  Anterior horn cell disease  Multiple sclerosis  Other demyelinating diseases  Infantile cerebral palsy  Quadriplegia and quadriparesis  Epilepsy and recurrent seizures  Other conditions of the brain  Hereditary and idiopathic peripheral neuropathy  Myasthenia gravis  Hereditary progressive muscular dystrophy  Myotonic disorders  Dementia and stroke  Spina bifida  Other congenital anomalies of the nervous system  Chondrodystrophy  Convulsions  Delayed milestones | | |
| **Cerebrovascular disease** | | | |
| |  | | --- | | 430  431  432  433  434  435  436  437  438 | | | | |  | | --- | | Subarachnoid hemorrhage  Intracerebral hemorrhage  Other/unspecified intracranial hemorrhage  Occlusion and stenosis of precerebral arteries  Occlusion of cerebral arteries  Transient cerebral ischemia  Acute, but ill-defined cerebrovascular disease  Other and ill-defined cerebrovascular disease  Late effects of cerebrovascular disease | |
| **Pregnancy complications** | | | |
| 640-648  767  768  771.0 | | | Complications related to pregnancy  Birth trauma  Intrauterine hypoxia and birth asphyxia  Infections specific to the perinatal period |
| **Prematurity** | | | |
| 644  765  776.6  362.20-362.27 | | | Early or threatened labor  Disorders relating to short gestation and low birth weight (except 765.29)  Anemia of prematurity  Retinopathy of prematurity |
| **Other congenital disorders** | | | |
| 758  759 | | | Chromosomal abnormalities  Other and unspecified congenital anomalies |