

# SUPPLEMENTAL MATERIAL

Spending on Cardiovascular Disease and Cardiovascular Risk Factors in the United States: 1996

– 2016

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## SUPPLEMENTAL METHODS

### Section 1: Data sources

The description of data sources below was drawn from prior studies.<sup>8-10</sup>

We used two data sources for this study. Health spending and volume data came from the Disease Expenditure (DEX) Project, produced by the Institute for Health Metrics and Evaluation. Epidemiologic data came from the Global Burden of Disease (GBD) 2017 study. We provide a brief overview of the methods used to produce the estimates and describe the alterations we made in detail.

#### Section 1A: Disease Expenditure data

The objective of the DEX project is to measure spending on healthcare in the United States, using granular, politically and clinically useful categories. In doing this, DEX provides estimates on US healthcare spending from 1996 through 2016, disaggregated into age-, sex-, type-of-care-, payer-, and year-specific categories, which when aggregated match the official US government estimates of spending, as reported in the National Health Expenditure Accounts (NHEA)<sup>42</sup>. These spending estimates are produced to reflect actual spending on health, also known as expenditure or payments, rather than charges made by medical providers. Spending estimates were adjusted for inflation using the economy-wide consumer price index (CPI) from the Bureau of Economic Analysis and were reported as 2016 dollars<sup>43</sup>. In addition to health spending, DEX also provides estimates on the volume of health goods or services received. Volume of health-related goods and services was measured as the number of visits, bed-days, or prescriptions filled.

The data used in generating DEX estimates were split into categories within four distinct frameworks: demography, epidemiology, type of good or service provided, and responsible payer.

1. **Demography:** Health spending and volume of goods and services were estimated separately for **each sex** across **19 age groups** (age 0, 1-4, 5-9, 10-14, ..., 80-84, and 85+ years).
2. **Epidemiology:** Health spending and volume of goods and services were estimated for 154 causes. The cause list for this project was based on the 140 causes from the GBD 2017 study<sup>15</sup>. An additional 17 causes were added to the DEX project to account for four risk factors, ten health conditions associated with spending but not burden, and three impairments that do not represent the underlying “causes” of health burden but rather are consequences of underlying causes. A description and full list of the 154 tracked “causes” and how they map to the International Classification of Disease 9<sup>th</sup> revision (ICD9) for years 1996 through 2015 and then to ICD 10<sup>th</sup> revision (ICD10) for year 2016 have been published elsewhere<sup>7</sup>.
3. **Types of goods or services:** Healthcare spending and volume of goods and services were estimated for **seven types of goods and services:** ambulatory care, inpatient care, emergency department care, long-term care, dental care, prescribed retail pharmaceuticals, general administration, and other. Definitions for these types of goods and services were designed to reflect the National Health Accounts (NHA) framework, which provides a taxonomy of categories (sometimes referred to as “functions”) that permit for international comparisons for how health care dollars are spent<sup>44</sup>. The US subscribes to the NHEA framework<sup>45</sup>, which has a slightly different taxonomy from the NHA. However, we disaggregated type of goods or services using the NHA framework because its taxonomy more clearly matches the types of goods of services we tracked.

- *Ambulatory care*: Ambulatory care included preventive, curative, and rehabilitative medical and psychiatric services, procedures, and medications provided in ambulatory care settings including physician’s offices, freestanding clinics and hospital outpatient departments. Emergency room visits and dental visits are excluded from ambulatory care. For ambulatory care, volume was measured as the number of visits.
- *Inpatient care*: Inpatient care included all spending in an inpatient hospital facility, whether preventive, curative, or rehabilitative, and included all medical goods, whether pharmaceuticals, diagnostics or devices, consumed by inpatients, regardless of their length of stay. For inpatient care, volume was measured as the number of days spent inpatient.
- *Emergency department care*: Emergency department care included curative and rehabilitative medical and psychiatric care provided at hospital-based emergency departments. We leveraged the Nationwide Emergency Department Sample (NEDS), the largest all-payer emergency department database that allows for national estimates of hospital-based ED visits, to capture both volume – measured as the total number of ED encounters – and spending. Emergency department care is not a distinct category in the NHEA. As a result, we leveraged the Medical Expenditure Panel Survey (MEPS) to parse out spending dollars from the NHEA categories of “physician” and “hospital” fractions to attribute to our emergency department care category. See Section 5 for more detail.
- *Nursing facility care*: Nursing facility care included nursing care provided in nursing homes or other residential institutions. Home-based care and palliative or hospice care provided in inpatient settings were excluded. For nursing facility care, volume was measured as the number of days spent in a nursing facility.
- *Dental care*: Dental care included preventative and curative health care at a dental facility. For dental care, volume was measured as the number of visits to a dental facility.
- *Prescribed retail pharmaceuticals*: Prescribed retail pharmaceuticals included all prescription medicines purchased in a retail pharmacy setting. This category excluded any medications consumed in inpatient, ambulatory, long-term and emergency settings during a visit. It also excluded over-the-counter (non-prescribed) medications and therapeutic devices. For prescribed retail pharmaceuticals, volume was measured as the number of prescriptions filled. The cause of illness is captured by the diagnoses reported by an individual who held the prescription, not by an Anatomical Therapeutic Chemical (ATC) classification system or medication code. An adjustment was made to this category to account for specialty drugs, which may be used infrequently but are expensive, resulting in larger estimates of spending than if data were only collected from MEPS.
- *General administration and net cost of insurance*: Administrative costs (such as health system governance costs and administrative costs borne by public and private insurance companies) were disaggregated by age, sex, year, and cause. There were no out-of-payment costs associated with general administration. Given the nature of this category, volume was not measured.
- *Other*: Other types of goods and services includes all over-the-counter (non-prescribed) pharmaceuticals, other retail medical durables (such as eye glasses and hearing aids), and non-medical retail durables (such as bandages). This category was not disaggregated by age, sex, or cause. Volume was not measured for this category.

4. **Payer:** Payments were made by either public insurance, private insurance, or out-of-pocket. Public insurance includes payments made by the government through programs such as by Medicare and Medicaid. Private insurance included those handled by private insurance companies, such as those provided by employers, and includes spending on insurance premiums. Out-of-pocket payments were those paid by the patients themselves or their families. These three payer groups were mutually exclusive and collectively exhaustive. For five of the seven types of care (inpatient, outpatient, ambulatory, dental, and emergency), data used for splitting spending by payer category was from the MEPS data sets. For nursing facility care, data from the Medicare Current Beneficiaries Survey (MCBS) was used to split spending across the three payer categories

Supplemental Table I provides a list of the primary data sources used in DEX. Supplemental Table II provides a broad overview of the DEX methodology. This methodology includes statistical models to generate a complete set of estimates, combine data sources, and adjust the data for known biases, as well as scaling the population-weighted estimates derived from the microestimates to reflect the total health expenditure for each type of care and year as documented in the NHEA. The methods used have been thoroughly vetted elsewhere and details can be found in the initial sources<sup>8</sup>.

### **Section 1B: Global Burden of Disease data**

The Global Burden of Disease study contains comprehensive estimates for disease burden for every country of the world. It contains information about mortality for 282 causes of death, morbidity for 354 diseases and injuries, and the morbidity and mortality attributed to over 84 risk factors. Estimates are made at global, national, and subnational levels and, while available at a more granular level than DEX estimates, can be aggregated into the same demographic and epidemiologic categories. Detailed methods for the GBD study<sup>17</sup>.

### **Section 1C: Focusing on cardiovascular disease and cardiovascular risk factors**

In this study, we extracted DEX spending and volume data and GBD prevalence data on ten cardiovascular disease health conditions (ischemic heart disease, cerebrovascular disease, atrial fibrillation/flutter, endocarditis, peripheral arterial disease, aortic aneurysm, rheumatic heart disease, cardiomyopathy, hypertensive heart disease, and an “other heart disease” category that includes predominantly non-rheumatic vascular disease), two cardiovascular risk factors (hypertension and hyperlipidemia), and the impairment that is heart failure. While DEX provides separate spending estimates for hypertensive heart disease, cardiomyopathy, and heart failure – this decision was made to match the GBD schema, which separately estimates sequelae and causes of mortality and morbidity – we aggregated spending estimates for these three causes of spending and listed them under the title of “heart failure.” We made this decision because the phrases “cardiomyopathy,” “hypertensive heart disease,” and “heart failure” are often used interchangeably in the clinical setting (ICD-9 codes in Supplemental Table III; asterisks indicate potential misattribution to heart failure in this study). GBD estimates the prevalence of sequelae separately from the prevalence of causes of morbidity and mortality, so this error is not present in the epidemiologic data. The ICD-9 and ICD-10 codes we used for these causes are listed in Supplemental Tables 4 and 5.

We also focus on adult cardiovascular spending only in this study, and in doing so we exclude estimates of cardiovascular spending on those younger than twenty years of age. We exclude the DEX estimates for general administration and net cost of insurance as well, as we are only interested in the dollars spent directly on the treatment of cardiovascular disease and cardiovascular risk factors.

## Section 2: Decomposition Analysis

The description of the decomposition analysis below was drawn from prior studies.<sup>10</sup>

We used the decomposition method described by Das Gupta and used by Dieleman et al. to decompose the contribution of each of the five factors to changes in health spending<sup>10,19</sup>. This method is based on the calculation of standardized rates in order to eliminate the compositional effects of all other factors in different years. Our data structure enabled the use of this method, since the outcome variable (spending) is the product of the five factors of interest. We calculate standardized rates for each factor by considering all possible combinations of other factors across time. For example, if only considering two factors, utilization (U) and price (P), and two years, 1996 and 2016, the price-standardized rate in each year would be:

$$1996 \text{ Price standardized rate: } \frac{P_{2016} + P_{1996}}{2} U_{1996}$$

$$2016 \text{ Price standardized rate: } \frac{P_{2016} + P_{1996}}{2} U_{2016}$$

The difference between the 1996 price-standardized rate and the 2016 price-standardized rate is the effect of utilization, or the contribution of utilization to changes in the outcome between 1996 and 2016 (below equation).

$$\text{Effect of Utilization} = \frac{P_{2016} + P_{1996}}{2} (U_{2016} - U_{1996})$$

The decomposition for our purposes was performed using the expanded 5-factor equation with calculations adjusted to ensure internal consistency, described elsewhere<sup>46</sup>. The decomposition was completed for each of the condition, age and sex, and type of care stratified groups, and for every possible combination of years (an input into the equation which accounts for multiple populations, as described by Das Gupta)<sup>46</sup>. The impact of each driver can be aggregated to assess the impact of the driver for any condition, age and sex group, or type of care of interest. To calculate uncertainty, we performed the decomposition analysis 1,000 times for each of the 1,000 draws of input data. An outlier detection was conducted in order to stabilize the final decomposition estimates. For each driver and type of care, we compute modified z-score, where:

$$\text{Modified } z - \text{score} = \frac{X_{f,e,d} + \text{median}(X_{f,e})}{\text{MAD}(X_{f,e})} * 0.6745$$

where  $f$  is a specific function,  $e$  is a specific driver, and  $d$  is a draw. Using the threshold defined in Iglewics and Hoaglin (1993)<sup>47</sup>, the maximum modified z-score of each draw was computed and was dropped if the absolute computed value within the draw exceeded 3.5. This resulted in 109 of the 1,000 draws being dropped. The point estimate reported is the mean of the remaining 891 draws, while the uncertainty interval is the 2.5th and 97.5th percentile of the full set of 1,000 draws. The results are largely robust to excluding these outliers. When collapsing across cardiovascular cause and type of care, the average difference between the point estimate when including the outliers and when excluding them was \$17.6 million USD, or 1.3% of the point estimate reported in the paper.

Spending on aortic aneurysms was excluded from the decomposition analysis, because GBD provides mortality estimates and not prevalence estimates for this cause. Nursing facility care was excluded from the decomposition analysis, because these estimates were not available at the time of analysis.

## SUPPLEMENTAL TABLES

**Supplemental Table I List of primary sources**

Type of care	Macro spending data and years	Micro spending data and years	Micro volume data and years
Ambulatory	NHEA (1996 – 2016)	MEPS (1996 – 2016); SAMHSA (1998, 2002, 2004, 2005, 2009); MarketScan (2000, 2010 – 2015)	NAMCS (1996 – 2015); MarketScan (2000, 2010 - 2015)
Inpatient	NHEA (1996 – 2016)	NIS (1996 – 2016); MEPS (1996 – 2016), SAMHSA (1998, 2002, 2004, 2005, 2009); MarketScan (2000, 2010 - 2015)	NIS (1996 – 2016); MarketScan (2000, 2010 - 2015)
Emergency Department	NHEA (1996 – 2016)	NEDS (2006 – 2013; 2015-2016) MEPS (1996 – 2016);	NEDS (2006 – 2013; 2015-2016) MarketScan (2000, 2010-2015)
Nursing care	NHEA (1996 – 2016)	Medicare claims data (1999 – 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016); NNHS (1997, 1999, 2004); Medicaid (2000-2005, 2008, 2011, 2013); MarketScan (2000, 2010 - 2015); MCBS (1999 - 2012)	Medicare claims data (1999 – 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016); NNHS (1997, 1999, 2004); Medicaid (2000-2005, 2008, 2011, 2013); MarketScan (2000, 2010 - 2015);
Dental	NHEA (1996 – 2016)	MEPS (1996 – 2016)	MEPS (1996 – 2016)
Prescribed retail pharmaceuticals	NHEA (1996 – 2016)	MEPS (1996 – 2016) MarketScan (2000, 2010 - 2015)	MEPS (1996 – 2016)
Specialty drugs	NHEA (1996 – 2016)	IQVIA specialty drug list (2010-2018)	IQVIA specialty drug list (2010-2018)

**Supplemental Table II Summary of steps taken to get to final DEX estimates**

Step	Types of care	Motivation	Effect
<b>Format data</b>	Ambulatory, inpatient, emergency department, nursing care, dental, prescribed retail pharmaceuticals	To enable all data sources to go through same statistical machinery	All data were structured in the same manner, and variable names and variable formats were systematized across all data sources used
<b>Bootstrap</b>	Ambulatory, inpatient, emergency department, nursing care, dental, prescribed retail pharmaceuticals	To obtain 1,000 bootstrap samples upon which all other steps could be run independently, in order to quantify uncertainty	1,000 samples were created for analysis based on survey-adjusted bootstrapping methods
<b>De-truncation</b>	Ambulatory (spending data only), emergency department (spending data only), prescribed retail pharmaceuticals	To estimate more detailed four and five-digit ICD-9 and ICD-10 diagnoses from the three-digit diagnoses recorded in Medical Expenditure Panel Survey (MEPS)	Variation within each bootstrap draw and across draws for data from MEPS was increased



<b>Redistribution</b>	Ambulatory, inpatient, emergency department, nursing care, prescribed retail pharmaceuticals	To attribute all spending and volumes to causes that represent the true underlying reason for a health care encounter	Spending and volume originally attributed to ICD-9 and ICD-10 codes that do not map to GBD causes were assigned to GBD causes based on redistribution packages developed by the IHME GBD research. This redistribution was designed to take into account age and sex. While each cause is impacted differently by the redistribution process, spending per cause, measured at the age, sex, type, and year level, goes up or stays the same, while spending attributed to “garbage codes” is removed
<b>Mapping</b>	Ambulatory, inpatient, emergency department, nursing care, dental, prescribed retail pharmaceuticals	To divide spending into 158 medically important and policyrelevant categories	Causes were aggregated from ICD-9 codes to 154 GBD causes, leading to more data for each cause-, year-, age-, sex-, typecombination
<b>Injury adjustment</b>	Ambulatory, inpatient, emergency department, nursing care, prescribed retail pharmaceuticals	To have all spending and volume due to injuries be defined by external cause of injury codes, rather than less actionable nature of injury codes	All spending attributed to injuries was defined by the external cause of injury

<b>Comorbidity adjustment</b>	Ambulatory, inpatient, emergency department, nursing care, prescribed retail pharmaceuticals	To redistribute resources toward the underlying cause of the health care spending, rather than merely the primary diagnosis	Spending was moved from some causes to others, based on whether, on average, the cause leads to excess spending (as comorbidity) or is a primary diagnosis that has spending increased by excess spending on comorbidities
<b>Age-splitting</b>	Nursing care	To have Medicare nursing care claims data be consistent with all other data sources, as Medicare aggregates younger ages to ensure patient privacy	Charges captured in Medicare claims were split up from larger age bins into the age bins used in the study
<b>Inpatient and emergency department charges-to-payments adjustment</b>	Inpatient, emergency department	To estimate total inpatient spending from the inpatient facility charges report in the National Inpatient Sample and the Nationwide Emergency Department Sample	Inpatient and emergency department spending estimates were made smaller than originally reported in National Inpatient Sample and Nationwide Emergency Sample, respectively, based on cause, year, payer-specific payment to charge ratios
<b>Ambulatory physician visits to total visits</b>	Ambulatory	To estimate the total number of ambulatory visits from the National Ambulatory Medical Care Survey, which does not include non-physician visits.	Ambulatory visit estimates were made larger than originally reported in the National Ambulatory Medical Care Survey, based on cause, age, sex, and year physician physician visit to total ambulatory visit ratios

<b>Emergency department hospitalization encounter adjustment</b>	Emergency department	To disentangle the spending on emergency department care from the spending on inpatient care for patients who are admitted to the hospital through the emergency department	Emergency department spending estimates are larger than originally reported in the Medical Expenditure Panel Survey, and inpatient spending is less than originally reported in the National Inpatient Sample
<b>Completing the series</b>	Ambulatory, inpatient, emergency department, nursing care, dental, prescribed retail pharmaceuticals	To have estimates for years in which data do not exist, to obtain estimates for spending that are missed due to survey designs, and to have estimates that are appropriately consistent across age and time	Multiple data sources were combined to leverage strengths across data sources, such that every type-, age-, year-, cause-, and sex-combination was estimated and “smooth” series were produced
<b>Nursing-care adjustment</b>	Nursing care	To estimate nationally representative spending and volume estimates for short- and long-term stays at nursing homes	Three data sources were leveraged together, two using linear regression, to create nationally representative spending and volume estimates for short-term and long-term nursing facility care

<b>Specialty drug adjustment</b>	Prescribed retail pharmaceuticals	To address the undersampling of people who spend large amounts on specialty drugs for rare conditions in the Medical Expenditure Panel Survey	Specialty drug spending data were collected from pharmaceutical consulting firms to provide more accurate estimates of prescribed retail pharmaceutical spending. These new spending estimates are larger than originally reported in the Medical Expenditure Panel Survey
<b>Mental Health adjustment</b>	Ambulatory, inpatient	To address the undersampling of mental health and substance abuse specialty facilities and create mental health and substance abuse health care spending aggregates that are commensurate with official US government estimates	Spending and volume on mental illnesses were increased, relative to non-mental illness causes, for the ambulatory and inpatient types of care
<b>Scaling</b>	Ambulatory, inpatient, emergency department, nursing care, dental, prescribed retail pharmaceuticals	To match spending estimates that reflect the official US government numbers, as no data source offers complete census of health care spending	Estimates for spending were increased or decreased depending on type of care
<b>Payer-Specific Estimates</b>	Ambulatory, inpatient, emergency department, nursing care, dental, prescribed retail pharmaceuticals	To divide spending into three payers: private insurance, public insurance, and out-of-pocket	Regression analysis of data from the Medical Expenditure Panel Survey to produce cause-, age-, and year-specific payer ratios used to produce payer-specific estimates

**Supplemental Table III DEX Causes Being Assigned to Heart Failure**

DEX Cause	ICD-9 Code	ICD-9 Name
Cardiomyopathy	742	Coxsackie carditis*
Cardiomyopathy	7423	Coxsackie myocarditis*
Cardiomyopathy	422	Acute myocarditis
Cardiomyopathy	4220	Acute myocarditis in diseases classified elsewhere
Cardiomyopathy	4224	Other acute myocarditis
Cardiomyopathy	4225	Acute myocarditis in diseases classified elsewhere
Cardiomyopathy	4229	Other and unspecified acute myocarditis
Cardiomyopathy	42290	Acute myocarditis, unspecified
Cardiomyopathy	42291	Idiopathic myocarditis
Cardiomyopathy	42292	Septic myocarditis
Cardiomyopathy	42293	Toxic myocarditis
Cardiomyopathy	42299	Other acute myocarditis
Cardiomyopathy	425	Cardiomyopathy
Cardiomyopathy	4250	Endomyocardial fibrosis
Cardiomyopathy	4251	Hypertrophic cardiomyopathy
Cardiomyopathy	42511	Hypertrophic obstructive cardiomyopathy
Cardiomyopathy	42518	Other hypertrophic cardiomyopathy
Cardiomyopathy	4252	Obscure cardiomyopathy of Africa
Cardiomyopathy	4253	Endocardial fibroelastosis
Cardiomyopathy	4254	Other primary cardiomyopathies
Cardiomyopathy	4255	Alcoholic cardiomyopathy
Cardiomyopathy	4257	Nutritional and metabolic cardiomyopathy
Cardiomyopathy	4258	Cardiomyopathy in other diseases classified elsewhere
Cardiomyopathy	4259	Secondary cardiomyopathy, unspecified
Cardiomyopathy	4290	Myocarditis, unspecified*
Cardiomyopathy	4291	Myocardial degeneration*
Heart Failure	416	Chronic pulmonary heart disease
Heart Failure	4160	Primary pulmonary hypertension
Heart Failure	4162	Chronic pulmonary embolism
Heart Failure	4163	Chronic pulmonary heart disease unspecified
Heart Failure	4168	Other chronic pulmonary heart diseases
Heart Failure	4169	Chronic pulmonary heart disease unspecified
Heart Failure	428	Heart failure
Heart Failure	4280	Congestive heart failure, unspecified
Heart Failure	4281	Left heart failure
Heart Failure	4282	Systolic heart failure
Heart Failure	42820	Heart failure unspecified
Heart Failure	42821	Acute systolic heart failure
Heart Failure	42822	Chronic systolic heart failure
Heart Failure	42823	Acute on chronic systolic heart failure

Heart Failure	4283	Diastolic heart failure
Heart Failure	42830	Heart failure unspecified
Heart Failure	42831	Acute diastolic heart failure
Heart Failure	42832	Chronic diastolic heart failure
Heart Failure	42833	Acute on chronic diastolic heart failure
Heart Failure	4284	Combined systolic and diastolic heart failure
Heart Failure	42840	Heart failure unspecified
Heart Failure	42841	Acute combined systolic and diastolic heart failure
Heart Failure	42842	Chronic combined systolic and diastolic heart failure
Heart Failure	42843	Acute on chronic combined systolic and diastolic heart failure
Heart Failure	4286	Heart failure unspecified
Heart Failure	4287	Heart failure unspecified
Heart Failure	4288	Heart failure unspecified
Heart Failure	4289	Heart failure unspecified
Hypertensive Heart Disease	402	Hypertensive heart disease
Hypertensive Heart Disease	4020	Malignant hypertensive heart disease*
Hypertensive Heart Disease	40200	Hypertensive heart disease without heart failure*
Hypertensive Heart Disease	40201	Hypertensive heart disease with heart failure
Hypertensive Heart Disease	4021	Benign hypertensive heart disease*
Hypertensive Heart Disease	40210	Hypertensive heart disease without heart failure*
Hypertensive Heart Disease	40211	Hypertensive heart disease with heart failure
Hypertensive Heart Disease	4023	With congestive heart failure
Hypertensive Heart Disease	4027	Hypertensive heart disease with heart failure
Hypertensive Heart Disease	4029	Unspecified hypertensive heart disease
Hypertensive Heart Disease	40290	Hypertensive heart disease without heart failure*
Hypertensive Heart Disease	40291	Hypertensive heart disease with heart failure

\* indicate potential misattribution to heart failure in this study

**Supplemental Table IV Cardiovascular Diseases and Cardiovascular Risk Factors and Corresponding ICD-9 Codes**

Cause Name	ICD9 Codes	ICD9 Names
Atrial Fibrillation/Flutter	4273	Atrial fibrillation and flutter
	42731	Atrial fibrillation
	42732	Atrial flutter
Aortic Aneurysms	441	Aortic aneurysm and dissection
	4410	Dissection of aorta
	44100	Aortic aneurysm and dissection unspecified site
	44101	Aortic aneurysm and dissection thoracic
	44102	Aortic aneurysm and dissection abdominal
	44103	Aortic aneurysm and dissection thoracoabdominal
	4411	Thoracic aneurysm, ruptured
	4412	Thoracic aneurysm without mention of rupture
	4413	Abdominal aneurysm, ruptured
	4414	Abdominal aneurysm without mention of rupture
	4415	Aortic aneurysm of unspecified site, ruptured
	4416	Thoracoabdominal aneurysm, ruptured
	4417	Thoracoabdominal aneurysm, without mention of rupture
	4419	Aortic aneurysm of unspecified site without mention of rupture
Endocarditis	7422	Coxsackie endocarditis
	421	Acute and subacute endocarditis
	4210	Acute and subacute bacterial endocarditis
	4211	Acute and subacute infective endocarditis in diseases classified elsewhere
	4219	Acute endocarditis, unspecified
	424	Other diseases of endocardium
	4244	Other endocarditis, valve unspecified
	4245	Other endocarditis, valve unspecified
	4248	Pulmonary valve disorders
	4249	Endocarditis valve unspecified
	42490	Endocarditis, valve unspecified, unspecified cause
	42491	Endocarditis in diseases classified elsewhere
	42499	Other endocarditis, valve unspecified
Heart Failure	742	Coxsackie carditis
	7423	Coxsackie myocarditis
	422	Acute myocarditis
	4220	Acute myocarditis in diseases classified elsewhere
	4224	Other acute myocarditis
	4225	Acute myocarditis in diseases classified elsewhere

	4229	Other and unspecified acute myocarditis
	42290	Acute myocarditis, unspecified
	42291	Idiopathic myocarditis
	42292	Septic myocarditis
	42293	Toxic myocarditis
	42299	Other acute myocarditis
	425	Cardiomyopathy
	4250	Endomyocardial fibrosis
	4251	Hypertrophic cardiomyopathy
	42511	Hypertrophic obstructive cardiomyopathy
	42518	Other hypertrophic cardiomyopathy
	4252	Obscure cardiomyopathy of Africa
	4253	Endocardial fibroelastosis
	4254	Other primary cardiomyopathies
	4255	Alcoholic cardiomyopathy
	4257	Nutritional and metabolic cardiomyopathy
	4258	Cardiomyopathy in other diseases classified elsewhere
	4259	Secondary cardiomyopathy, unspecified
	4290	Myocarditis, unspecified
	4291	Myocardial degeneration
	416	Chronic pulmonary heart disease
	4160	Primary pulmonary hypertension
	4162	Chronic pulmonary embolism
	4163	Chronic pulmonary heart disease unspecified
	4168	Other chronic pulmonary heart diseases
	4169	Chronic pulmonary heart disease unspecified
	428	Heart failure
	4280	Congestive heart failure, unspecified
	4281	Left heart failure
	4282	Systolic heart failure
	42820	Heart failure unspecified
	42821	Acute systolic heart failure
	42822	Chronic systolic heart failure
	42823	Acute on chronic systolic heart failure
	4283	Diastolic heart failure
	42830	Heart failure unspecified
	42831	Acute diastolic heart failure
	42832	Chronic diastolic heart failure
	42833	Acute on chronic diastolic heart failure
	4284	Combined systolic and diastolic heart failure
	42840	Heart failure unspecified
	42841	Acute combined systolic and diastolic heart failure
	42842	Chronic combined systolic and diastolic heart failure



	42843	Acute on chronic combined systolic and diastolic heart failure
	4286	Heart failure unspecified
	4287	Heart failure unspecified
	4288	Heart failure unspecified
	4289	Heart failure unspecified
	402	Hypertensive heart disease
	4020	Malignant hypertensive heart disease
	40200	Hypertensive heart disease without heart failure
	40201	Hypertensive heart disease with heart failure
	4021	Benign hypertensive heart disease
	40210	Hypertensive heart disease without heart failure
	40211	Hypertensive heart disease with heart failure
	4023	With congestive heart failure
	4027	Hypertensive heart disease with heart failure
	4029	Unspecified hypertensive heart disease
	40290	Hypertensive heart disease without heart failure
	40291	Hypertensive heart disease with heart failure
Ischemic Heart Disease	410	Acute myocardial infarction
	4100	Acute myocardial infarction of anterolateral wall
	41000	Acute myocardial infarction episode of care unspecified
	41001	Acute myocardial infarction initial episode of care
	41002	Acute myocardial infarction subsequent episode of care
	4101	Acute myocardial infarction of other anterior wall
	41010	Acute myocardial infarction episode of care unspecified
	41011	Acute myocardial infarction initial episode of care
	41012	Acute myocardial infarction subsequent episode of care
	4102	Acute myocardial infarction of inferolateral wall
	41020	Acute myocardial infarction episode of care unspecified
	41021	Acute myocardial infarction initial episode of care
	41022	Acute myocardial infarction subsequent episode of care
	4103	Acute myocardial infarction of inferoposterior wall
	41030	Acute myocardial infarction episode of care unspecified
	41031	Acute myocardial infarction initial episode of care
	41032	Acute myocardial infarction subsequent episode of care

	4104	Acute myocardial infarction of other inferior wall
	41040	Acute myocardial infarction episode of care unspecified
	41041	Acute myocardial infarction initial episode of care
	41042	Acute myocardial infarction subsequent episode of care
	4105	Acute myocardial infarction of other lateral wall
	41050	Acute myocardial infarction episode of care unspecified
	41051	Acute myocardial infarction initial episode of care
	41052	Acute myocardial infarction subsequent episode of care
	4106	True posterior wall infarction
	41060	Acute myocardial infarction episode of care unspecified
	41061	Acute myocardial infarction initial episode of care
	41062	Acute myocardial infarction subsequent episode of care
	4107	Subendocardial infarction
	41070	Acute myocardial infarction episode of care unspecified
	41071	Acute myocardial infarction initial episode of care
	41072	Acute myocardial infarction subsequent episode of care
	4108	Acute myocardial infarction of other specified sites
	41080	Acute myocardial infarction episode of care unspecified
	41081	Acute myocardial infarction initial episode of care
	41082	Acute myocardial infarction subsequent episode of care
	4109	Acute myocardial infarction of unspecified site
	41090	Acute myocardial infarction episode of care unspecified
	41091	Acute myocardial infarction initial episode of care
	41092	Acute myocardial infarction subsequent episode of care
	411	Other acute and subacute forms of ischemic heart disease
	4110	Postmyocardial infarction syndrome
	4111	Intermediate coronary syndrome
	4118	Other acute and subacute forms of ischemic heart disease

	41181	Acute coronary occlusion without myocardial infarction
	41189	Other acute and subacute forms of ischemic heart disease other
	4119	Other acute and subacute forms of ischaemic heart disease
	412	Old myocardial infarction
	4120	Old myocardial infarction
	4129	Old myocardial infarction
	413	Angina pectoris
	4130	Angina decubitus
	4131	Prinzmetal angina
	4139	Other and unspecified angina pectoris
	414	Other forms of chronic ischemic heart disease
	4140	Coronary atherosclerosis
	41400	Other forms of chronic ischemic heart disease of unspecified type of vessel, native or graft
	41401	Other forms of chronic ischemic heart disease of native coronary artery
	41402	Other forms of chronic ischemic heart disease of autologous vein bypass graft
	41403	Other forms of chronic ischemic heart disease of nonautologous biological bypass graft
	41404	Other forms of chronic ischemic heart disease of artery bypass graft
	41405	Other forms of chronic ischemic heart disease of unspecified bypass graft
	41406	Other forms of chronic ischemic heart disease of native coronary artery of transplanted heart
	41407	Other forms of chronic ischemic heart disease of bypass graft (artery) (vein) of transplanted heart
	4141	Aneurysm and dissection of heart
	41410	Aneurysm of heart (wall)
	41411	Aneurysm of coronary vessels
	41412	Dissection of coronary artery
	41419	Other aneurysm of heart
	4142	Chronic total occlusion of coronary artery
	4143	Coronary atherosclerosis due to lipid rich plaque
	4144	Coronary atherosclerosis due to calcified coronary lesion
	4145	Chronic ischemic heart disease, unspecified
	4148	Other specified forms of chronic ischemic heart disease

	4149	Chronic ischemic heart disease, unspecified
	V173	Family history of ischemic heart disease
	V810	Screening for ischemic heart disease
Other Cardiovascular Disease	417	Other diseases of pulmonary circulation
	4170	Arteriovenous fistula of pulmonary vessels
	4171	Aneurysm of pulmonary artery
	4178	Other specified diseases of pulmonary circulation
	4179	Unspecified disease of pulmonary circulation
	420	Acute pericarditis
	4200	Acute pericarditis in diseases classified elsewhere
	4201	Acute pericarditis
	4209	Other and unspecified acute pericarditis
	42090	Acute pericarditis, unspecified
	42091	Acute idiopathic pericarditis
	42099	Other acute pericarditis
	423	Other diseases of pericardium
	4231	Adhesive pericarditis
	4232	Constrictive pericarditis
	4233	Cardiac tamponade
	4237	Other diseases of pericardium
	4238	Other specified diseases of pericardium
	4239	Unspecified disease of pericardium
	4240	Mitral valve disorders
	4241	Aortic valve disorders
	4242	Tricuspid valve disorders, specified as nonrheumatic
	4243	Pulmonary valve disorders
	442	Other aneurysm
	4420	Aneurysm of artery of upper extremity
	4421	Aneurysm of renal artery
	4422	Aneurysm of iliac artery
	4423	Aneurysm of artery of lower extremity
	4424	
	4428	Aneurysm of other specified artery
	44281	Aneurysm of artery of neck
	44282	Aneurysm of subclavian artery
	44283	Aneurysm of splenic artery
	44284	Aneurysm of other visceral artery
	44289	Aneurysm of other specified artery
	4429	Aneurysm of unspecified site
	447	Other disorders of arteries and arterioles
	4470	Arteriovenous fistula, acquired
	4471	Stricture of artery

	4472	Rupture of artery
	4473	Hyperplasia of renal artery
	4474	Celiac artery compression syndrome
	4475	Necrosis of artery
	4476	Arteritis, unspecified
	4477	Aortic ectasia
	44770	Other disorders of arteries and arterioles unspecified site
	44771	Thoracic aortic ectasia
	44772	Abdominal aortic ectasia
	44773	Thoracoabdominal aortic ectasia
	4478	Other specified disorders of arteries and arterioles
	4479	Unspecified disorders of arteries and arterioles
	448	Disease of capillaries
	4480	Hereditary hemorrhagic telangiectasia
	4481	Nevus, non-neoplastic
	4489	Other and unspecified capillary diseases
	449	Septic arterial embolism
	450	Other and unspecified capillary diseases
	451	Phlebitis and thrombophlebitis
	4510	Phlebitis and thrombophlebitis of superficial vessels of lower extremities
	4511	Phlebitis and thrombophlebitis of deep veins of lower extremities
	45111	Phlebitis and thrombophlebitis of femoral vein (deep) (superficial)
	45119	Phlebitis and thrombophlebitis other
	4512	Phlebitis and thrombophlebitis of lower extremities, unspecified
	4513	Phlebitis and thrombophlebitis of unspecified site
	4515	Phlebitis and thrombophlebitis of unspecified site
	4517	Phlebitis and thrombophlebitis of unspecified site
	4518	Phlebitis and thrombophlebitis of other sites
	45181	Phlebitis and thrombophlebitis of iliac vein
	45182	Phlebitis and thrombophlebitis of superficial veins of upper extremities
	45183	Phlebitis and thrombophlebitis of deep veins of upper extremities
	45184	Phlebitis and thrombophlebitis of upper extremities, unspecified
	45189	Phlebitis and thrombophlebitis of other sites
	4519	Phlebitis and thrombophlebitis of unspecified site
	452	Portal vein thrombosis

	4520	Portal vein thrombosis
	4523	Portal vein thrombosis
	4524	Portal vein thrombosis
	4529	Portal vein thrombosis
	453	Other venous embolism and thrombosis
	4530	Budd-chiari syndrome
	4531	Thrombophlebitis migrans
	4532	Other venous embolism and thrombosis of inferior vena cava
	4533	Other venous embolism and thrombosis of renal vein
	4534	Acute venous embolism and thrombosis of deep vessels of lower extremity
	45340	Acute venous embolism and thrombosis of unspecified deep vessels of lower extremity
	45341	Acute venous embolism and thrombosis of deep vessels of proximal lower extremity
	45342	Acute venous embolism and thrombosis of deep vessels of distal lower extremity
	4535	Chronic venous embolism and thrombosis of deep vessels of lower extremity
	45350	Chronic venous embolism and thrombosis of unspecified deep vessels of lower extremity
	45351	Chronic venous embolism and thrombosis of deep vessels of proximal lower extremity
	45352	Chronic venous embolism and thrombosis of deep vessels of distal lower extremity
	4536	Venous embolism and thrombosis of superficial vessels of lower extremity
	4537	Chronic venous embolism and thrombosis of other specified vessels
	45371	Chronic venous embolism and thrombosis of superficial veins of upper extremity
	45372	Chronic venous embolism and thrombosis of deep veins of upper extremity
	45373	Chronic venous embolism and thrombosis of upper extremity, unspecified
	45374	Chronic venous embolism and thrombosis of axillary veins
	45375	Chronic venous embolism and thrombosis of subclavian veins
	45376	Chronic venous embolism and thrombosis of internal jugular veins

	45377	Chronic venous embolism and thrombosis of other thoracic veins
	45379	Chronic venous embolism and thrombosis of other specified veins
	4538	Acute venous embolism and thrombosis of other specified veins
	45381	Acute venous embolism and thrombosis of superficial veins of upper extremity
	45382	Acute venous embolism and thrombosis of deep veins of upper extremity
	45383	Acute venous embolism and thrombosis of upper extremity, unspecified
	45384	Acute venous embolism and thrombosis of axillary veins
	45385	Acute venous embolism and thrombosis of subclavian veins
	45386	Acute venous embolism and thrombosis of internal jugular veins
	45387	Acute venous embolism and thrombosis of other thoracic veins
	45389	Acute venous embolism and thrombosis of other specified veins
	4539	Other venous embolism and thrombosis of unspecified site
	454	Varicose veins of lower extremities
	4540	Varicose veins of lower extremities with ulcer
	4541	Varicose veins of lower extremities with inflammation
	4542	Varicose veins of lower extremities with ulcer and inflammation
	4548	Varicose veins of lower extremities with other complications
	4549	Asymptomatic varicose veins
	456	Varicose veins of other sites
	4563	Sublingual varices
	4564	Scrotal varices
	4565	Pelvic varices
	4566	Vulval varices
	4568	Varices of other sites
	4569	Varices of other sites
	457	Noninfectious disorders of lymphatic channels
	4571	Other lymphedema
	4578	Other noninfectious disorders of lymphatic channels

	4579	Unspecified noninfectious disorder of lymphatic channels
	459	Other disorders of circulatory system
	4591	Postphlebotic syndrome
	45910	Postphlebotic syndrome without complications
	45911	Postphlebotic syndrome with ulcer
	45912	Postphlebotic syndrome with inflammation
	45913	Postphlebotic syndrome with ulcer and inflammation
	45919	Postphlebotic syndrome with other complication
	4592	Compression of vein
	4593	Chronic venous hypertension (idiopathic)
	45930	Chronic venous hypertension without complications
	45931	Chronic venous hypertension with ulcer
	45932	Chronic venous hypertension with inflammation
	45933	Chronic venous hypertension with ulcer and inflammation
	45939	Chronic venous hypertension with other complication
Peripheral Arterial Disease	4402	Atherosclerosis of native arteries of the extremities
	44020	Atherosclerosis unspecified
	44021	Atherosclerosis with intermittent claudication
	44022	Atherosclerosis with rest pain
	44023	Atherosclerosis with ulceration
	44024	Atherosclerosis with gangrene
	44029	Other atherosclerosis of native arteries of the extremities
	4404	Chronic total occlusion of artery of the extremities
	4408	Atherosclerosis of other specified arteries
	4409	Generalized and unspecified atherosclerosis
	443	Other peripheral vascular disease
	4430	Raynaud's syndrome
	4431	Thromboangiitis obliterans [Buerger's disease]
	4432	Other arterial dissection
	44321	<b>Dissection of carotid artery</b>
	44322	<b>Dissection of iliac artery</b>
	44323	<b>Dissection of renal artery</b>
	44324	<b>Dissection of vertebral artery</b>
	44329	<b>Dissection of other artery</b>
	4438	Other specified peripheral vascular diseases
	44381	Peripheral angiopathy in diseases classified elsewhere
	44382	Erythromelalgia
	44389	Other specified peripheral vascular diseases
	4439	Peripheral vascular disease, unspecified
Rheumatic Heart Disease	391	Rheumatic fever with heart involvement



	3910	Acute rheumatic pericarditis
	3911	Acute rheumatic endocarditis
	3912	Acute rheumatic myocarditis
	3914	
	3918	Other acute rheumatic heart disease
	3919	Acute rheumatic heart disease, unspecified
	3920	Rheumatic chorea with heart involvement
	393	Chronic rheumatic pericarditis
	3930	
	3939	
	394	Diseases of mitral valve
	3940	Mitral stenosis
	3941	Rheumatic mitral insufficiency
	3942	Mitral stenosis with insufficiency
	3945	
	3949	Other and unspecified mitral valve diseases
	395	Diseases of aortic valve
	3950	Rheumatic aortic stenosis
	3951	Rheumatic aortic insufficiency
	3952	Rheumatic aortic stenosis with insufficiency
	3959	Other and unspecified rheumatic aortic diseases
	396	Diseases of mitral and aortic valves
	3960	Mitral valve stenosis and aortic valve stenosis
	3961	Mitral valve stenosis and aortic valve insufficiency
	3962	Mitral valve insufficiency and aortic valve stenosis
	3963	Mitral valve insufficiency and aortic valve insufficiency
	3968	Multiple involvement of mitral and aortic valves
	3969	Mitral and aortic valve diseases, unspecified
	397	Diseases of other endocardial structures
	3970	Diseases of tricuspid valve
	3971	Rheumatic diseases of pulmonary valve
	3979	Rheumatic diseases of endocardium, valve unspecified
	398	Other rheumatic heart disease
	3980	Rheumatic myocarditis
	3988	
	3989	Other and unspecified rheumatic heart diseases
	39890	Rheumatic heart disease, unspecified
	39891	Rheumatic heart failure (congestive)
	39899	Other rheumatic heart diseases
Cerebrovascular Disease	430	Subarachnoid hemorrhage
	4300	Subarachnoid hemorrhage
	4301	Subarachnoid hemorrhage
	4304	Subarachnoid hemorrhage

	4306	Subarachnoid hemorrhage
	4309	Subarachnoid hemorrhage
	431	Intracerebral hemorrhage
	4310	Intracerebral hemorrhage
	4311	Intracerebral hemorrhage
	4312	Intracerebral hemorrhage
	4319	Intracerebral hemorrhage
	432	Other and unspecified intracranial hemorrhage
	4320	Nontraumatic extradural hemorrhage
	4321	Subdural hemorrhage
	4324	Unspecified intracranial hemorrhage
	4325	Unspecified intracranial hemorrhage
	4327	Unspecified intracranial hemorrhage
	4329	Unspecified intracranial hemorrhage
	433	Occlusion and stenosis of precerebral arteries
	4330	Occlusion and stenosis of basilar artery
	43300	Occlusion and stenosis of precerebral arteries without mention of cerebral infarction
	43301	Occlusion and stenosis of precerebral arteries with cerebral infarction
	4331	Occlusion and stenosis of carotid artery
	43310	Occlusion and stenosis of precerebral arteries without mention of cerebral infarction
	43311	Occlusion and stenosis of precerebral arteries with cerebral infarction
	4332	Occlusion and stenosis of vertebral artery
	43320	Occlusion and stenosis of precerebral arteries without mention of cerebral infarction
	43321	Occlusion and stenosis of precerebral arteries with cerebral infarction
	4333	Occlusion and stenosis of multiple and bilateral precerebral arteries
	43330	Occlusion and stenosis of precerebral arteries without mention of cerebral infarction
	43331	Occlusion and stenosis of precerebral arteries with cerebral infarction
	4338	Occlusion and stenosis of other specified precerebral artery
	43380	Occlusion and stenosis of precerebral arteries without mention of cerebral infarction
	43381	Occlusion and stenosis of precerebral arteries with cerebral infarction

	4339	Occlusion and stenosis of unspecified precerebral artery
	43390	Occlusion and stenosis of precerebral arteries without mention of cerebral infarction
	43391	Occlusion and stenosis of precerebral arteries with cerebral infarction
	434	Occlusion of cerebral arteries
	4340	Cerebral thrombosis
	43400	Occlusion of cerebral arteries without mention of cerebral infarction
	43401	Occlusion of cerebral arteries with cerebral infarction
	4341	Cerebral embolism
	43410	Occlusion of cerebral arteries without mention of cerebral infarction
	43411	Occlusion of cerebral arteries with cerebral infarction
	4343	Cerebral artery occlusion, unspecified with cerebral infarction
	4344	Cerebral artery occlusion, unspecified with cerebral infarction
	4346	Cerebral artery occlusion, unspecified with cerebral infarction
	4347	Cerebral artery occlusion, unspecified with cerebral infarction
	4349	Cerebral artery occlusion unspecified
	43490	Cerebral artery occlusion, unspecified without mention of cerebral infarction
	43491	Cerebral artery occlusion, unspecified with cerebral infarction
	435	Transient cerebral ischemia
	4350	Basilar artery syndrome
	4351	Vertebral artery syndrome
	4352	Subclavian steal syndrome
	4353	Vertebrobasilar artery syndrome
	4358	Other specified transient cerebral ischemias
	4359	Unspecified transient cerebral ischemia
	436	Acute, but ill-defined, cerebrovascular disease
	4360	Acute, but ill-defined, cerebrovascular disease
	4361	Acute, but ill-defined, cerebrovascular disease
	4363	Acute, but ill-defined, cerebrovascular disease
	4368	Acute, but ill-defined, cerebrovascular disease
	4369	Acute, but ill-defined, cerebrovascular disease
	437	Other and ill-defined cerebrovascular disease
	4370	Cerebral atherosclerosis

	4371	Other generalized ischemic cerebrovascular disease
	4372	Hypertensive encephalopathy
	4373	Cerebral aneurysm, nonruptured
	4374	Cerebral arteritis
	4375	Moyamoya disease
	4376	Nonpyogenic thrombosis of intracranial venous sinus
	4377	Transient global amnesia
	4378	Other ill-defined cerebrovascular disease
	4379	Unspecified cerebrovascular disease
	438	Late effects of cerebrovascular disease
	4380	Late effects of cerebrovascular disease cognitive deficits
	4381	Speech and language deficits
	43810	Late effects of cerebrovascular disease, speech and language deficit, unspecified
	43811	Late effects of cerebrovascular disease, aphasia
	43812	Late effects of cerebrovascular disease, dysphasia
	43813	Late effects of cerebrovascular disease, dysarthria
	43814	Late effects of cerebrovascular disease, fluency disorder
	43819	Late effects of cerebrovascular disease, other speech and language deficits
	4382	Hemiplegia/hemiparesis
	43820	Late effects of cerebrovascular disease, hemiplegia affecting unspecified side
	43821	Late effects of cerebrovascular disease, hemiplegia affecting dominant side
	43822	Late effects of cerebrovascular disease, hemiplegia affecting nondominant side
	4383	Monoplegia of upper limb
	43830	Late effects of cerebrovascular disease, monoplegia of upper limb affecting unspecified side
	43831	Late effects of cerebrovascular disease, monoplegia of upper limb affecting dominant side
	43832	Late effects of cerebrovascular disease, monoplegia of upper limb affecting nondominant side
	4384	Monoplegia of lower limb
	43840	Late effects of cerebrovascular disease, monoplegia of lower limb affecting unspecified side
	43841	Late effects of cerebrovascular disease, monoplegia of lower limb affecting dominant side
	43842	Late effects of cerebrovascular disease, monoplegia of lower limb affecting nondominant side

	4385	Other paralytic syndrome
	43850	Late effects of cerebrovascular disease, other paralytic syndrome affecting unspecified side
	43851	Late effects of cerebrovascular disease, other paralytic syndrome affecting dominant side
	43852	Late effects of cerebrovascular disease, other paralytic syndrome affecting nondominant side
	43853	Late effects of cerebrovascular disease, other paralytic syndrome, bilateral
	4386	Late effects of cerebrovascular disease alterations of sensations
	4387	Late effects of cerebrovascular disease disturbances of vision
	4388	Other late effects of cerebrovascular disease
	43881	Late effects of cerebrovascular disease apraxia
	43882	Late effects of cerebrovascular disease dysphagia
	43883	Late effects of cerebrovascular disease facial weakness
	43884	Late effects of cerebrovascular disease ataxia
	43885	Late effects of cerebrovascular disease vertigo
	43889	Other late effects of cerebrovascular disease
	4389	Unspecified late effects of cerebrovascular disease
	439	Unspecified late effects of cerebrovascular disease
	4396	Unspecified late effects of cerebrovascular disease
	V1254	Personal history of transient ischemic attack (TIA), and cerebral infarction without residual deficits
	V171	Family history of stroke (cerebrovascular)
Treatment of Hyperlipidemia	272	Disorders of lipid metabolism
	2720	Pure hypercholesterolemia
	2721	Pure hyperglyceridemia
	2722	Mixed hyperlipidemia
	2723	Hyperchylomicronemia
	2724	Other and unspecified hyperlipidemia
	2725	Lipoprotein deficiencies
	2726	Lipodystrophy
	2727	Lipidoses
	2728	Other disorders of lipid metabolism
	2729	Unspecified disorder of lipid metabolism
Treatment of Hypertension	401	Essential hypertension
	4010	Malignant essential hypertension
	4011	Benign essential hypertension
	4019	Unspecified essential hypertension
	405	Secondary hypertension

	4050	Malignant secondary hypertension
	40501	Malignant renovascular hypertension
	40509	Other malignant secondary hypertension
	4051	Benign secondary hypertension
	40511	Benign renovascular hypertension
	40519	Other benign secondary hypertension
	4059	Unspecified secondary hypertension
	40591	Unspecified renovascular hypertension
	40599	Other unspecified secondary hypertension
	458	Hypotension
	4588	Other specified hypotension
	4589	Hypotension unspecified
	7962	Elevated blood pressure reading without diagnosis of hypertension
	7963	Nonspecific low blood pressure reading
	V811	Screening for hypertension

**Supplemental Table V Cardiovascular Diseases and Cardiovascular Risk Factors and Corresponding ICD-10 Codes**

Cause Name	ICD10 Codes	ICD10 Names	
Atrial Fibrillation/Flutter	I48	Atrial fibrillation and flutter	
	I480	Paroxysmal atrial fibrillation	
	I481	Persistent atrial fibrillation	
	I482	Chronic atrial fibrillation	
	I483	Typical atrial flutter	
	I484	Atypical atrial flutter	
	I489	Unspecified atrial fibrillation and atrial flutter	
	I4891	Unspecified atrial fibrillation	
	I4892	Unspecified atrial flutter	
	Aortic Aneurysms	I71	Aortic aneurysm and dissection
I710		Dissection of aorta	
I7100		Dissection of unspecified site of aorta	
I7101		Dissection of thoracic aorta	
I7102		Dissection of abdominal aorta	
I7103		Dissection of thoracoabdominal aorta	
I711		Thoracic aortic aneurysm, ruptured	
I712		Thoracic aortic aneurysm, without rupture	
I713		Abdominal aortic aneurysm, ruptured	
I714		Abdominal aortic aneurysm, without rupture	
I715		Thoracoabdominal aortic aneurysm, ruptured	
I716		Thoracoabdominal aortic aneurysm, without rupture	
I718		Aortic aneurysm of unspecified site, ruptured	
I719		Aortic aneurysm of unspecified site, without rupture	
I790		Aneurysm of aorta in diseases classified elsewhere	
Endocarditis		I33	Acute and subacute endocarditis
		I330	Acute and subacute infective endocarditis
		I339	Acute and subacute endocarditis, unspecified
		I38	Endocarditis, valve unspecified
	I380		
	I39	Endocarditis and heart valve disorders in diseases classified elsewhere	
	I390	Mitral valve disorders in diseases classified elsewhere	
	I391	Aortic valve disorders in diseases classified elsewhere	
	I392	Tricuspid valve disorders in diseases classified elsewhere	
	I393	Pulmonary valve disorders in diseases classified elsewhere	
	I394	Multiple valve disorders in diseases classified elsewhere	
	I398	Endocarditis, valve unspecified, in diseases classified elsewhere	
	I399		
Heart Failure*	B332	Viral carditis	
	B3320	Viral carditis, unspecified	

	B3321	Viral endocarditis
	B3322	Viral myocarditis
	B3323	Viral pericarditis
	B3324	Viral cardiomyopathy
	I40	Acute myocarditis
	I400	Infective myocarditis
	I401	Isolated myocarditis
	I408	Other acute myocarditis
	I409	Acute myocarditis, unspecified
	I41	Myocarditis in diseases classified elsewhere
	I410	Myocarditis in diseases classified elsewhere
	I411	Myocarditis in diseases classified elsewhere
	I412	Myocarditis in diseases classified elsewhere
	I418	Myocarditis in diseases classified elsewhere
	I42	Cardiomyopathy
	I420	Dilated cardiomyopathy
	I421	Obstructive hypertrophic cardiomyopathy
	I422	Other hypertrophic cardiomyopathy
	I423	Endomyocardial (eosinophilic) disease
	I424	Endocardial fibroelastosis
	I425	Other restrictive cardiomyopathy
	I426	Alcoholic cardiomyopathy
	I427	Cardiomyopathy due to drug and external agent
	I428	Other cardiomyopathies
	I429	Cardiomyopathy, unspecified
	I43	Cardiomyopathy in diseases classified elsewhere
	I430	Cardiomyopathy in diseases classified elsewhere
	I431	Cardiomyopathy in diseases classified elsewhere
	I432	Cardiomyopathy in diseases classified elsewhere
	I438	Cardiomyopathy in diseases classified elsewhere
	I514	Myocarditis, unspecified
	I515	Myocardial degeneration
	I516	Cardiovascular disease, unspecified
	I270	Primary pulmonary hypertension
	I272	Other secondary pulmonary hypertension
	I279	Pulmonary heart disease, unspecified
	I50	Heart failure
	I500	Congestive heart failure
	I501	Left ventricular failure
	I502	Systolic (congestive) heart failure
	I5020	Unspecified systolic (congestive) heart failure
	I5021	Acute systolic (congestive) heart failure
	I5022	Chronic systolic (congestive) heart failure



	I5023	Acute on chronic systolic (congestive) heart failure
	I503	Diastolic (congestive) heart failure
	I5030	Unspecified diastolic (congestive) heart failure
	I5031	Acute diastolic (congestive) heart failure
	I5032	Chronic diastolic (congestive) heart failure
	I5033	Acute on chronic diastolic (congestive) heart failure
	I504	Combined systolic (congestive) and diastolic (congestive) heart failure
	I5040	Unspecified combined systolic (congestive) and diastolic (congestive) heart failure
	I5041	Acute combined systolic (congestive) and diastolic (congestive) heart failure
	I5042	Chronic combined systolic (congestive) and diastolic (congestive) heart failure
	I5043	Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure
	I508	
	I509	Heart failure, unspecified
	J81	Pulmonary edema
	I11	Hypertensive heart disease
	I110	Hypertensive heart disease with heart failure
	I112	
	I119	Hypertensive heart disease without heart failure
Ischemic Heart Disease	I20	Angina pectoris
	I200	Unstable angina
	I201	Angina pectoris with documented spasm
	I208	Other forms of angina pectoris
	I209	Angina pectoris, unspecified
	I21	ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction
	I210	ST elevation (STEMI) myocardial infarction of anterior wall
	I2101	ST elevation (STEMI) myocardial infarction involving left main coronary artery
	I2102	ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery
	I2109	ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall
	I211	ST elevation (STEMI) myocardial infarction of inferior wall
	I2111	ST elevation (STEMI) myocardial infarction involving right coronary artery
	I2119	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall
	I212	ST elevation (STEMI) myocardial infarction of other sites

	I2121	ST elevation (STEMI) myocardial infarction involving left circumflex coronary artery
	I2129	ST elevation (STEMI) myocardial infarction involving other sites
	I213	ST elevation (STEMI) myocardial infarction of unspecified site
	I214	Non-ST elevation (NSTEMI) myocardial infarction
	I216	
	I219	Acute myocardial infarction, unspecified
	I21A	NA
	I22	Subsequent ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction
	I220	Subsequent ST elevation (STEMI) myocardial infarction of anterior wall
	I221	Subsequent ST elevation (STEMI) myocardial infarction of inferior wall
	I222	Subsequent non-ST elevation (NSTEMI) myocardial infarction
	I228	Subsequent ST elevation (STEMI) myocardial infarction of other sites
	I229	Subsequent ST elevation (STEMI) myocardial infarction of unspecified site
	I23	Certain current complications following ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction (within the 28 day period)
	I24	Other acute ischemic heart diseases
	I240	Acute coronary thrombosis not resulting in myocardial infarction
	I241	Dressler's syndrome
	I248	Other forms of acute ischemic heart disease
	I249	Acute ischemic heart disease, unspecified
	I25	Chronic ischemic heart disease
	I250	Atherosclerotic cardiovascular disease, so described
	I251	Atherosclerotic heart disease of native coronary artery
	I2510	Atherosclerotic heart disease of native coronary artery without angina pectoris
	I2511	Atherosclerotic heart disease of native coronary artery with angina pectoris
	I25110	Atherosclerotic heart disease of native coronary artery with unstable angina pectoris
	I25111	Atherosclerotic heart disease of native coronary artery with angina pectoris with documented spasm
	I25118	Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris
	I25119	Atherosclerotic heart disease of native coronary artery with unspecified angina pectoris
	I252	Old myocardial infarction

	I253	Aneurysm of heart
	I254	Coronary artery aneurysm and dissection
	I2541	Coronary artery aneurysm
	I2542	Coronary artery dissection
	I255	Ischemic cardiomyopathy
	I256	Silent myocardial ischemia
	I257	Atherosclerosis of coronary artery bypass graft(s) and coronary artery of transplanted heart with angina pectoris
	I2570	Atherosclerosis of coronary artery bypass graft(s), unspecified, with angina pectoris
	I25700	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unstable angina pectoris
	I25701	Atherosclerosis of coronary artery bypass graft(s), unspecified, with angina pectoris with documented spasm
	I25708	Atherosclerosis of coronary artery bypass graft(s), unspecified, with other forms of angina pectoris
	I25709	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unspecified angina pectoris
	I2571	Atherosclerosis of autologous vein coronary artery bypass graft(s) with angina pectoris
	I25710	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unstable angina pectoris
	I25711	Atherosclerosis of autologous vein coronary artery bypass graft(s) with angina pectoris with documented spasm
	I25718	Atherosclerosis of autologous vein coronary artery bypass graft(s) with other forms of angina pectoris
	I25719	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unspecified angina pectoris
	I2572	Atherosclerosis of autologous artery coronary artery bypass graft(s) with angina pectoris
	I25720	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unstable angina pectoris
	I25721	Atherosclerosis of autologous artery coronary artery bypass graft(s) with angina pectoris with documented spasm
	I25728	Atherosclerosis of autologous artery coronary artery bypass graft(s) with other forms of angina pectoris
	I25729	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unspecified angina pectoris
	I2573	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with angina pectoris
	I25730	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unstable angina pectoris

	I25731	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with angina pectoris with documented spasm
	I25738	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with other forms of angina pectoris
	I25739	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unspecified angina pectoris
	I2575	Atherosclerosis of native coronary artery of transplanted heart with angina pectoris
	I25750	Atherosclerosis of native coronary artery of transplanted heart with unstable angina
	I25751	Atherosclerosis of native coronary artery of transplanted heart with angina pectoris with documented spasm
	I25758	Atherosclerosis of native coronary artery of transplanted heart with other forms of angina pectoris
	I25759	Atherosclerosis of native coronary artery of transplanted heart with unspecified angina pectoris
	I2576	Atherosclerosis of bypass graft of coronary artery of transplanted heart with angina pectoris
	I25760	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unstable angina
	I25761	Atherosclerosis of bypass graft of coronary artery of transplanted heart with angina pectoris with documented spasm
	I25768	Atherosclerosis of bypass graft of coronary artery of transplanted heart with other forms of angina pectoris
	I25769	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unspecified angina pectoris
	I2579	Atherosclerosis of other coronary artery bypass graft(s) with angina pectoris
	I25790	Atherosclerosis of other coronary artery bypass graft(s) with unstable angina pectoris
	I25791	Atherosclerosis of other coronary artery bypass graft(s) with angina pectoris with documented spasm
	I25798	Atherosclerosis of other coronary artery bypass graft(s) with other forms of angina pectoris
	I25799	Atherosclerosis of other coronary artery bypass graft(s) with unspecified angina pectoris
	I258	Other forms of chronic ischemic heart disease
	I2581	Atherosclerosis of other coronary vessels without angina pectoris
	I25810	Atherosclerosis of coronary artery bypass graft(s) without angina pectoris
	I25811	Atherosclerosis of native coronary artery of transplanted heart without angina pectoris

	I25812	Atherosclerosis of bypass graft of coronary artery of transplanted heart without angina pectoris
	I2582	Chronic total occlusion of coronary artery
	I2583	Coronary atherosclerosis due to lipid rich plaque
	I2584	Coronary atherosclerosis due to calcified coronary lesion
	I2589	Other forms of chronic ischemic heart disease
	I259	Chronic ischemic heart disease, unspecified
	Z824	Family history of ischemic heart disease and other diseases of the circulatory system
	Z8241	Family history of sudden cardiac death
	Z8249	Family history of ischemic heart disease and other diseases of the circulatory system
Other Cardiovascular Disease	I280	Arteriovenous fistula of pulmonary vessels
	I281	Aneurysm of pulmonary artery
	I288	Other diseases of pulmonary vessels
	I289	Disease of pulmonary vessels, unspecified
	I300	Acute nonspecific idiopathic pericarditis
	I301	Infective pericarditis
	I308	Other forms of acute pericarditis
	I309	Acute pericarditis, unspecified
	I310	Chronic adhesive pericarditis
	I311	Chronic constrictive pericarditis
	I313	Pericardial effusion (noninflammatory)
	I314	Cardiac tamponade
	I318	Other specified diseases of pericardium
	I319	Disease of pericardium, unspecified
	I32	Pericarditis in diseases classified elsewhere
	I34	Nonrheumatic mitral valve disorders
	I340	Nonrheumatic mitral (valve) insufficiency
	I341	Nonrheumatic mitral (valve) prolapse
	I342	Nonrheumatic mitral (valve) stenosis
	I348	Other nonrheumatic mitral valve disorders
	I349	Nonrheumatic mitral valve disorder, unspecified
	I35	Nonrheumatic aortic valve disorders
	I350	Nonrheumatic aortic (valve) stenosis
	I351	Nonrheumatic aortic (valve) insufficiency
	I352	Nonrheumatic aortic (valve) stenosis with insufficiency
	I358	Other nonrheumatic aortic valve disorders
	I359	Nonrheumatic aortic valve disorder, unspecified
	I36	Nonrheumatic tricuspid valve disorders
	I360	Nonrheumatic tricuspid (valve) stenosis
	I361	Nonrheumatic tricuspid (valve) insufficiency

	I362	Nonrheumatic tricuspid (valve) stenosis with insufficiency
	I368	Other nonrheumatic tricuspid valve disorders
	I369	Nonrheumatic tricuspid valve disorder, unspecified
	I37	Nonrheumatic pulmonary valve disorders
	I370	Nonrheumatic pulmonary valve stenosis
	I371	Nonrheumatic pulmonary valve insufficiency
	I372	Nonrheumatic pulmonary valve stenosis with insufficiency
	I378	Other nonrheumatic pulmonary valve disorders
	I379	Nonrheumatic pulmonary valve disorder, unspecified
	I720	Aneurysm of carotid artery
	I721	Aneurysm of artery of upper extremity
	I722	Aneurysm of renal artery
	I723	Aneurysm of iliac artery
	I724	Aneurysm of artery of lower extremity
	I728	Aneurysm of other specified arteries
	I729	Aneurysm of unspecified site
	I76	Septic arterial embolism
	I770	Arteriovenous fistula, acquired
	I771	Stricture of artery
	I772	Rupture of artery
	I773	Arterial fibromuscular dysplasia
	I774	Celiac artery compression syndrome
	I775	Necrosis of artery
	I776	Arteritis, unspecified
	I779	Disorder of arteries and arterioles, unspecified
	I780	Hereditary hemorrhagic telangiectasia
	I781	Nevus, non-neoplastic
	I788	Other diseases of capillaries
	I789	Disease of capillaries, unspecified
	I80	Phlebitis and thrombophlebitis
	I800	Phlebitis and thrombophlebitis of superficial vessels of lower extremities
	I8000	Phlebitis and thrombophlebitis of superficial vessels of unspecified lower extremity
	I8001	Phlebitis and thrombophlebitis of superficial vessels of right lower extremity
	I8002	Phlebitis and thrombophlebitis of superficial vessels of left lower extremity
	I8003	Phlebitis and thrombophlebitis of superficial vessels of lower extremities, bilateral
	I801	Phlebitis and thrombophlebitis of femoral vein
	I8010	Phlebitis and thrombophlebitis of unspecified femoral vein
	I8011	Phlebitis and thrombophlebitis of right femoral vein

	18012	Phlebitis and thrombophlebitis of left femoral vein
	18013	Phlebitis and thrombophlebitis of femoral vein, bilateral
	1802	Phlebitis and thrombophlebitis of other and unspecified deep vessels of lower extremities
	18020	Phlebitis and thrombophlebitis of unspecified deep vessels of lower extremities
	180201	Phlebitis and thrombophlebitis of unspecified deep vessels of right lower extremity
	180202	Phlebitis and thrombophlebitis of unspecified deep vessels of left lower extremity
	180203	Phlebitis and thrombophlebitis of unspecified deep vessels of lower extremities, bilateral
	180209	Phlebitis and thrombophlebitis of unspecified deep vessels of unspecified lower extremity
	18021	Phlebitis and thrombophlebitis of iliac vein
	180211	Phlebitis and thrombophlebitis of right iliac vein
	180212	Phlebitis and thrombophlebitis of left iliac vein
	180213	Phlebitis and thrombophlebitis of iliac vein, bilateral
	180219	Phlebitis and thrombophlebitis of unspecified iliac vein
	18022	Phlebitis and thrombophlebitis of popliteal vein
	180221	Phlebitis and thrombophlebitis of right popliteal vein
	180222	Phlebitis and thrombophlebitis of left popliteal vein
	180223	Phlebitis and thrombophlebitis of popliteal vein, bilateral
	180229	Phlebitis and thrombophlebitis of unspecified popliteal vein
	18023	Phlebitis and thrombophlebitis of tibial vein
	180231	Phlebitis and thrombophlebitis of right tibial vein
	180232	Phlebitis and thrombophlebitis of left tibial vein
	180233	Phlebitis and thrombophlebitis of tibial vein, bilateral
	180239	Phlebitis and thrombophlebitis of unspecified tibial vein
	18029	Phlebitis and thrombophlebitis of other deep vessels of lower extremities
	180291	Phlebitis and thrombophlebitis of other deep vessels of right lower extremity
	180292	Phlebitis and thrombophlebitis of other deep vessels of left lower extremity
	180293	Phlebitis and thrombophlebitis of other deep vessels of lower extremity, bilateral
	180299	Phlebitis and thrombophlebitis of other deep vessels of unspecified lower extremity
	1803	Phlebitis and thrombophlebitis of lower extremities, unspecified
	1808	Phlebitis and thrombophlebitis of other sites
	1809	Phlebitis and thrombophlebitis of unspecified site
	181	Portal vein thrombosis

	1810	
	182	Other venous embolism and thrombosis
	1820	Budd-Chiari syndrome
	1821	Thrombophlebitis migrans
	1822	Embolism and thrombosis of vena cava and other thoracic veins
	18221	Embolism and thrombosis of superior vena cava
	182210	Acute embolism and thrombosis of superior vena cava
	182211	Chronic embolism and thrombosis of superior vena cava
	18222	Embolism and thrombosis of inferior vena cava
	182220	Acute embolism and thrombosis of inferior vena cava
	182221	Chronic embolism and thrombosis of inferior vena cava
	18229	Embolism and thrombosis of other thoracic veins
	182290	Acute embolism and thrombosis of other thoracic veins
	182291	Chronic embolism and thrombosis of other thoracic veins
	1823	Embolism and thrombosis of renal vein
	1824	Acute embolism and thrombosis of unspecified deep veins of unspecified distal lower extremity
	18240	Acute embolism and thrombosis of unspecified deep veins of lower extremity
	182401	Acute embolism and thrombosis of unspecified deep veins of right lower extremity
	182402	Acute embolism and thrombosis of unspecified deep veins of left lower extremity
	182403	Acute embolism and thrombosis of unspecified deep veins of lower extremity, bilateral
	182409	Acute embolism and thrombosis of unspecified deep veins of unspecified lower extremity
	18241	Acute embolism and thrombosis of femoral vein
	182411	Acute embolism and thrombosis of right femoral vein
	182412	Acute embolism and thrombosis of left femoral vein
	182413	Acute embolism and thrombosis of femoral vein, bilateral
	182419	Acute embolism and thrombosis of unspecified femoral vein
	18242	Acute embolism and thrombosis of iliac vein
	182421	Acute embolism and thrombosis of right iliac vein
	182422	Acute embolism and thrombosis of left iliac vein
	182423	Acute embolism and thrombosis of iliac vein, bilateral
	182429	Acute embolism and thrombosis of unspecified iliac vein
	18243	Acute embolism and thrombosis of popliteal vein
	182431	Acute embolism and thrombosis of right popliteal vein
	182432	Acute embolism and thrombosis of left popliteal vein
	182433	Acute embolism and thrombosis of popliteal vein, bilateral
	182439	Acute embolism and thrombosis of unspecified popliteal vein
	18244	Acute embolism and thrombosis of tibial vein



	182441	Acute embolism and thrombosis of right tibial vein
	182442	Acute embolism and thrombosis of left tibial vein
	182443	Acute embolism and thrombosis of tibial vein, bilateral
	182449	Acute embolism and thrombosis of unspecified tibial vein
	18249	Acute embolism and thrombosis of other specified deep vein of lower extremity
	182491	Acute embolism and thrombosis of other specified deep vein of right lower extremity
	182492	Acute embolism and thrombosis of other specified deep vein of left lower extremity
	182493	Acute embolism and thrombosis of other specified deep vein of lower extremity, bilateral
	182499	Acute embolism and thrombosis of other specified deep vein of unspecified lower extremity
	1825	Chronic embolism and thrombosis of unspecified deep veins of unspecified distal lower extremity
	18250	Chronic embolism and thrombosis of unspecified deep veins of lower extremity
	182501	Chronic embolism and thrombosis of unspecified deep veins of right lower extremity
	182502	Chronic embolism and thrombosis of unspecified deep veins of left lower extremity
	182503	Chronic embolism and thrombosis of unspecified deep veins of lower extremity, bilateral
	182509	Chronic embolism and thrombosis of unspecified deep veins of unspecified lower extremity
	18251	Chronic embolism and thrombosis of femoral vein
	182511	Chronic embolism and thrombosis of right femoral vein
	182512	Chronic embolism and thrombosis of left femoral vein
	182513	Chronic embolism and thrombosis of femoral vein, bilateral
	182519	Chronic embolism and thrombosis of unspecified femoral vein
	18252	Chronic embolism and thrombosis of iliac vein
	182521	Chronic embolism and thrombosis of right iliac vein
	182522	Chronic embolism and thrombosis of left iliac vein
	182523	Chronic embolism and thrombosis of iliac vein, bilateral
	182529	Chronic embolism and thrombosis of unspecified iliac vein
	18253	Chronic embolism and thrombosis of popliteal vein
	182531	Chronic embolism and thrombosis of right popliteal vein
	182532	Chronic embolism and thrombosis of left popliteal vein
	182533	Chronic embolism and thrombosis of popliteal vein, bilateral
	182539	Chronic embolism and thrombosis of unspecified popliteal vein
	18254	Chronic embolism and thrombosis of tibial vein
	182541	Chronic embolism and thrombosis of right tibial vein

	182542	Chronic embolism and thrombosis of left tibial vein
	182543	Chronic embolism and thrombosis of tibial vein, bilateral
	182549	Chronic embolism and thrombosis of unspecified tibial vein
	18259	Chronic embolism and thrombosis of other specified deep vein of lower extremity
	182591	Chronic embolism and thrombosis of other specified deep vein of right lower extremity
	182592	Chronic embolism and thrombosis of other specified deep vein of left lower extremity
	182593	Chronic embolism and thrombosis of other specified deep vein of lower extremity, bilateral
	182599	Chronic embolism and thrombosis of other specified deep vein of unspecified lower extremity
	1826	Acute embolism and thrombosis of veins of upper extremity
	18260	Acute embolism and thrombosis of unspecified veins of upper extremity
	182601	Acute embolism and thrombosis of unspecified veins of right upper extremity
	182602	Acute embolism and thrombosis of unspecified veins of left upper extremity
	182603	Acute embolism and thrombosis of unspecified veins of upper extremity, bilateral
	182609	Acute embolism and thrombosis of unspecified veins of unspecified upper extremity
	18261	Acute embolism and thrombosis of superficial veins of upper extremity
	182611	Acute embolism and thrombosis of superficial veins of right upper extremity
	182612	Acute embolism and thrombosis of superficial veins of left upper extremity
	182613	Acute embolism and thrombosis of superficial veins of upper extremity, bilateral
	182619	Acute embolism and thrombosis of superficial veins of unspecified upper extremity
	18262	Acute embolism and thrombosis of deep veins of upper extremity
	182621	Acute embolism and thrombosis of deep veins of right upper extremity
	182622	Acute embolism and thrombosis of deep veins of left upper extremity
	182623	Acute embolism and thrombosis of deep veins of upper extremity, bilateral

	I82629	Acute embolism and thrombosis of deep veins of unspecified upper extremity
	I827	Chronic embolism and thrombosis of veins of upper extremity
	I8270	Chronic embolism and thrombosis of unspecified veins of upper extremity
	I82701	Chronic embolism and thrombosis of unspecified veins of right upper extremity
	I82702	Chronic embolism and thrombosis of unspecified veins of left upper extremity
	I82703	Chronic embolism and thrombosis of unspecified veins of upper extremity, bilateral
	I82709	Chronic embolism and thrombosis of unspecified veins of unspecified upper extremity
	I8271	Chronic embolism and thrombosis of superficial veins of upper extremity
	I82711	Chronic embolism and thrombosis of superficial veins of right upper extremity
	I82712	Chronic embolism and thrombosis of superficial veins of left upper extremity
	I82713	Chronic embolism and thrombosis of superficial veins of upper extremity, bilateral
	I82719	Chronic embolism and thrombosis of superficial veins of unspecified upper extremity
	I8272	Chronic embolism and thrombosis of deep veins of upper extremity
	I82721	Chronic embolism and thrombosis of deep veins of right upper extremity
	I82722	Chronic embolism and thrombosis of deep veins of left upper extremity
	I82723	Chronic embolism and thrombosis of deep veins of upper extremity, bilateral
	I82729	Chronic embolism and thrombosis of deep veins of unspecified upper extremity
	I828	Embolism and thrombosis of other specified veins
	I8281	Embolism and thrombosis of superficial veins of lower extremities
	I82811	Embolism and thrombosis of superficial veins of right lower extremities
	I82812	Embolism and thrombosis of superficial veins of left lower extremities
	I82813	Embolism and thrombosis of superficial veins of lower extremities, bilateral
	I82819	Embolism and thrombosis of superficial veins of unspecified lower extremities

	I8289	Embolism and thrombosis of other specified veins
	I82890	Acute embolism and thrombosis of other specified veins
	I82891	Chronic embolism and thrombosis of other specified veins
	I829	Embolism and thrombosis of unspecified vein
	I8290	Acute embolism and thrombosis of unspecified vein
	I8291	Chronic embolism and thrombosis of unspecified vein
	I82A	NA
	I82B	NA
	I82C	NA
	I83	Varicose veins of lower extremities
	I830	Varicose veins of lower extremities with ulcer
	I8300	Varicose veins of unspecified lower extremity with ulcer
	I83001	Varicose veins of unspecified lower extremity with ulcer of thigh
	I83002	Varicose veins of unspecified lower extremity with ulcer of calf
	I83003	Varicose veins of unspecified lower extremity with ulcer of ankle
	I83004	Varicose veins of unspecified lower extremity with ulcer of heel and midfoot
	I83005	Varicose veins of unspecified lower extremity with ulcer other part of foot
	I83008	Varicose veins of unspecified lower extremity with ulcer other part of lower leg
	I83009	Varicose veins of unspecified lower extremity with ulcer of unspecified site
	I8301	Varicose veins of right lower extremity with ulcer
	I83011	Varicose veins of right lower extremity with ulcer of thigh
	I83012	Varicose veins of right lower extremity with ulcer of calf
	I83013	Varicose veins of right lower extremity with ulcer of ankle
	I83014	Varicose veins of right lower extremity with ulcer of heel and midfoot
	I83015	Varicose veins of right lower extremity with ulcer other part of foot
	I83018	Varicose veins of right lower extremity with ulcer other part of lower leg
	I83019	Varicose veins of right lower extremity with ulcer of unspecified site
	I8302	Varicose veins of left lower extremity with ulcer
	I83021	Varicose veins of left lower extremity with ulcer of thigh
	I83022	Varicose veins of left lower extremity with ulcer of calf
	I83023	Varicose veins of left lower extremity with ulcer of ankle
	I83024	Varicose veins of left lower extremity with ulcer of heel and midfoot
	I83025	Varicose veins of left lower extremity with ulcer other part of foot

	183028	Varicose veins of left lower extremity with ulcer other part of lower leg
	183029	Varicose veins of left lower extremity with ulcer of unspecified site
	1831	Varicose veins of lower extremities with inflammation
	18310	Varicose veins of unspecified lower extremity with inflammation
	18311	Varicose veins of right lower extremity with inflammation
	18312	Varicose veins of left lower extremity with inflammation
	1832	Varicose veins of lower extremities with both ulcer and inflammation
	18320	Varicose veins of unspecified lower extremity with both ulcer and inflammation
	183201	Varicose veins of unspecified lower extremity with both ulcer of thigh and inflammation
	183202	Varicose veins of unspecified lower extremity with both ulcer of calf and inflammation
	183203	Varicose veins of unspecified lower extremity with both ulcer of ankle and inflammation
	183204	Varicose veins of unspecified lower extremity with both ulcer of heel and midfoot and inflammation
	183205	Varicose veins of unspecified lower extremity with both ulcer other part of foot and inflammation
	183208	Varicose veins of unspecified lower extremity with both ulcer of other part of lower extremity and inflammation
	183209	Varicose veins of unspecified lower extremity with both ulcer of unspecified site and inflammation
	18321	Varicose veins of right lower extremity with both ulcer and inflammation
	183211	Varicose veins of right lower extremity with both ulcer of thigh and inflammation
	183212	Varicose veins of right lower extremity with both ulcer of calf and inflammation
	183213	Varicose veins of right lower extremity with both ulcer of ankle and inflammation
	183214	Varicose veins of right lower extremity with both ulcer of heel and midfoot and inflammation
	183215	Varicose veins of right lower extremity with both ulcer other part of foot and inflammation
	183218	Varicose veins of right lower extremity with both ulcer of other part of lower extremity and inflammation
	183219	Varicose veins of right lower extremity with both ulcer of unspecified site and inflammation

	18322	Varicose veins of left lower extremity with both ulcer and inflammation
	183221	Varicose veins of left lower extremity with both ulcer of thigh and inflammation
	183222	Varicose veins of left lower extremity with both ulcer of calf and inflammation
	183223	Varicose veins of left lower extremity with both ulcer of ankle and inflammation
	183224	Varicose veins of left lower extremity with both ulcer of heel and midfoot and inflammation
	183225	Varicose veins of left lower extremity with both ulcer other part of foot and inflammation
	183228	Varicose veins of left lower extremity with both ulcer of other part of lower extremity and inflammation
	183229	Varicose veins of left lower extremity with both ulcer of unspecified site and inflammation
	1838	Varicose veins of lower extremities with other complications
	18381	Varicose veins of lower extremities with pain
	183811	Varicose veins of right lower extremities with pain
	183812	Varicose veins of left lower extremities with pain
	183813	Varicose veins of bilateral lower extremities with pain
	183819	Varicose veins of unspecified lower extremities with pain
	18389	Varicose veins of lower extremities with other complications
	183891	Varicose veins of right lower extremities with other complications
	183892	Varicose veins of left lower extremities with other complications
	183893	Varicose veins of bilateral lower extremities with other complications
	183899	Varicose veins of unspecified lower extremities with other complications
	1839	Asymptomatic varicose veins of lower extremities
	18390	Asymptomatic varicose veins of unspecified lower extremity
	18391	Asymptomatic varicose veins of right lower extremity
	18392	Asymptomatic varicose veins of left lower extremity
	18393	Asymptomatic varicose veins of bilateral lower extremities
	1860	Sublingual varices
	1861	Scrotal varices
	1862	Pelvic varices
	1863	Vulval varices
	1864	Gastric varices
	1868	Varicose veins of other specified sites
	1870	Postthrombotic syndrome
	18700	Postthrombotic syndrome without complications

	I87001	Postthrombotic syndrome without complications of right lower extremity
	I87002	Postthrombotic syndrome without complications of left lower extremity
	I87003	Postthrombotic syndrome without complications of bilateral lower extremity
	I87009	Postthrombotic syndrome without complications of unspecified extremity
	I8701	Postthrombotic syndrome with ulcer
	I87011	Postthrombotic syndrome with ulcer of right lower extremity
	I87012	Postthrombotic syndrome with ulcer of left lower extremity
	I87013	Postthrombotic syndrome with ulcer of bilateral lower extremity
	I87019	Postthrombotic syndrome with ulcer of unspecified lower extremity
	I8702	Postthrombotic syndrome with inflammation
	I87021	Postthrombotic syndrome with inflammation of right lower extremity
	I87022	Postthrombotic syndrome with inflammation of left lower extremity
	I87023	Postthrombotic syndrome with inflammation of bilateral lower extremity
	I87029	Postthrombotic syndrome with inflammation of unspecified lower extremity
	I8703	Postthrombotic syndrome with ulcer and inflammation
	I87031	Postthrombotic syndrome with ulcer and inflammation of right lower extremity
	I87032	Postthrombotic syndrome with ulcer and inflammation of left lower extremity
	I87033	Postthrombotic syndrome with ulcer and inflammation of bilateral lower extremity
	I87039	Postthrombotic syndrome with ulcer and inflammation of unspecified lower extremity
	I8709	Postthrombotic syndrome with other complications
	I87091	Postthrombotic syndrome with other complications of right lower extremity
	I87092	Postthrombotic syndrome with other complications of left lower extremity
	I87093	Postthrombotic syndrome with other complications of bilateral lower extremity
	I87099	Postthrombotic syndrome with other complications of unspecified lower extremity
	I871	Compression of vein
	I890	Lymphedema, not elsewhere classified

	1898	Other specified noninfective disorders of lymphatic vessels and lymph nodes
	1899	Noninfective disorder of lymphatic vessels and lymph nodes, unspecified
	M318	Other specified necrotizing vasculopathies
	M319	Necrotizing vasculopathy, unspecified
Peripheral Arterial Disease	I670	Dissection of cerebral arteries, nonruptured
	I702	Atherosclerosis of native arteries of the extremities
	I7020	Unspecified atherosclerosis of native arteries of extremities
	I70201	Unspecified atherosclerosis of native arteries of extremities, right leg
	I70202	Unspecified atherosclerosis of native arteries of extremities, left leg
	I70203	Unspecified atherosclerosis of native arteries of extremities, bilateral legs
	I70208	Unspecified atherosclerosis of native arteries of extremities, other extremity
	I70209	Unspecified atherosclerosis of native arteries of extremities, unspecified extremity
	I7021	Atherosclerosis of native arteries of extremities with intermittent claudication
	I70211	Atherosclerosis of native arteries of extremities with intermittent claudication, right leg
	I70212	Atherosclerosis of native arteries of extremities with intermittent claudication, left leg
	I70213	Atherosclerosis of native arteries of extremities with intermittent claudication, bilateral legs
	I70218	Atherosclerosis of native arteries of extremities with intermittent claudication, other extremity
	I70219	Atherosclerosis of native arteries of extremities with intermittent claudication, unspecified extremity
	I7022	Atherosclerosis of native arteries of extremities with rest pain
	I70221	Atherosclerosis of native arteries of extremities with rest pain, right leg
	I70222	Atherosclerosis of native arteries of extremities with rest pain, left leg
	I70223	Atherosclerosis of native arteries of extremities with rest pain, bilateral legs
	I70228	Atherosclerosis of native arteries of extremities with rest pain, other extremity
	I70229	Atherosclerosis of native arteries of extremities with rest pain, unspecified extremity
	I7023	Atherosclerosis of native arteries of right leg with ulceration



	170231	Atherosclerosis of native arteries of right leg with ulceration of thigh
	170232	Atherosclerosis of native arteries of right leg with ulceration of calf
	170233	Atherosclerosis of native arteries of right leg with ulceration of ankle
	170234	Atherosclerosis of native arteries of right leg with ulceration of heel and midfoot
	170235	Atherosclerosis of native arteries of right leg with ulceration of other part of foot
	170238	Atherosclerosis of native arteries of right leg with ulceration of other part of lower right leg
	170239	Atherosclerosis of native arteries of right leg with ulceration of unspecified site
	17024	Atherosclerosis of native arteries of left leg with ulceration
	170241	Atherosclerosis of native arteries of left leg with ulceration of thigh
	170242	Atherosclerosis of native arteries of left leg with ulceration of calf
	170243	Atherosclerosis of native arteries of left leg with ulceration of ankle
	170244	Atherosclerosis of native arteries of left leg with ulceration of heel and midfoot
	170245	Atherosclerosis of native arteries of left leg with ulceration of other part of foot
	170248	Atherosclerosis of native arteries of left leg with ulceration of other part of lower left leg
	170249	Atherosclerosis of native arteries of left leg with ulceration of unspecified site
	17025	Atherosclerosis of native arteries of other extremities with ulceration
	17026	Atherosclerosis of native arteries of extremities with gangrene
	170261	Atherosclerosis of native arteries of extremities with gangrene, right leg
	170262	Atherosclerosis of native arteries of extremities with gangrene, left leg
	170263	Atherosclerosis of native arteries of extremities with gangrene, bilateral legs
	170268	Atherosclerosis of native arteries of extremities with gangrene, other extremity
	170269	Atherosclerosis of native arteries of extremities with gangrene, unspecified extremity
	17029	Other atherosclerosis of native arteries of extremities
	170291	Other atherosclerosis of native arteries of extremities, right leg

	170292	Other atherosclerosis of native arteries of extremities, left leg
	170293	Other atherosclerosis of native arteries of extremities, bilateral legs
	170298	Other atherosclerosis of native arteries of extremities, other extremity
	170299	Other atherosclerosis of native arteries of extremities, unspecified extremity
	1703	Atherosclerosis of unspecified type of bypass graft(s) of the extremities
	17030	Unspecified atherosclerosis of unspecified type of bypass graft(s) of the extremities
	170301	Unspecified atherosclerosis of unspecified type of bypass graft(s) of the extremities, right leg
	170302	Unspecified atherosclerosis of unspecified type of bypass graft(s) of the extremities, left leg
	170303	Unspecified atherosclerosis of unspecified type of bypass graft(s) of the extremities, bilateral legs
	170308	Unspecified atherosclerosis of unspecified type of bypass graft(s) of the extremities, other extremity
	170309	Unspecified atherosclerosis of unspecified type of bypass graft(s) of the extremities, unspecified extremity
	17031	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication
	170311	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication, right leg
	170312	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication, left leg
	170313	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication, bilateral legs
	170318	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication, other extremity
	170319	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication, unspecified extremity
	17032	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with rest pain
	170321	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with rest pain, right leg
	170322	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with rest pain, left leg
	170323	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with rest pain, bilateral legs
	170328	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with rest pain, other extremity

	170329	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with rest pain, unspecified extremity
	17033	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration
	170331	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of thigh
	170332	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of calf
	170333	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of ankle
	170334	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of heel and midfoot
	170335	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of other part of foot
	170338	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of other part of lower leg
	170339	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of unspecified site
	17034	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration
	170341	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of thigh
	170342	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of calf
	170343	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of ankle
	170344	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of heel and midfoot
	170345	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of other part of foot
	170348	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of other part of lower leg
	170349	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of unspecified site
	17035	Atherosclerosis of unspecified type of bypass graft(s) of other extremity with ulceration
	17036	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with gangrene
	170361	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with gangrene, right leg
	170362	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with gangrene, left leg

	170363	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with gangrene, bilateral legs
	170368	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with gangrene, other extremity
	170369	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with gangrene, unspecified extremity
	17039	Other atherosclerosis of unspecified type of bypass graft(s) of the extremities
	170391	Other atherosclerosis of unspecified type of bypass graft(s) of the extremities, right leg
	170392	Other atherosclerosis of unspecified type of bypass graft(s) of the extremities, left leg
	170393	Other atherosclerosis of unspecified type of bypass graft(s) of the extremities, bilateral legs
	170398	Other atherosclerosis of unspecified type of bypass graft(s) of the extremities, other extremity
	170399	Other atherosclerosis of unspecified type of bypass graft(s) of the extremities, unspecified extremity
	1704	Atherosclerosis of autologous vein bypass graft(s) of the extremities
	17040	Unspecified atherosclerosis of autologous vein bypass graft(s) of the extremities
	170401	Unspecified atherosclerosis of autologous vein bypass graft(s) of the extremities, right leg
	170402	Unspecified atherosclerosis of autologous vein bypass graft(s) of the extremities, left leg
	170403	Unspecified atherosclerosis of autologous vein bypass graft(s) of the extremities, bilateral legs
	170408	Unspecified atherosclerosis of autologous vein bypass graft(s) of the extremities, other extremity
	170409	Unspecified atherosclerosis of autologous vein bypass graft(s) of the extremities, unspecified extremity
	17041	Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication
	170411	Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication, right leg
	170412	Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication, left leg
	170413	Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication, bilateral legs
	170418	Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication, other extremity
	170419	Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication, unspecified extremity

	17042	Atherosclerosis of autologous vein bypass graft(s) of the extremities with rest pain
	170421	Atherosclerosis of autologous vein bypass graft(s) of the extremities with rest pain, right leg
	170422	Atherosclerosis of autologous vein bypass graft(s) of the extremities with rest pain, left leg
	170423	Atherosclerosis of autologous vein bypass graft(s) of the extremities with rest pain, bilateral legs
	170428	Atherosclerosis of autologous vein bypass graft(s) of the extremities with rest pain, other extremity
	170429	Atherosclerosis of autologous vein bypass graft(s) of the extremities with rest pain, unspecified extremity
	17043	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration
	170431	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of thigh
	170432	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of calf
	170433	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of ankle
	170434	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of heel and midfoot
	170435	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of other part of foot
	170438	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of other part of lower leg
	170439	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of unspecified site
	17044	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration
	170441	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of thigh
	170442	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of calf
	170443	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of ankle
	170444	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of heel and midfoot
	170445	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of other part of foot
	170448	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of other part of lower leg

	170449	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of unspecified site
	17045	Atherosclerosis of autologous vein bypass graft(s) of other extremity with ulceration
	17046	Atherosclerosis of autologous vein bypass graft(s) of the extremities with gangrene
	170461	Atherosclerosis of autologous vein bypass graft(s) of the extremities with gangrene, right leg
	170462	Atherosclerosis of autologous vein bypass graft(s) of the extremities with gangrene, left leg
	170463	Atherosclerosis of autologous vein bypass graft(s) of the extremities with gangrene, bilateral legs
	170468	Atherosclerosis of autologous vein bypass graft(s) of the extremities with gangrene, other extremity
	170469	Atherosclerosis of autologous vein bypass graft(s) of the extremities with gangrene, unspecified extremity
	17049	Other atherosclerosis of autologous vein bypass graft(s) of the extremities
	170491	Other atherosclerosis of autologous vein bypass graft(s) of the extremities, right leg
	170492	Other atherosclerosis of autologous vein bypass graft(s) of the extremities, left leg
	170493	Other atherosclerosis of autologous vein bypass graft(s) of the extremities, bilateral legs
	170498	Other atherosclerosis of autologous vein bypass graft(s) of the extremities, other extremity
	170499	Other atherosclerosis of autologous vein bypass graft(s) of the extremities, unspecified extremity
	1705	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities
	17050	Unspecified atherosclerosis of nonautologous biological bypass graft(s) of the extremities
	170501	Unspecified atherosclerosis of nonautologous biological bypass graft(s) of the extremities, right leg
	170502	Unspecified atherosclerosis of nonautologous biological bypass graft(s) of the extremities, left leg
	170503	Unspecified atherosclerosis of nonautologous biological bypass graft(s) of the extremities, bilateral legs
	170508	Unspecified atherosclerosis of nonautologous biological bypass graft(s) of the extremities, other extremity
	170509	Unspecified atherosclerosis of nonautologous biological bypass graft(s) of the extremities, unspecified extremity

	17051	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities intermittent claudication
	170511	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with intermittent claudication, right leg
	170512	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with intermittent claudication, left leg
	170513	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with intermittent claudication, bilateral legs
	170518	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with intermittent claudication, other extremity
	170519	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with intermittent claudication, unspecified extremity
	17052	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with rest pain
	170521	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with rest pain, right leg
	170522	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with rest pain, left leg
	170523	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with rest pain, bilateral legs
	170528	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with rest pain, other extremity
	170529	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with rest pain, unspecified extremity
	17053	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration
	170531	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of thigh
	170532	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of calf
	170533	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of ankle
	170534	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of heel and midfoot
	170535	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of other part of foot
	170538	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of other part of lower leg
	170539	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of unspecified site
	17054	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration

	170541	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of thigh
	170542	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of calf
	170543	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of ankle
	170544	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of heel and midfoot
	170545	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of other part of foot
	170548	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of other part of lower leg
	170549	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of unspecified site
	17055	Atherosclerosis of nonautologous biological bypass graft(s) of other extremity with ulceration
	17056	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with gangrene
	170561	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with gangrene, right leg
	170562	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with gangrene, left leg
	170563	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with gangrene, bilateral legs
	170568	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with gangrene, other extremity
	170569	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with gangrene, unspecified extremity
	17059	Other atherosclerosis of nonautologous biological bypass graft(s) of the extremities
	170591	Other atherosclerosis of nonautologous biological bypass graft(s) of the extremities, right leg
	170592	Other atherosclerosis of nonautologous biological bypass graft(s) of the extremities, left leg
	170593	Other atherosclerosis of nonautologous biological bypass graft(s) of the extremities, bilateral legs
	170598	Other atherosclerosis of nonautologous biological bypass graft(s) of the extremities, other extremity
	170599	Other atherosclerosis of nonautologous biological bypass graft(s) of the extremities, unspecified extremity
	1706	Atherosclerosis of nonbiological bypass graft(s) of the extremities
	17060	Unspecified atherosclerosis of nonbiological bypass graft(s) of the extremities



	170601	Unspecified atherosclerosis of nonbiological bypass graft(s) of the extremities, right leg
	170602	Unspecified atherosclerosis of nonbiological bypass graft(s) of the extremities, left leg
	170603	Unspecified atherosclerosis of nonbiological bypass graft(s) of the extremities, bilateral legs
	170608	Unspecified atherosclerosis of nonbiological bypass graft(s) of the extremities, other extremity
	170609	Unspecified atherosclerosis of nonbiological bypass graft(s) of the extremities, unspecified extremity
	17061	Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication
	170611	Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication, right leg
	170612	Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication, left leg
	170613	Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication, bilateral legs
	170618	Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication, other extremity
	170619	Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication, unspecified extremity
	17062	Atherosclerosis of nonbiological bypass graft(s) of the extremities with rest pain
	170621	Atherosclerosis of nonbiological bypass graft(s) of the extremities with rest pain, right leg
	170622	Atherosclerosis of nonbiological bypass graft(s) of the extremities with rest pain, left leg
	170623	Atherosclerosis of nonbiological bypass graft(s) of the extremities with rest pain, bilateral legs
	170628	Atherosclerosis of nonbiological bypass graft(s) of the extremities with rest pain, other extremity
	170629	Atherosclerosis of nonbiological bypass graft(s) of the extremities with rest pain, unspecified extremity
	17063	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration
	170631	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of thigh
	170632	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of calf
	170633	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of ankle

	170634	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of heel and midfoot
	170635	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of other part of foot
	170638	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of other part of lower leg
	170639	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of unspecified site
	17064	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration
	170641	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of thigh
	170642	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of calf
	170643	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of ankle
	170644	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of heel and midfoot
	170645	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of other part of foot
	170648	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of other part of lower leg
	170649	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of unspecified site
	17065	Atherosclerosis of nonbiological bypass graft(s) of other extremity with ulceration
	17066	Atherosclerosis of nonbiological bypass graft(s) of the extremities with gangrene
	170661	Atherosclerosis of nonbiological bypass graft(s) of the extremities with gangrene, right leg
	170662	Atherosclerosis of nonbiological bypass graft(s) of the extremities with gangrene, left leg
	170663	Atherosclerosis of nonbiological bypass graft(s) of the extremities with gangrene, bilateral legs
	170668	Atherosclerosis of nonbiological bypass graft(s) of the extremities with gangrene, other extremity
	170669	Atherosclerosis of nonbiological bypass graft(s) of the extremities with gangrene, unspecified extremity
	17069	Other atherosclerosis of nonbiological bypass graft(s) of the extremities
	170691	Other atherosclerosis of nonbiological bypass graft(s) of the extremities, right leg

	170692	Other atherosclerosis of nonbiological bypass graft(s) of the extremities, left leg
	170693	Other atherosclerosis of nonbiological bypass graft(s) of the extremities, bilateral legs
	170698	Other atherosclerosis of nonbiological bypass graft(s) of the extremities, other extremity
	170699	Other atherosclerosis of nonbiological bypass graft(s) of the extremities, unspecified extremity
	1707	Atherosclerosis of other type of bypass graft(s) of the extremities
	17070	Unspecified atherosclerosis of other type of bypass graft(s) of the extremities
	170701	Unspecified atherosclerosis of other type of bypass graft(s) of the extremities, right leg
	170702	Unspecified atherosclerosis of other type of bypass graft(s) of the extremities, left leg
	170703	Unspecified atherosclerosis of other type of bypass graft(s) of the extremities, bilateral legs
	170708	Unspecified atherosclerosis of other type of bypass graft(s) of the extremities, other extremity
	170709	Unspecified atherosclerosis of other type of bypass graft(s) of the extremities, unspecified extremity
	17071	Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication
	170711	Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication, right leg
	170712	Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication, left leg
	170713	Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication, bilateral legs
	170718	Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication, other extremity
	170719	Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication, unspecified extremity
	17072	Atherosclerosis of other type of bypass graft(s) of the extremities with rest pain
	170721	Atherosclerosis of other type of bypass graft(s) of the extremities with rest pain, right leg
	170722	Atherosclerosis of other type of bypass graft(s) of the extremities with rest pain, left leg
	170723	Atherosclerosis of other type of bypass graft(s) of the extremities with rest pain, bilateral legs
	170728	Atherosclerosis of other type of bypass graft(s) of the extremities with rest pain, other extremity

	170729	Atherosclerosis of other type of bypass graft(s) of the extremities with rest pain, unspecified extremity
	17073	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration
	170731	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of thigh
	170732	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of calf
	170733	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of ankle
	170734	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of heel and midfoot
	170735	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of other part of foot
	170738	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of other part of lower leg
	170739	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of unspecified site
	17074	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration
	170741	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of thigh
	170742	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of calf
	170743	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of ankle
	170744	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of heel and midfoot
	170745	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of other part of foot
	170748	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of other part of lower leg
	170749	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of unspecified site
	17075	Atherosclerosis of other type of bypass graft(s) of other extremity with ulceration
	17076	Atherosclerosis of other type of bypass graft(s) of the extremities with gangrene
	170761	Atherosclerosis of other type of bypass graft(s) of the extremities with gangrene, right leg
	170762	Atherosclerosis of other type of bypass graft(s) of the extremities with gangrene, left leg

	170763	Atherosclerosis of other type of bypass graft(s) of the extremities with gangrene, bilateral legs
	170768	Atherosclerosis of other type of bypass graft(s) of the extremities with gangrene, other extremity
	170769	Atherosclerosis of other type of bypass graft(s) of the extremities with gangrene, unspecified extremity
	17079	Other atherosclerosis of other type of bypass graft(s) of the extremities
	170791	Other atherosclerosis of other type of bypass graft(s) of the extremities, right leg
	170792	Other atherosclerosis of other type of bypass graft(s) of the extremities, left leg
	170793	Other atherosclerosis of other type of bypass graft(s) of the extremities, bilateral legs
	170798	Other atherosclerosis of other type of bypass graft(s) of the extremities, other extremity
	170799	Other atherosclerosis of other type of bypass graft(s) of the extremities, unspecified extremity
	1708	Atherosclerosis of other arteries
	1709	Other and unspecified atherosclerosis
	17090	Unspecified atherosclerosis
	17091	Generalized atherosclerosis
	17092	Chronic total occlusion of artery of the extremities
	173	Other peripheral vascular diseases
	1730	Raynaud's syndrome
	17300	Raynaud's syndrome without gangrene
	17301	Raynaud's syndrome with gangrene
	1731	Thromboangiitis obliterans [Buerger's disease]
	1738	Other specified peripheral vascular diseases
	17381	Erythromelalgia
	17389	Other specified peripheral vascular diseases
	1739	Peripheral vascular disease, unspecified
	1791	Aortitis in diseases classified elsewhere
	1798	Other disorders of arteries, arterioles and capillaries in diseases classified elsewhere
Rheumatic Heart Disease	I01	Rheumatic fever with heart involvement
	I010	Acute rheumatic pericarditis
	I011	Acute rheumatic endocarditis
	I012	Acute rheumatic myocarditis
	I018	Other acute rheumatic heart disease
	I019	Acute rheumatic heart disease, unspecified
	I020	Rheumatic chorea with heart involvement
	I05	Rheumatic mitral valve diseases

	I050	Rheumatic mitral stenosis
	I051	Rheumatic mitral insufficiency
	I052	Rheumatic mitral stenosis with insufficiency
	I058	Other rheumatic mitral valve diseases
	I059	Rheumatic mitral valve disease, unspecified
	I06	Rheumatic aortic valve diseases
	I060	Rheumatic aortic stenosis
	I061	Rheumatic aortic insufficiency
	I062	Rheumatic aortic stenosis with insufficiency
	I068	Other rheumatic aortic valve diseases
	I069	Rheumatic aortic valve disease, unspecified
	I07	Rheumatic tricuspid valve diseases
	I070	Rheumatic tricuspid stenosis
	I071	Rheumatic tricuspid insufficiency
	I072	Rheumatic tricuspid stenosis and insufficiency
	I078	Other rheumatic tricuspid valve diseases
	I079	Rheumatic tricuspid valve disease, unspecified
	I08	Multiple valve diseases
	I080	Rheumatic disorders of both mitral and aortic valves
	I081	Rheumatic disorders of both mitral and tricuspid valves
	I082	Rheumatic disorders of both aortic and tricuspid valves
	I083	Combined rheumatic disorders of mitral, aortic and tricuspid valves
	I088	Other rheumatic multiple valve diseases
	I089	Rheumatic multiple valve disease, unspecified
	I09	Other rheumatic heart diseases
	I090	Rheumatic myocarditis
	I091	Rheumatic diseases of endocardium, valve unspecified
	I092	Chronic rheumatic pericarditis
	I098	Other specified rheumatic heart diseases
	I0981	Rheumatic heart failure
	I0989	Other specified rheumatic heart diseases
	I099	Rheumatic heart disease, unspecified
Cerebrovascular Disease	G45	Transient cerebral ischemic attacks and related syndromes
	G450	Vertebro-basilar artery syndrome
	G451	Carotid artery syndrome (hemispheric)
	G452	Multiple and bilateral precerebral artery syndromes
	G454	Transient global amnesia
	G458	Other transient cerebral ischemic attacks and related syndromes
	G459	Transient cerebral ischemic attack, unspecified
	G46	Vascular syndromes of brain in cerebrovascular diseases
	G460	Middle cerebral artery syndrome
	G461	Anterior cerebral artery syndrome

	G462	Posterior cerebral artery syndrome
	G463	Brain stem stroke syndrome
	G464	Cerebellar stroke syndrome
	G465	Pure motor lacunar syndrome
	G466	Pure sensory lacunar syndrome
	G467	Other lacunar syndromes
	G468	Other vascular syndromes of brain in cerebrovascular diseases
	I60	Nontraumatic subarachnoid hemorrhage
	I600	Nontraumatic subarachnoid hemorrhage from carotid siphon and bifurcation
	I6000	Nontraumatic subarachnoid hemorrhage from unspecified carotid siphon and bifurcation
	I6001	Nontraumatic subarachnoid hemorrhage from right carotid siphon and bifurcation
	I6002	Nontraumatic subarachnoid hemorrhage from left carotid siphon and bifurcation
	I601	Nontraumatic subarachnoid hemorrhage from middle cerebral artery
	I6010	Nontraumatic subarachnoid hemorrhage from unspecified middle cerebral artery
	I6011	Nontraumatic subarachnoid hemorrhage from right middle cerebral artery
	I6012	Nontraumatic subarachnoid hemorrhage from left middle cerebral artery
	I602	Nontraumatic subarachnoid hemorrhage from anterior communicating artery
	I6020	Nontraumatic subarachnoid hemorrhage from unspecified anterior communicating artery
	I6021	Nontraumatic subarachnoid hemorrhage from right anterior communicating artery
	I6022	Nontraumatic subarachnoid hemorrhage from left anterior communicating artery
	I603	Nontraumatic subarachnoid hemorrhage from posterior communicating artery
	I6030	Nontraumatic subarachnoid hemorrhage from unspecified posterior communicating artery
	I6031	Nontraumatic subarachnoid hemorrhage from right posterior communicating artery
	I6032	Nontraumatic subarachnoid hemorrhage from left posterior communicating artery
	I604	Nontraumatic subarachnoid hemorrhage from basilar artery
	I605	Nontraumatic subarachnoid hemorrhage from vertebral artery

	I6050	Nontraumatic subarachnoid hemorrhage from unspecified vertebral artery
	I6051	Nontraumatic subarachnoid hemorrhage from right vertebral artery
	I6052	Nontraumatic subarachnoid hemorrhage from left vertebral artery
	I606	Nontraumatic subarachnoid hemorrhage from other intracranial arteries
	I607	Nontraumatic subarachnoid hemorrhage from unspecified intracranial artery
	I608	Other nontraumatic subarachnoid hemorrhage
	I609	Nontraumatic subarachnoid hemorrhage, unspecified
	I61	Nontraumatic intracerebral hemorrhage
	I610	Nontraumatic intracerebral hemorrhage in hemisphere, subcortical
	I611	Nontraumatic intracerebral hemorrhage in hemisphere, cortical
	I612	Nontraumatic intracerebral hemorrhage in hemisphere, unspecified
	I613	Nontraumatic intracerebral hemorrhage in brain stem
	I614	Nontraumatic intracerebral hemorrhage in cerebellum
	I615	Nontraumatic intracerebral hemorrhage, intraventricular
	I616	Nontraumatic intracerebral hemorrhage, multiple localized
	I618	Other nontraumatic intracerebral hemorrhage
	I619	Nontraumatic intracerebral hemorrhage, unspecified
	I62	Other and unspecified nontraumatic intracranial hemorrhage
	I621	Nontraumatic extradural hemorrhage
	I629	Nontraumatic intracranial hemorrhage, unspecified
	I63	Cerebral infarction
	I630	Cerebral infarction due to thrombosis of precerebral arteries
	I6300	Cerebral infarction due to thrombosis of unspecified precerebral artery
	I6301	Cerebral infarction due to thrombosis of vertebral artery
	I63011	Cerebral infarction due to thrombosis of right vertebral artery
	I63012	Cerebral infarction due to thrombosis of left vertebral artery
	I63019	Cerebral infarction due to thrombosis of unspecified vertebral artery
	I6302	Cerebral infarction due to thrombosis of basilar artery
	I6303	Cerebral infarction due to thrombosis of carotid artery
	I63031	Cerebral infarction due to thrombosis of right carotid artery
	I63032	Cerebral infarction due to thrombosis of left carotid artery
	I63039	Cerebral infarction due to thrombosis of unspecified carotid artery
	I6309	Cerebral infarction due to thrombosis of other precerebral artery



	I631	Cerebral infarction due to embolism of precerebral arteries
	I6310	Cerebral infarction due to embolism of unspecified precerebral artery
	I6311	Cerebral infarction due to embolism of vertebral artery
	I63111	Cerebral infarction due to embolism of right vertebral artery
	I63112	Cerebral infarction due to embolism of left vertebral artery
	I63119	Cerebral infarction due to embolism of unspecified vertebral artery
	I6312	Cerebral infarction due to embolism of basilar artery
	I6313	Cerebral infarction due to embolism of carotid artery
	I63131	Cerebral infarction due to embolism of right carotid artery
	I63132	Cerebral infarction due to embolism of left carotid artery
	I63139	Cerebral infarction due to embolism of unspecified carotid artery
	I6319	Cerebral infarction due to embolism of other precerebral artery
	I632	Cerebral infarction due to unspecified occlusion or stenosis of precerebral arteries
	I6320	Cerebral infarction due to unspecified occlusion or stenosis of unspecified precerebral arteries
	I6321	Cerebral infarction due to unspecified occlusion or stenosis of vertebral arteries
	I63211	Cerebral infarction due to unspecified occlusion or stenosis of right vertebral arteries
	I63212	Cerebral infarction due to unspecified occlusion or stenosis of left vertebral arteries
	I63219	Cerebral infarction due to unspecified occlusion or stenosis of unspecified vertebral arteries
	I6322	Cerebral infarction due to unspecified occlusion or stenosis of basilar arteries
	I6323	Cerebral infarction due to unspecified occlusion or stenosis of carotid arteries
	I63231	Cerebral infarction due to unspecified occlusion or stenosis of right carotid arteries
	I63232	Cerebral infarction due to unspecified occlusion or stenosis of left carotid arteries
	I63239	Cerebral infarction due to unspecified occlusion or stenosis of unspecified carotid arteries
	I6329	Cerebral infarction due to unspecified occlusion or stenosis of other precerebral arteries
	I633	Cerebral infarction due to thrombosis of cerebral arteries
	I6330	Cerebral infarction due to thrombosis of unspecified cerebral artery
	I6331	Cerebral infarction due to thrombosis of middle cerebral artery

	I63311	Cerebral infarction due to thrombosis of right middle cerebral artery
	I63312	Cerebral infarction due to thrombosis of left middle cerebral artery
	I63319	Cerebral infarction due to thrombosis of unspecified middle cerebral artery
	I6332	Cerebral infarction due to thrombosis of anterior cerebral artery
	I63321	Cerebral infarction due to thrombosis of right anterior cerebral artery
	I63322	Cerebral infarction due to thrombosis of left anterior cerebral artery
	I63329	Cerebral infarction due to thrombosis of unspecified anterior cerebral artery
	I6333	Cerebral infarction due to thrombosis of posterior cerebral artery
	I63331	Cerebral infarction due to thrombosis of right posterior cerebral artery
	I63332	Cerebral infarction due to thrombosis of left posterior cerebral artery
	I63339	Cerebral infarction due to thrombosis of unspecified posterior cerebral artery
	I6334	Cerebral infarction due to thrombosis of cerebellar artery
	I63341	Cerebral infarction due to thrombosis of right cerebellar artery
	I63342	Cerebral infarction due to thrombosis of left cerebellar artery
	I63349	Cerebral infarction due to thrombosis of unspecified cerebellar artery
	I6339	Cerebral infarction due to thrombosis of other cerebral artery
	I634	Cerebral infarction due to embolism of cerebral arteries
	I6340	Cerebral infarction due to embolism of unspecified cerebral artery
	I6341	Cerebral infarction due to embolism of middle cerebral artery
	I63411	Cerebral infarction due to embolism of right middle cerebral artery
	I63412	Cerebral infarction due to embolism of left middle cerebral artery
	I63419	Cerebral infarction due to embolism of unspecified middle cerebral artery
	I6342	Cerebral infarction due to embolism of anterior cerebral artery
	I63421	Cerebral infarction due to embolism of right anterior cerebral artery
	I63422	Cerebral infarction due to embolism of left anterior cerebral artery
	I63429	Cerebral infarction due to embolism of unspecified anterior cerebral artery
	I6343	Cerebral infarction due to embolism of posterior cerebral artery

	I63431	Cerebral infarction due to embolism of right posterior cerebral artery
	I63432	Cerebral infarction due to embolism of left posterior cerebral artery
	I63439	Cerebral infarction due to embolism of unspecified posterior cerebral artery
	I6344	Cerebral infarction due to embolism of cerebellar artery
	I63441	Cerebral infarction due to embolism of right cerebellar artery
	I63442	Cerebral infarction due to embolism of left cerebellar artery
	I63449	Cerebral infarction due to embolism of unspecified cerebellar artery
	I6349	Cerebral infarction due to embolism of other cerebral artery
	I635	Cerebral infarction due to unspecified occlusion or stenosis of cerebral arteries
	I6350	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebral artery
	I6351	Cerebral infarction due to unspecified occlusion or stenosis of middle cerebral artery
	I63511	Cerebral infarction due to unspecified occlusion or stenosis of right middle cerebral artery
	I63512	Cerebral infarction due to unspecified occlusion or stenosis of left middle cerebral artery
	I63519	Cerebral infarction due to unspecified occlusion or stenosis of unspecified middle cerebral artery
	I6352	Cerebral infarction due to unspecified occlusion or stenosis of anterior cerebral artery
	I63521	Cerebral infarction due to unspecified occlusion or stenosis of right anterior cerebral artery
	I63522	Cerebral infarction due to unspecified occlusion or stenosis of left anterior cerebral artery
	I63529	Cerebral infarction due to unspecified occlusion or stenosis of unspecified anterior cerebral artery
	I6353	Cerebral infarction due to unspecified occlusion or stenosis of posterior cerebral artery
	I63531	Cerebral infarction due to unspecified occlusion or stenosis of right posterior cerebral artery
	I63532	Cerebral infarction due to unspecified occlusion or stenosis of left posterior cerebral artery
	I63539	Cerebral infarction due to unspecified occlusion or stenosis of unspecified posterior cerebral artery
	I6354	Cerebral infarction due to unspecified occlusion or stenosis of cerebellar artery
	I63541	Cerebral infarction due to unspecified occlusion or stenosis of right cerebellar artery

	I63542	Cerebral infarction due to unspecified occlusion or stenosis of left cerebellar artery
	I63549	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebellar artery
	I6359	Cerebral infarction due to unspecified occlusion or stenosis of other cerebral artery
	I636	Cerebral infarction due to cerebral venous thrombosis, nonpyogenic
	I637	
	I638	Other cerebral infarction
	I639	Cerebral infarction, unspecified
	I64	Stroke, not specified as haemorrhage or infarction
	I641	Stroke, not specified as haemorrhage or infarction
	I65	Occlusion and stenosis of precerebral arteries, not resulting in cerebral infarction
	I650	Occlusion and stenosis of vertebral artery
	I6501	Occlusion and stenosis of right vertebral artery
	I6502	Occlusion and stenosis of left vertebral artery
	I6503	Occlusion and stenosis of bilateral vertebral arteries
	I6509	Occlusion and stenosis of unspecified vertebral artery
	I651	Occlusion and stenosis of basilar artery
	I652	Occlusion and stenosis of carotid artery
	I6521	Occlusion and stenosis of right carotid artery
	I6522	Occlusion and stenosis of left carotid artery
	I6523	Occlusion and stenosis of bilateral carotid arteries
	I6529	Occlusion and stenosis of unspecified carotid artery
	I653	Occlusion and stenosis of multiple and bilateral precerebral arteries
	I658	Occlusion and stenosis of other precerebral arteries
	I659	Occlusion and stenosis of unspecified precerebral artery
	I66	Occlusion and stenosis of cerebral arteries, not resulting in cerebral infarction
	I660	Occlusion and stenosis of middle cerebral artery
	I6601	Occlusion and stenosis of right middle cerebral artery
	I6602	Occlusion and stenosis of left middle cerebral artery
	I6603	Occlusion and stenosis of bilateral middle cerebral arteries
	I6609	Occlusion and stenosis of unspecified middle cerebral artery
	I661	Occlusion and stenosis of anterior cerebral artery
	I6611	Occlusion and stenosis of right anterior cerebral artery
	I6612	Occlusion and stenosis of left anterior cerebral artery
	I6613	Occlusion and stenosis of bilateral anterior cerebral arteries
	I6619	Occlusion and stenosis of unspecified anterior cerebral artery
	I662	Occlusion and stenosis of posterior cerebral artery

	I6621	Occlusion and stenosis of right posterior cerebral artery
	I6622	Occlusion and stenosis of left posterior cerebral artery
	I6623	Occlusion and stenosis of bilateral posterior cerebral arteries
	I6629	Occlusion and stenosis of unspecified posterior cerebral artery
	I663	Occlusion and stenosis of cerebellar arteries
	I664	Occlusion and stenosis of multiple and bilateral cerebral arteries
	I668	Occlusion and stenosis of other cerebral arteries
	I669	Occlusion and stenosis of unspecified cerebral artery
	I67	Other cerebrovascular diseases
	I671	Cerebral aneurysm, nonruptured
	I672	Cerebral atherosclerosis
	I674	Hypertensive encephalopathy
	I675	Moyamoya disease
	I676	Nonpyogenic thrombosis of intracranial venous system
	I677	Cerebral arteritis, not elsewhere classified
	I678	Other specified cerebrovascular diseases
	I6781	Acute cerebrovascular insufficiency
	I6782	Cerebral ischemia
	I6783	Posterior reversible encephalopathy syndrome
	I6784	Cerebral vasospasm and vasoconstriction
	I67841	Reversible cerebrovascular vasoconstriction syndrome
	I67848	Other cerebrovascular vasospasm and vasoconstriction
	I6789	Other cerebrovascular disease
	I679	Cerebrovascular disease, unspecified
	I68	Cerebrovascular disorders in diseases classified elsewhere
	I680	Cerebral amyloid angiopathy
	I681	Other cerebrovascular disorders in diseases classified elsewhere
	I682	Cerebral arteritis in other diseases classified elsewhere
	I688	Other cerebrovascular disorders in diseases classified elsewhere
	I69	Sequelae of cerebrovascular disease
	I690	Sequelae of nontraumatic subarachnoid hemorrhage
	I6900	Unspecified sequelae of nontraumatic subarachnoid hemorrhage
	I6901	Cognitive deficits following nontraumatic subarachnoid hemorrhage
	I6902	Speech and language deficits following nontraumatic subarachnoid hemorrhage
	I69020	Aphasia following nontraumatic subarachnoid hemorrhage
	I69021	Dysphasia following nontraumatic subarachnoid hemorrhage
	I69022	Dysarthria following nontraumatic subarachnoid hemorrhage
	I69023	Fluency disorder following nontraumatic subarachnoid hemorrhage

	169028	Other speech and language deficits following nontraumatic subarachnoid hemorrhage
	16903	Monoplegia of upper limb following nontraumatic subarachnoid hemorrhage
	169031	Monoplegia of upper limb following nontraumatic subarachnoid hemorrhage affecting right dominant side
	169032	Monoplegia of upper limb following nontraumatic subarachnoid hemorrhage affecting left dominant side
	169033	Monoplegia of upper limb following nontraumatic subarachnoid hemorrhage affecting right non-dominant side
	169034	Monoplegia of upper limb following nontraumatic subarachnoid hemorrhage affecting left non-dominant side
	169039	Monoplegia of upper limb following nontraumatic subarachnoid hemorrhage affecting unspecified side
	16904	Monoplegia of lower limb following nontraumatic subarachnoid hemorrhage
	169041	Monoplegia of lower limb following nontraumatic subarachnoid hemorrhage affecting right dominant side
	169042	Monoplegia of lower limb following nontraumatic subarachnoid hemorrhage affecting left dominant side
	169043	Monoplegia of lower limb following nontraumatic subarachnoid hemorrhage affecting right non-dominant side
	169044	Monoplegia of lower limb following nontraumatic subarachnoid hemorrhage affecting left non-dominant side
	169049	Monoplegia of lower limb following nontraumatic subarachnoid hemorrhage affecting unspecified side
	16905	Hemiplegia and hemiparesis following nontraumatic subarachnoid hemorrhage
	169051	Hemiplegia and hemiparesis following nontraumatic subarachnoid hemorrhage affecting right dominant side
	169052	Hemiplegia and hemiparesis following nontraumatic subarachnoid hemorrhage affecting left dominant side
	169053	Hemiplegia and hemiparesis following nontraumatic subarachnoid hemorrhage affecting right non-dominant side
	169054	Hemiplegia and hemiparesis following nontraumatic subarachnoid hemorrhage affecting left non-dominant side
	169059	Hemiplegia and hemiparesis following nontraumatic subarachnoid hemorrhage affecting unspecified side
	16906	Other paralytic syndrome following nontraumatic subarachnoid hemorrhage
	169061	Other paralytic syndrome following nontraumatic subarachnoid hemorrhage affecting right dominant side

	169062	Other paralytic syndrome following nontraumatic subarachnoid hemorrhage affecting left dominant side
	169063	Other paralytic syndrome following nontraumatic subarachnoid hemorrhage affecting right non-dominant side
	169064	Other paralytic syndrome following nontraumatic subarachnoid hemorrhage affecting left non-dominant side
	169065	Other paralytic syndrome following nontraumatic subarachnoid hemorrhage, bilateral
	169069	Other paralytic syndrome following nontraumatic subarachnoid hemorrhage affecting unspecified side
	16909	Other sequelae of nontraumatic subarachnoid hemorrhage
	169090	Apraxia following nontraumatic subarachnoid hemorrhage
	169091	Dysphagia following nontraumatic subarachnoid hemorrhage
	169092	Facial weakness following nontraumatic subarachnoid hemorrhage
	169093	Ataxia following nontraumatic subarachnoid hemorrhage
	169098	Other sequelae following nontraumatic subarachnoid hemorrhage
	1691	Sequelae of nontraumatic intracerebral hemorrhage
	16910	Unspecified sequelae of nontraumatic intracerebral hemorrhage
	16911	Cognitive deficits following nontraumatic intracerebral hemorrhage
	16912	Speech and language deficits following nontraumatic intracerebral hemorrhage
	169120	Aphasia following nontraumatic intracerebral hemorrhage
	169121	Dysphasia following nontraumatic intracerebral hemorrhage
	169122	Dysarthria following nontraumatic intracerebral hemorrhage
	169123	Fluency disorder following nontraumatic intracerebral hemorrhage
	169128	Other speech and language deficits following nontraumatic intracerebral hemorrhage
	16913	Monoplegia of upper limb following nontraumatic intracerebral hemorrhage
	169131	Monoplegia of upper limb following nontraumatic intracerebral hemorrhage affecting right dominant side
	169132	Monoplegia of upper limb following nontraumatic intracerebral hemorrhage affecting left dominant side
	169133	Monoplegia of upper limb following nontraumatic intracerebral hemorrhage affecting right non-dominant side
	169134	Monoplegia of upper limb following nontraumatic intracerebral hemorrhage affecting left non-dominant side
	169139	Monoplegia of upper limb following nontraumatic intracerebral hemorrhage affecting unspecified side

	I6914	Monoplegia of lower limb following nontraumatic intracerebral hemorrhage
	I69141	Monoplegia of lower limb following nontraumatic intracerebral hemorrhage affecting right dominant side
	I69142	Monoplegia of lower limb following nontraumatic intracerebral hemorrhage affecting left dominant side
	I69143	Monoplegia of lower limb following nontraumatic intracerebral hemorrhage affecting right non-dominant side
	I69144	Monoplegia of lower limb following nontraumatic intracerebral hemorrhage affecting left non-dominant side
	I69149	Monoplegia of lower limb following nontraumatic intracerebral hemorrhage affecting unspecified side
	I6915	Hemiplegia and hemiparesis following nontraumatic intracerebral hemorrhage
	I69151	Hemiplegia and hemiparesis following nontraumatic intracerebral hemorrhage affecting right dominant side
	I69152	Hemiplegia and hemiparesis following nontraumatic intracerebral hemorrhage affecting left dominant side
	I69153	Hemiplegia and hemiparesis following nontraumatic intracerebral hemorrhage affecting right non-dominant side
	I69154	Hemiplegia and hemiparesis following nontraumatic intracerebral hemorrhage affecting left non-dominant side
	I69159	Hemiplegia and hemiparesis following nontraumatic intracerebral hemorrhage affecting unspecified side
	I6916	Other paralytic syndrome following nontraumatic intracerebral hemorrhage
	I69161	Other paralytic syndrome following nontraumatic intracerebral hemorrhage affecting right dominant side
	I69162	Other paralytic syndrome following nontraumatic intracerebral hemorrhage affecting left dominant side
	I69163	Other paralytic syndrome following nontraumatic intracerebral hemorrhage affecting right non-dominant side
	I69164	Other paralytic syndrome following nontraumatic intracerebral hemorrhage affecting left non-dominant side
	I69165	Other paralytic syndrome following nontraumatic intracerebral hemorrhage, bilateral
	I69169	Other paralytic syndrome following nontraumatic intracerebral hemorrhage affecting unspecified side
	I6919	Other sequelae of nontraumatic intracerebral hemorrhage
	I69190	Apraxia following nontraumatic intracerebral hemorrhage
	I69191	Dysphagia following nontraumatic intracerebral hemorrhage
	I69192	Facial weakness following nontraumatic intracerebral hemorrhage



	I69193	Ataxia following nontraumatic intracerebral hemorrhage
	I69198	Other sequelae of nontraumatic intracerebral hemorrhage
	I692	Sequelae of other nontraumatic intracranial hemorrhage
	I6920	Unspecified sequelae of other nontraumatic intracranial hemorrhage
	I6921	Cognitive deficits following other nontraumatic intracranial hemorrhage
	I6922	Speech and language deficits following other nontraumatic intracranial hemorrhage
	I69220	Aphasia following other nontraumatic intracranial hemorrhage
	I69221	Dysphasia following other nontraumatic intracranial hemorrhage
	I69222	Dysarthria following other nontraumatic intracranial hemorrhage
	I69223	Fluency disorder following other nontraumatic intracranial hemorrhage
	I69228	Other speech and language deficits following other nontraumatic intracranial hemorrhage
	I6923	Monoplegia of upper limb following other nontraumatic intracranial hemorrhage
	I69231	Monoplegia of upper limb following other nontraumatic intracranial hemorrhage affecting right dominant side
	I69232	Monoplegia of upper limb following other nontraumatic intracranial hemorrhage affecting left dominant side
	I69233	Monoplegia of upper limb following other nontraumatic intracranial hemorrhage affecting right non-dominant side
	I69234	Monoplegia of upper limb following other nontraumatic intracranial hemorrhage affecting left non-dominant side
	I69239	Monoplegia of upper limb following other nontraumatic intracranial hemorrhage affecting unspecified side
	I6924	Monoplegia of lower limb following other nontraumatic intracranial hemorrhage
	I69241	Monoplegia of lower limb following other nontraumatic intracranial hemorrhage affecting right dominant side
	I69242	Monoplegia of lower limb following other nontraumatic intracranial hemorrhage affecting left dominant side
	I69243	Monoplegia of lower limb following other nontraumatic intracranial hemorrhage affecting right non-dominant side
	I69244	Monoplegia of lower limb following other nontraumatic intracranial hemorrhage affecting left non-dominant side
	I69249	Monoplegia of lower limb following other nontraumatic intracranial hemorrhage affecting unspecified side
	I6925	Hemiplegia and hemiparesis following other nontraumatic intracranial hemorrhage

	169251	Hemiplegia and hemiparesis following other nontraumatic intracranial hemorrhage affecting right dominant side
	169252	Hemiplegia and hemiparesis following other nontraumatic intracranial hemorrhage affecting left dominant side
	169253	Hemiplegia and hemiparesis following other nontraumatic intracranial hemorrhage affecting right non-dominant side
	169254	Hemiplegia and hemiparesis following other nontraumatic intracranial hemorrhage affecting left non-dominant side
	169259	Hemiplegia and hemiparesis following other nontraumatic intracranial hemorrhage affecting unspecified side
	16926	Other paralytic syndrome following other nontraumatic intracranial hemorrhage
	169261	Other paralytic syndrome following other nontraumatic intracranial hemorrhage affecting right dominant side
	169262	Other paralytic syndrome following other nontraumatic intracranial hemorrhage affecting left dominant side
	169263	Other paralytic syndrome following other nontraumatic intracranial hemorrhage affecting right non-dominant side
	169264	Other paralytic syndrome following other nontraumatic intracranial hemorrhage affecting left non-dominant side
	169265	Other paralytic syndrome following other nontraumatic intracranial hemorrhage, bilateral
	169269	Other paralytic syndrome following other nontraumatic intracranial hemorrhage affecting unspecified side
	16929	Other sequelae of other nontraumatic intracranial hemorrhage
	169290	Apraxia following other nontraumatic intracranial hemorrhage
	169291	Dysphagia following other nontraumatic intracranial hemorrhage
	169292	Facial weakness following other nontraumatic intracranial hemorrhage
	169293	Ataxia following other nontraumatic intracranial hemorrhage
	169298	Other sequelae of other nontraumatic intracranial hemorrhage
	1693	Sequelae of cerebral infarction
	16930	Unspecified sequelae of cerebral infarction
	16931	Cognitive deficits following cerebral infarction
	16932	Speech and language deficits following cerebral infarction
	169320	Aphasia following cerebral infarction
	169321	Dysphasia following cerebral infarction
	169322	Dysarthria following cerebral infarction
	169323	Fluency disorder following cerebral infarction
	169328	Other speech and language deficits following cerebral infarction
	16933	Monoplegia of upper limb following cerebral infarction

	I69331	Monoplegia of upper limb following cerebral infarction affecting right dominant side
	I69332	Monoplegia of upper limb following cerebral infarction affecting left dominant side
	I69333	Monoplegia of upper limb following cerebral infarction affecting right non-dominant side
	I69334	Monoplegia of upper limb following cerebral infarction affecting left non-dominant side
	I69339	Monoplegia of upper limb following cerebral infarction affecting unspecified side
	I6934	Monoplegia of lower limb following cerebral infarction
	I69341	Monoplegia of lower limb following cerebral infarction affecting right dominant side
	I69342	Monoplegia of lower limb following cerebral infarction affecting left dominant side
	I69343	Monoplegia of lower limb following cerebral infarction affecting right non-dominant side
	I69344	Monoplegia of lower limb following cerebral infarction affecting left non-dominant side
	I69349	Monoplegia of lower limb following cerebral infarction affecting unspecified side
	I6935	Hemiplegia and hemiparesis following cerebral infarction
	I69351	Hemiplegia and hemiparesis following cerebral infarction affecting right dominant side
	I69352	Hemiplegia and hemiparesis following cerebral infarction affecting left dominant side
	I69353	Hemiplegia and hemiparesis following cerebral infarction affecting right non-dominant side
	I69354	Hemiplegia and hemiparesis following cerebral infarction affecting left non-dominant side
	I69359	Hemiplegia and hemiparesis following cerebral infarction affecting unspecified side
	I6936	Other paralytic syndrome following cerebral infarction
	I69361	Other paralytic syndrome following cerebral infarction affecting right dominant side
	I69362	Other paralytic syndrome following cerebral infarction affecting left dominant side
	I69363	Other paralytic syndrome following cerebral infarction affecting right non-dominant side
	I69364	Other paralytic syndrome following cerebral infarction affecting left non-dominant side
	I69365	Other paralytic syndrome following cerebral infarction, bilateral

	169369	Other paralytic syndrome following cerebral infarction affecting unspecified side
	16939	Other sequelae of cerebral infarction
	169390	Apraxia following cerebral infarction
	169391	Dysphagia following cerebral infarction
	169392	Facial weakness following cerebral infarction
	169393	Ataxia following cerebral infarction
	169398	Other sequelae of cerebral infarction
	1694	Sequelae of stroke, not specified as haemorrhage or infarction
	1698	Sequelae of other cerebrovascular diseases
	16980	Unspecified sequelae of other cerebrovascular disease
	16981	Cognitive deficits following other cerebrovascular disease
	16982	Speech and language deficits following other cerebrovascular disease
	169820	Aphasia following other cerebrovascular disease
	169821	Dysphasia following other cerebrovascular disease
	169822	Dysarthria following other cerebrovascular disease
	169823	Fluency disorder following other cerebrovascular disease
	169828	Other speech and language deficits following other cerebrovascular disease
	16983	Monoplegia of upper limb following other cerebrovascular disease
	169831	Monoplegia of upper limb following other cerebrovascular disease affecting right dominant side
	169832	Monoplegia of upper limb following other cerebrovascular disease affecting left dominant side
	169833	Monoplegia of upper limb following other cerebrovascular disease affecting right non-dominant side
	169834	Monoplegia of upper limb following other cerebrovascular disease affecting left non-dominant side
	169839	Monoplegia of upper limb following other cerebrovascular disease affecting unspecified side
	16984	Monoplegia of lower limb following other cerebrovascular disease
	169841	Monoplegia of lower limb following other cerebrovascular disease affecting right dominant side
	169842	Monoplegia of lower limb following other cerebrovascular disease affecting left dominant side
	169843	Monoplegia of lower limb following other cerebrovascular disease affecting right non-dominant side
	169844	Monoplegia of lower limb following other cerebrovascular disease affecting left non-dominant side

	169849	Monoplegia of lower limb following other cerebrovascular disease affecting unspecified side
	16985	Hemiplegia and hemiparesis following other cerebrovascular disease
	169851	Hemiplegia and hemiparesis following other cerebrovascular disease affecting right dominant side
	169852	Hemiplegia and hemiparesis following other cerebrovascular disease affecting left dominant side
	169853	Hemiplegia and hemiparesis following other cerebrovascular disease affecting right non-dominant side
	169854	Hemiplegia and hemiparesis following other cerebrovascular disease affecting left non-dominant side
	169859	Hemiplegia and hemiparesis following other cerebrovascular disease affecting unspecified side
	16986	Other paralytic syndrome following other cerebrovascular disease
	169861	Other paralytic syndrome following other cerebrovascular disease affecting right dominant side
	169862	Other paralytic syndrome following other cerebrovascular disease affecting left dominant side
	169863	Other paralytic syndrome following other cerebrovascular disease affecting right non-dominant side
	169864	Other paralytic syndrome following other cerebrovascular disease affecting left non-dominant side
	169865	Other paralytic syndrome following other cerebrovascular disease, bilateral
	169869	Other paralytic syndrome following other cerebrovascular disease affecting unspecified side
	16989	Other sequelae of other cerebrovascular disease
	169890	Apraxia following other cerebrovascular disease
	169891	Dysphagia following other cerebrovascular disease
	169892	Facial weakness following other cerebrovascular disease
	169893	Ataxia following other cerebrovascular disease
	169898	Other sequelae of other cerebrovascular disease
	1699	Sequelae of unspecified cerebrovascular diseases
	16990	Unspecified sequelae of unspecified cerebrovascular disease
	16991	Cognitive deficits following unspecified cerebrovascular disease
	16992	Speech and language deficits following unspecified cerebrovascular disease
	169920	Aphasia following unspecified cerebrovascular disease
	169921	Dysphasia following unspecified cerebrovascular disease
	169922	Dysarthria following unspecified cerebrovascular disease
	169923	Fluency disorder following unspecified cerebrovascular disease

	169928	Other speech and language deficits following unspecified cerebrovascular disease
	16993	Monoplegia of upper limb following unspecified cerebrovascular disease
	169931	Monoplegia of upper limb following unspecified cerebrovascular disease affecting right dominant side
	169932	Monoplegia of upper limb following unspecified cerebrovascular disease affecting left dominant side
	169933	Monoplegia of upper limb following unspecified cerebrovascular disease affecting right non-dominant side
	169934	Monoplegia of upper limb following unspecified cerebrovascular disease affecting left non-dominant side
	169939	Monoplegia of upper limb following unspecified cerebrovascular disease affecting unspecified side
	16994	Monoplegia of lower limb following unspecified cerebrovascular disease
	169941	Monoplegia of lower limb following unspecified cerebrovascular disease affecting right dominant side
	169942	Monoplegia of lower limb following unspecified cerebrovascular disease affecting left dominant side
	169943	Monoplegia of lower limb following unspecified cerebrovascular disease affecting right non-dominant side
	169944	Monoplegia of lower limb following unspecified cerebrovascular disease affecting left non-dominant side
	169949	Monoplegia of lower limb following unspecified cerebrovascular disease affecting unspecified side
	16995	Hemiplegia and hemiparesis following unspecified cerebrovascular disease
	169951	Hemiplegia and hemiparesis following unspecified cerebrovascular disease affecting right dominant side
	169952	Hemiplegia and hemiparesis following unspecified cerebrovascular disease affecting left dominant side
	169953	Hemiplegia and hemiparesis following unspecified cerebrovascular disease affecting right non-dominant side
	169954	Hemiplegia and hemiparesis following unspecified cerebrovascular disease affecting left non-dominant side
	169959	Hemiplegia and hemiparesis following unspecified cerebrovascular disease affecting unspecified side
	16996	Other paralytic syndrome following unspecified cerebrovascular disease
	169961	Other paralytic syndrome following unspecified cerebrovascular disease affecting right dominant side

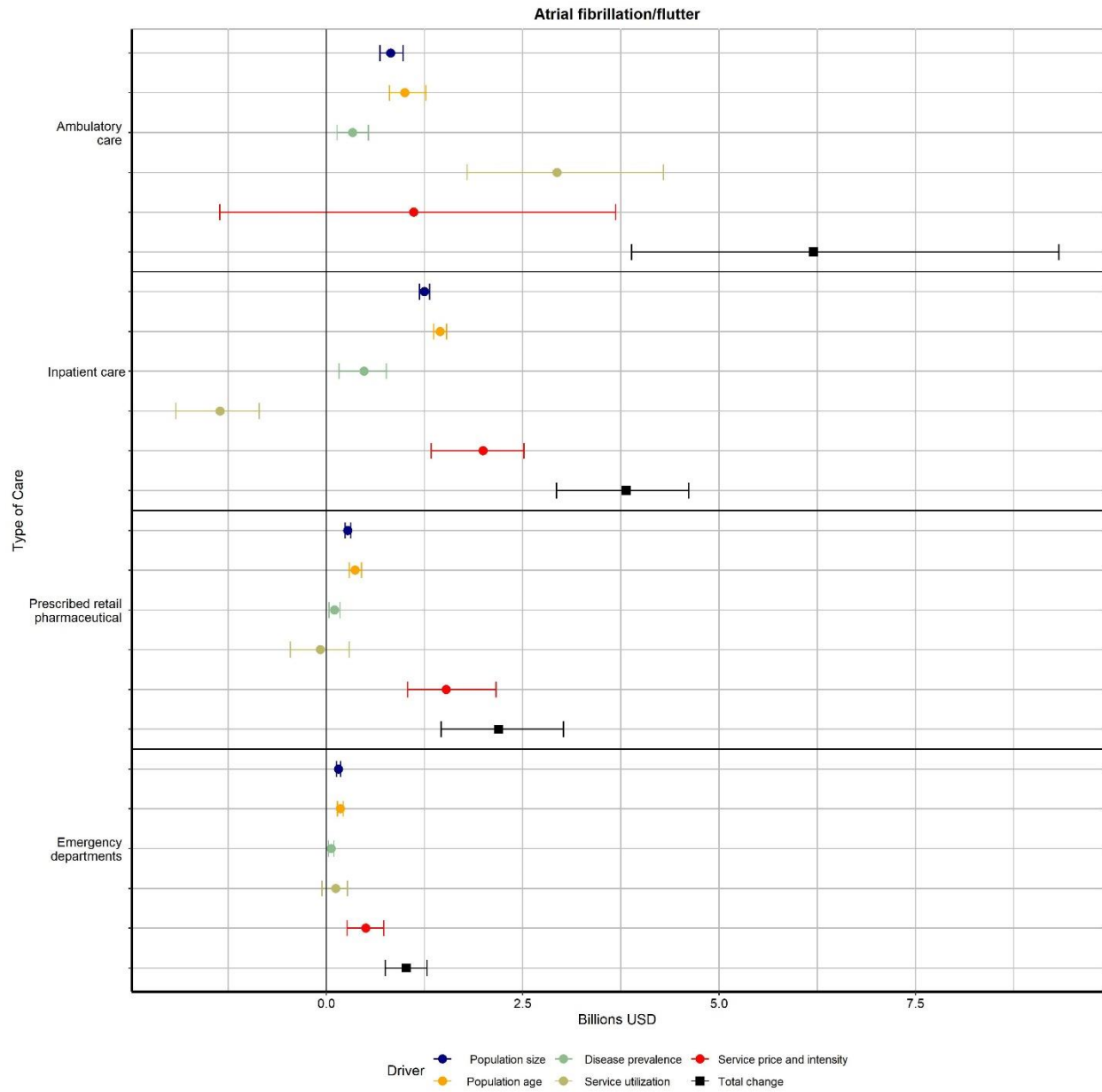
	I69962	Other paralytic syndrome following unspecified cerebrovascular disease affecting left dominant side
	I69963	Other paralytic syndrome following unspecified cerebrovascular disease affecting right non-dominant side
	I69964	Other paralytic syndrome following unspecified cerebrovascular disease affecting left non-dominant side
	I69965	Other paralytic syndrome following unspecified cerebrovascular disease, bilateral
	I69969	Other paralytic syndrome following unspecified cerebrovascular disease affecting unspecified side
	I6999	Other sequelae of unspecified cerebrovascular disease
	I69990	Apraxia following unspecified cerebrovascular disease
	I69991	Dysphagia following unspecified cerebrovascular disease
	I69992	Facial weakness following unspecified cerebrovascular disease
	I69993	Ataxia following unspecified cerebrovascular disease
	I69998	Other sequelae following unspecified cerebrovascular disease
	Z823	Family history of stroke
Treatment of Hyperlipidemia	E753	Sphingolipidosis, unspecified
	E755	Other lipid storage disorders
	E756	Lipid storage disorder, unspecified
	E770	Defects in post-translational modification of lysosomal enzymes
	E778	Other disorders of glycoprotein metabolism
	E779	Disorder of glycoprotein metabolism, unspecified
	E78	Disorders of lipoprotein metabolism and other lipidemias
	E780	Pure hypercholesterolemia
	E781	Pure hyperglyceridemia
	E782	Mixed hyperlipidemia
	E783	Hyperchylomicronemia
	E784	Other hyperlipidemia
	E785	Hyperlipidemia, unspecified
	E786	Lipoprotein deficiency
	E787	Disorders of bile acid and cholesterol metabolism
	E7870	Disorder of bile acid and cholesterol metabolism, unspecified
	E7871	Barth syndrome
	E7872	Smith-Lemli-Opitz syndrome
	E7879	Other disorders of bile acid and cholesterol metabolism
	E788	Other disorders of lipoprotein metabolism
	E7881	Lipoid dermatoarthritis
	E7889	Other lipoprotein metabolism disorders
	E789	Disorder of lipoprotein metabolism, unspecified
	E881	Lipodystrophy, not elsewhere classified
	E8810	Lipodystrophy, not elsewhere classified

	E8811	Lipodystrophy, not elsewhere classified
	E882	Lipomatosis, not elsewhere classified
Treatment of Hypertension	I10	Essential (primary) hypertension
	I100	Essential (primary) hypertension
	I15	Secondary hypertension
	I150	Renovascular hypertension
	I151	Hypertension secondary to other renal disorders
	I152	Hypertension secondary to endocrine disorders
	I158	Other secondary hypertension
	I159	Secondary hypertension, unspecified
	I95	Hypotension
	I958	Other hypotension
	I9581	Postprocedural hypotension
	I9589	Other hypotension
	I959	Hypotension, unspecified
	N262	Page kidney
	R03	Abnormal blood-pressure reading, without diagnosis
	R030	Elevated blood-pressure reading, without diagnosis of hypertension
	R031	Nonspecific low blood-pressure reading
	Z136	Encounter for screening for cardiovascular disorders

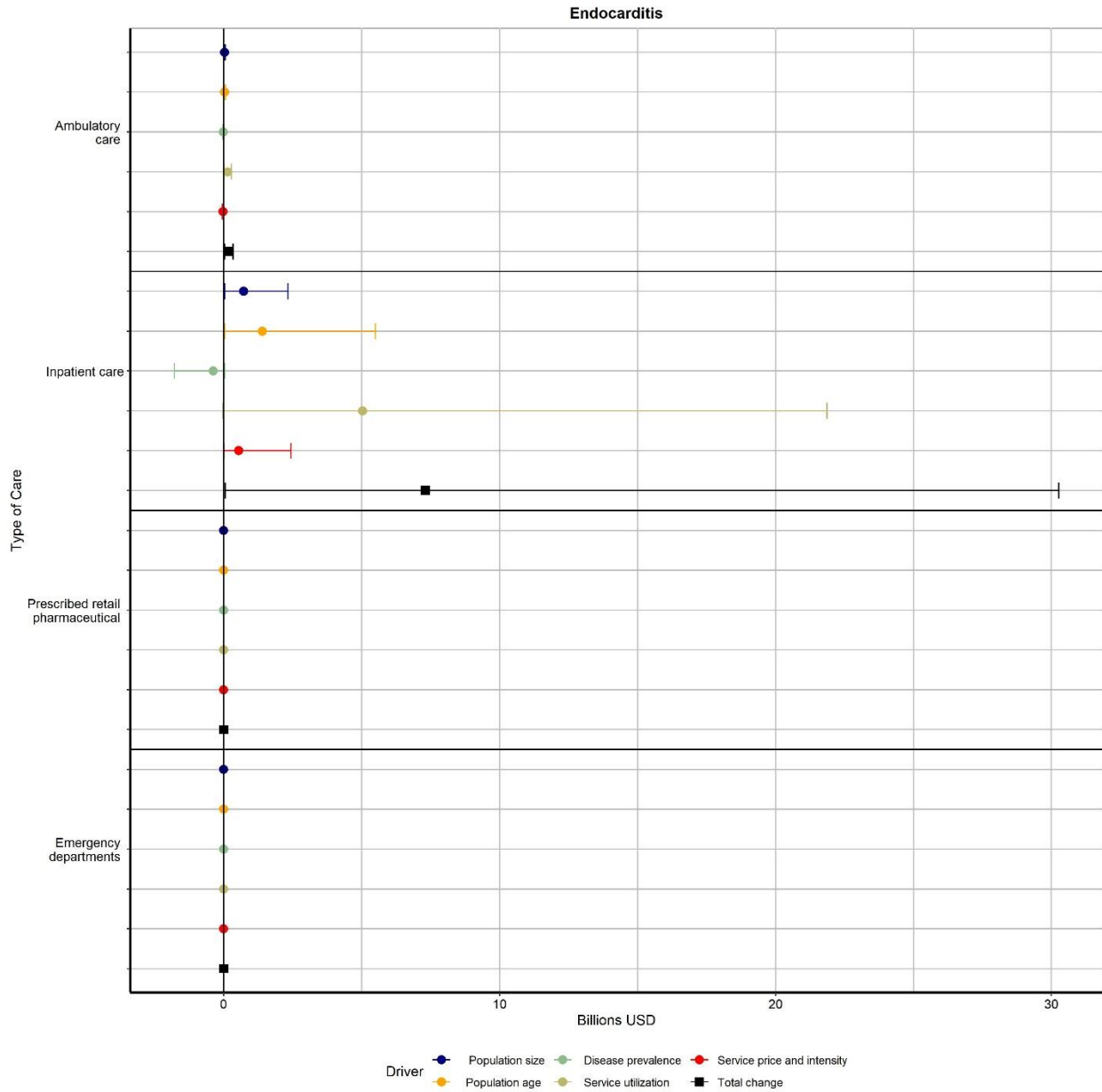


# SUPPLEMENTAL FIGURES

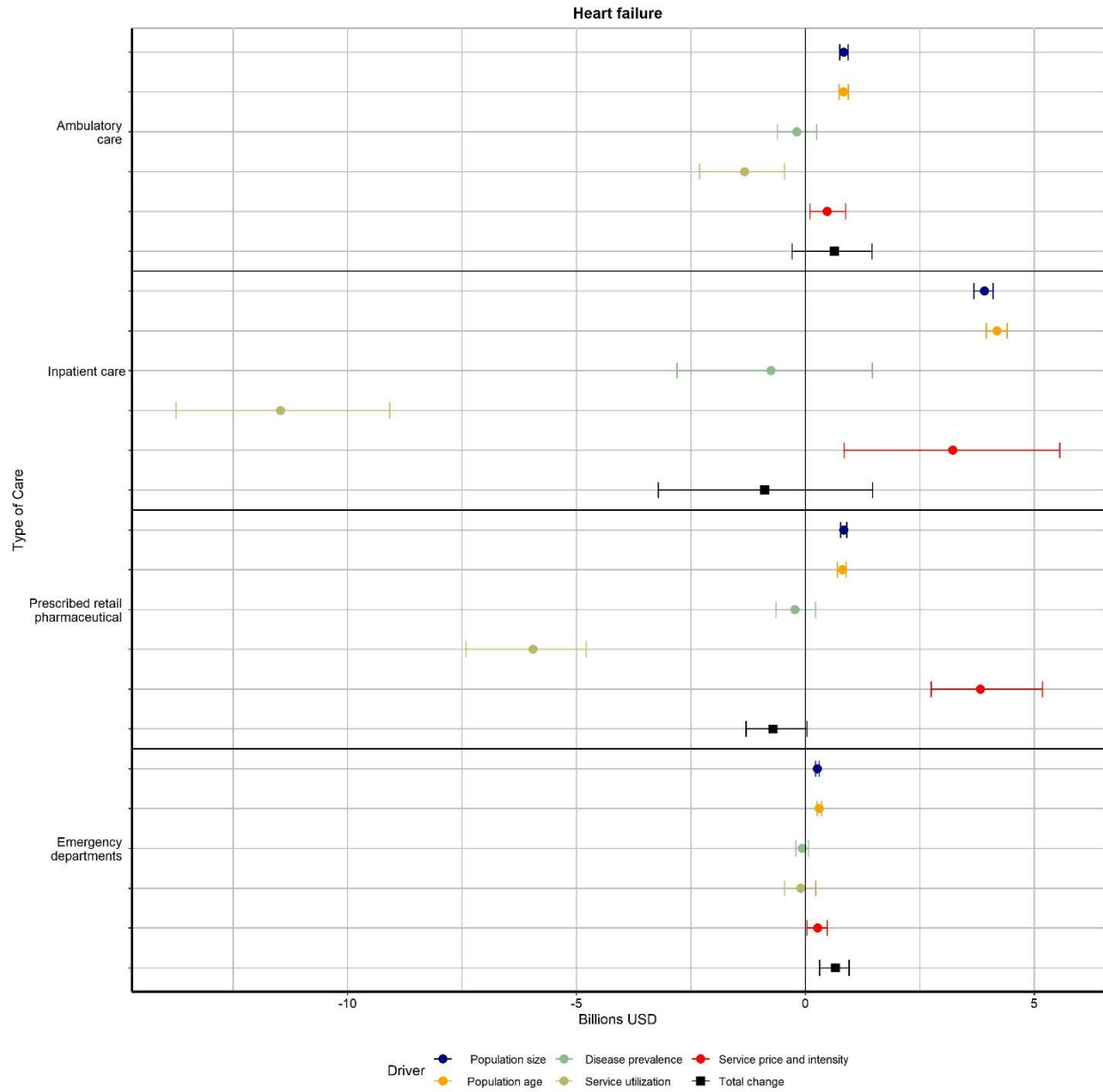
**Supplemental Figure I: Changes in spending on atrial fibrillation/flutter from 1996 to 2016 associated with drivers, disaggregated by type of care**



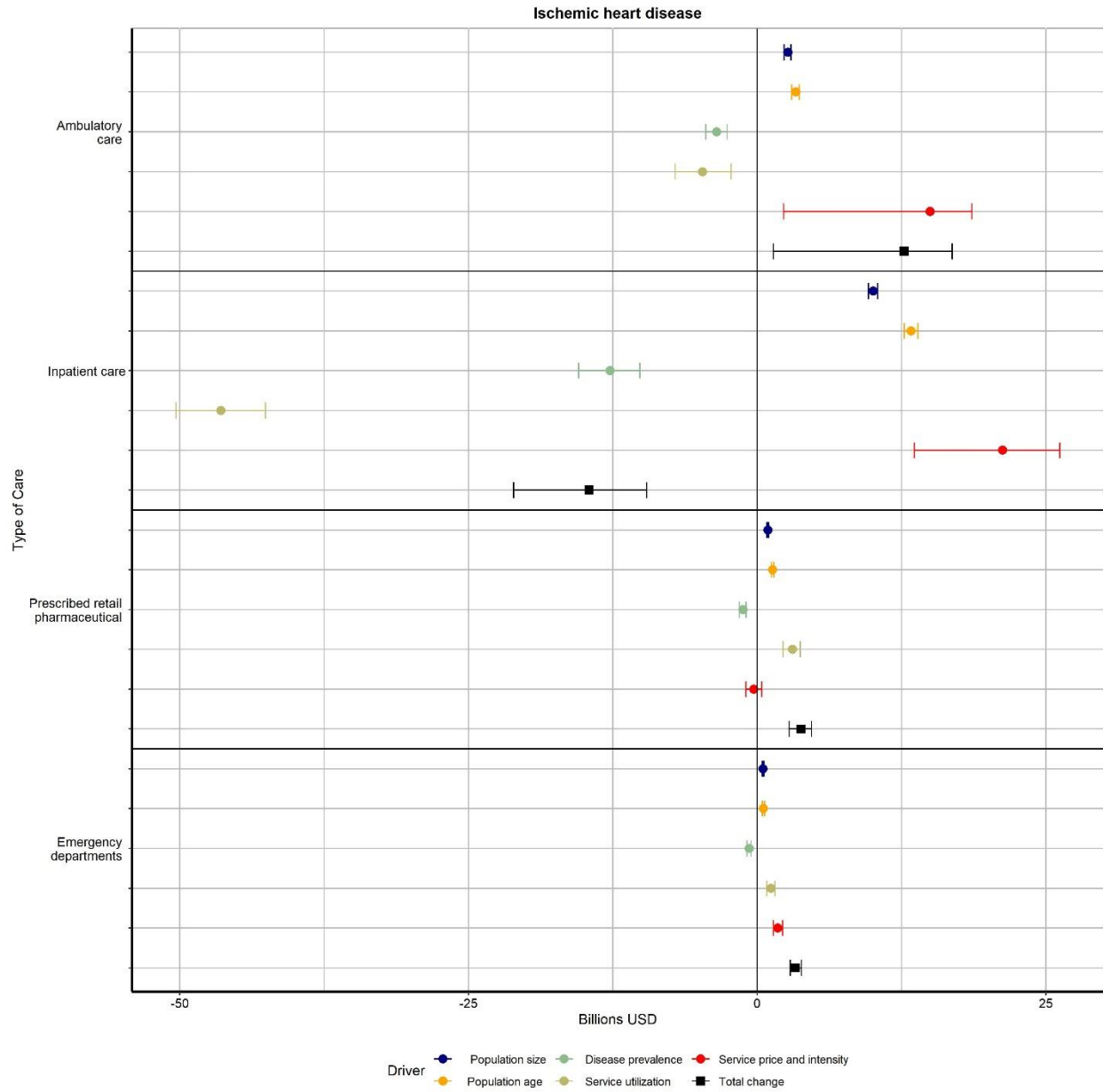
**Supplemental Figure II: Changes in spending on endocarditis from 1996 to 2016 associated with drivers, disaggregated by type of care**



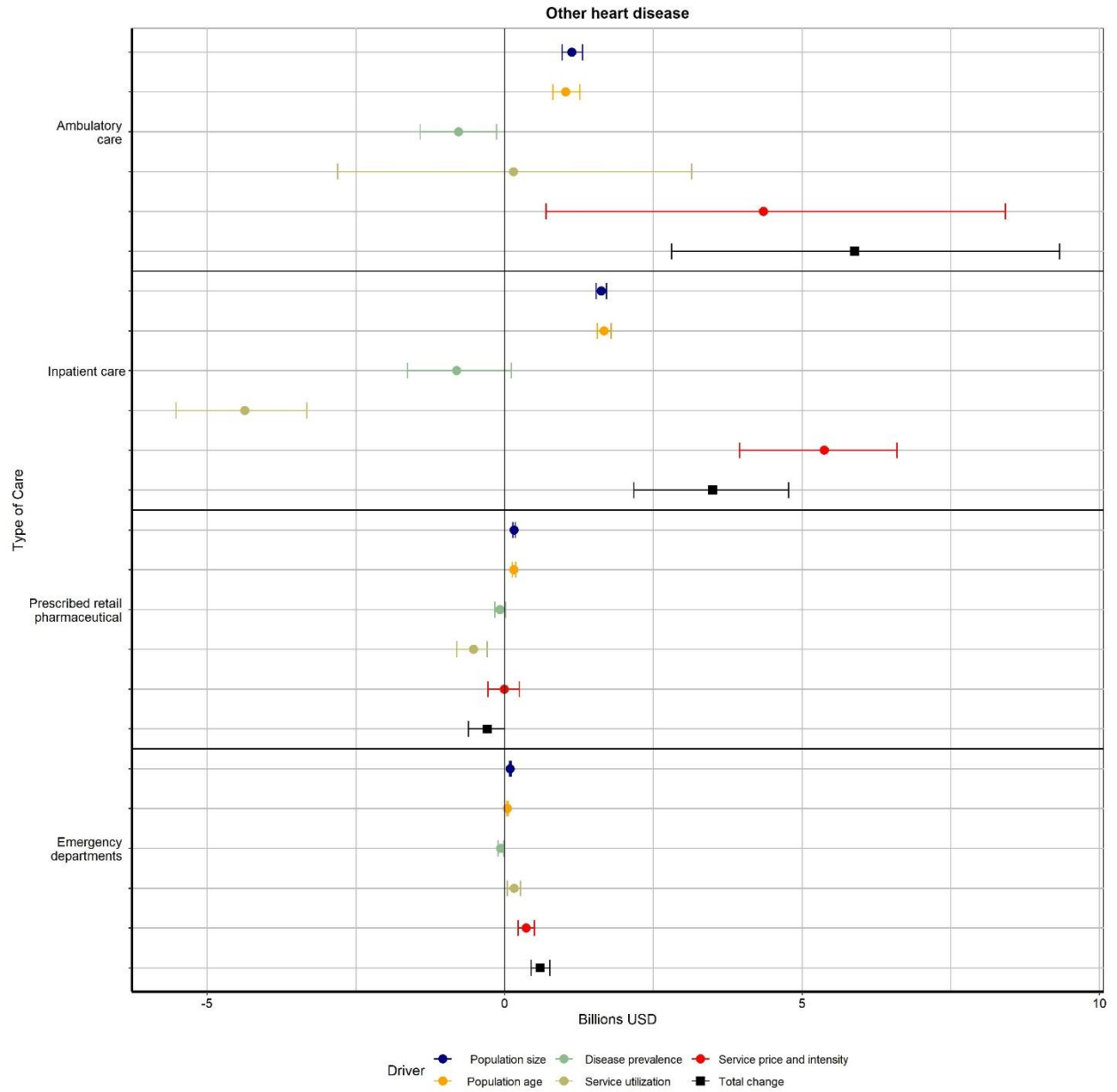
**Supplemental Figure III: Changes in spending on heart failure from 1996 to 2016 associated with drivers, disaggregated by type of care**



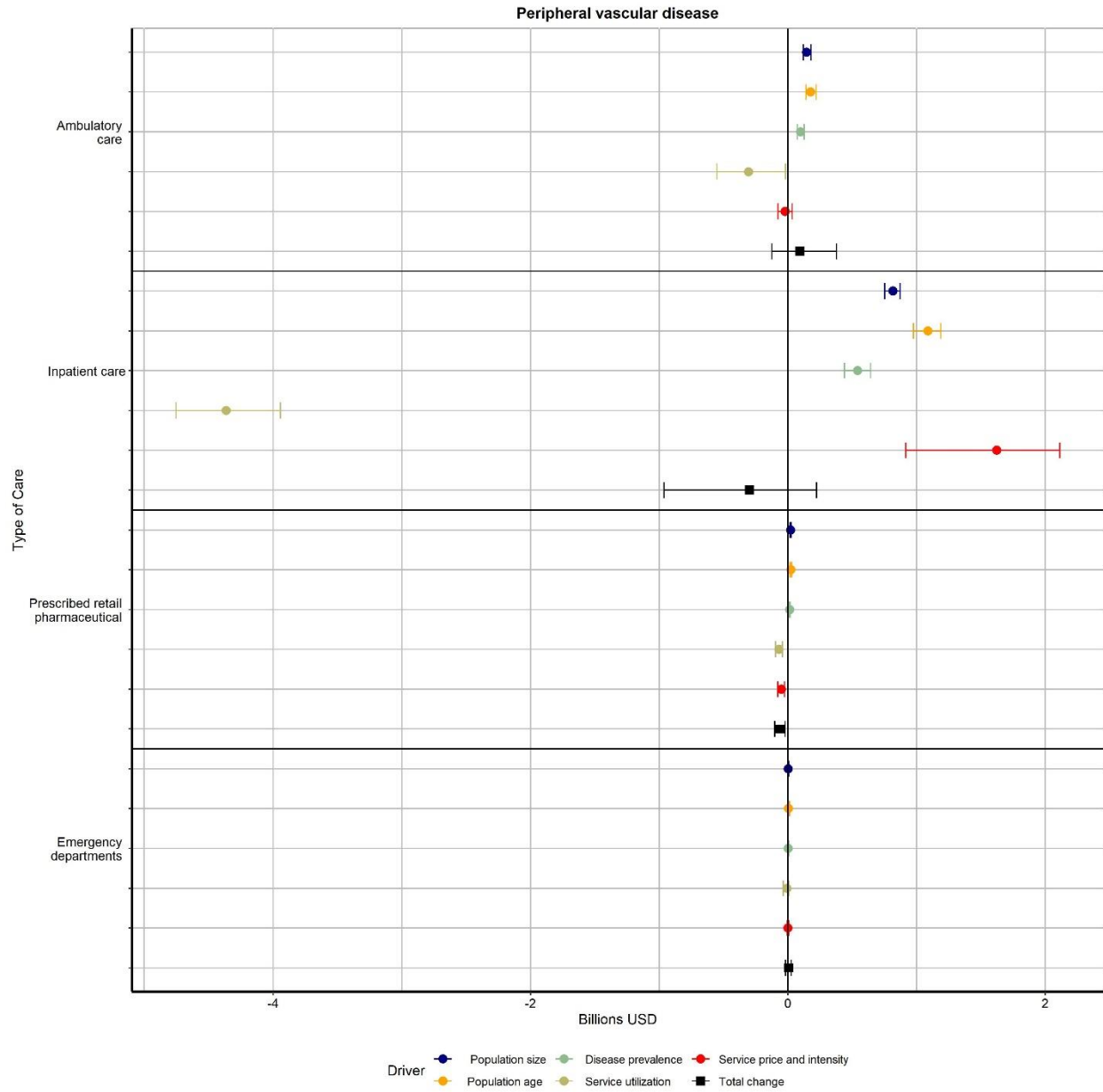
**Supplemental Figure IV: Changes in spending on ischemic heart disease from 1996 to 2016 associated with drivers, disaggregated by type of care**



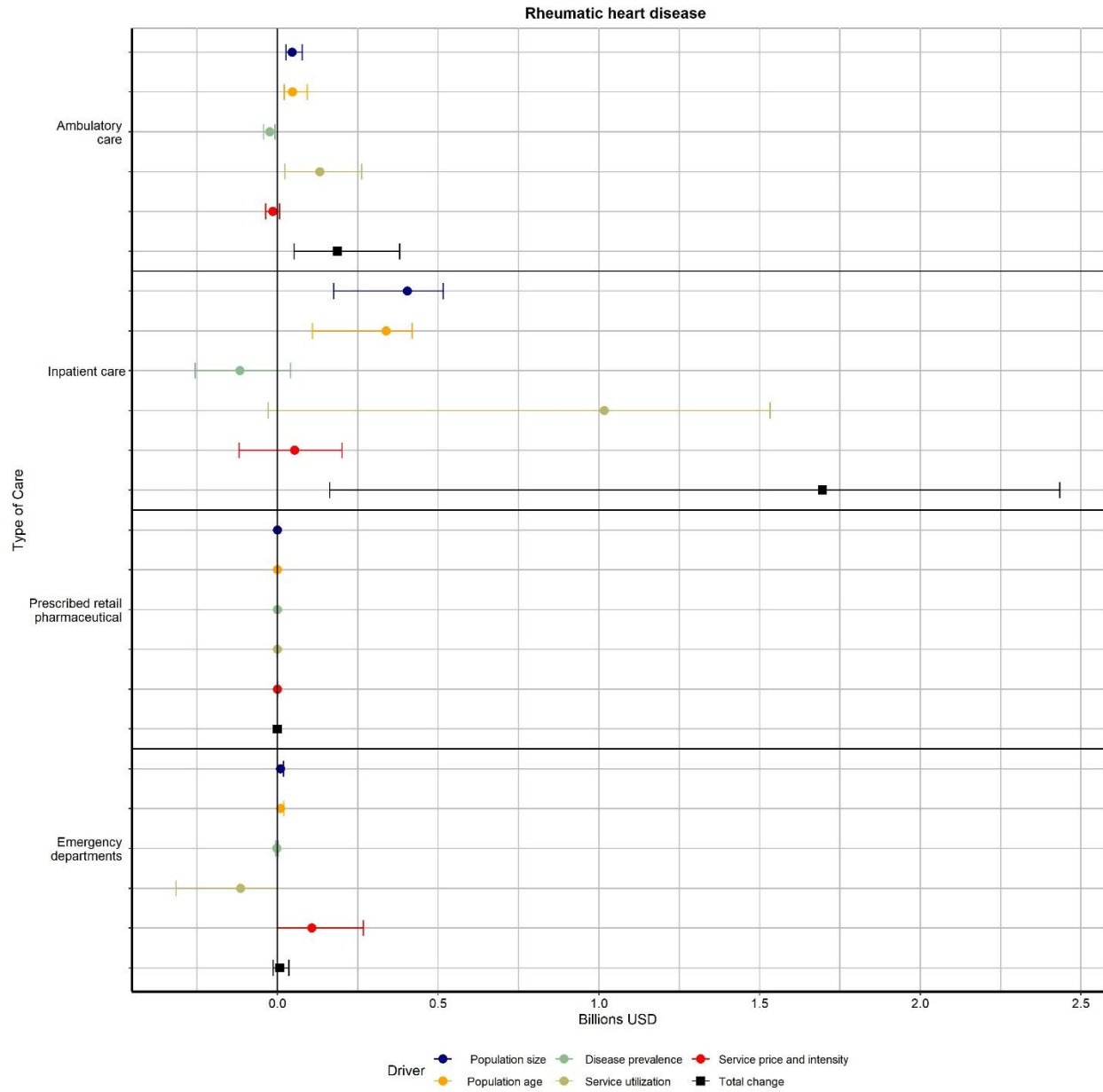
**Supplemental Figure V: Changes in spending on other heart disease from 1996 to 2016 associated with drivers, disaggregated by type of care**



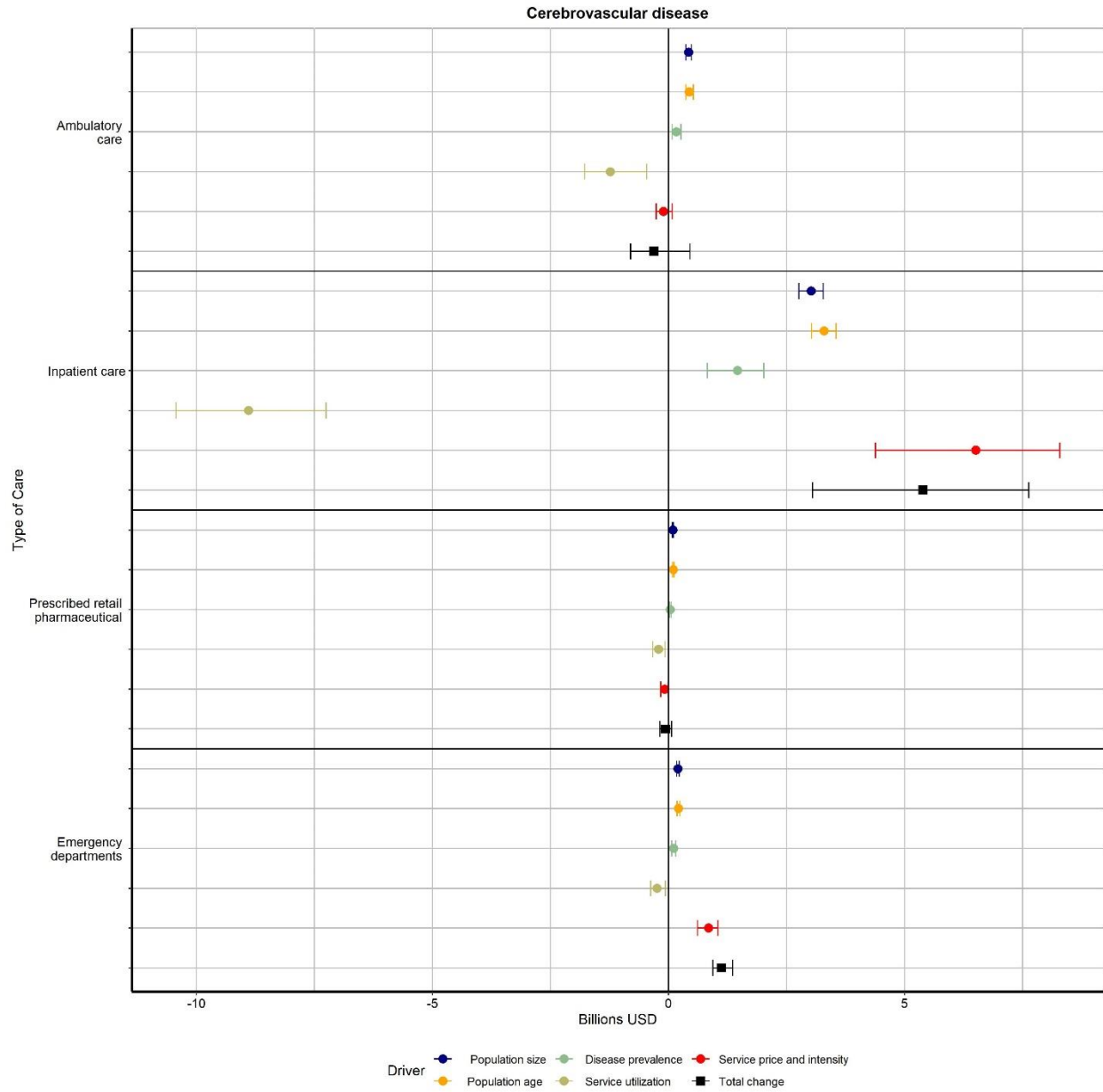
**Supplemental Figure VI: Changes in spending on peripheral arterial disease from 1996 to 2016 associated with drivers, disaggregated by type of care**



**Supplemental Figure VII: Changes in spending on rheumatic heart disease from 1996 to 2016 associated with drivers, disaggregated by type of care**

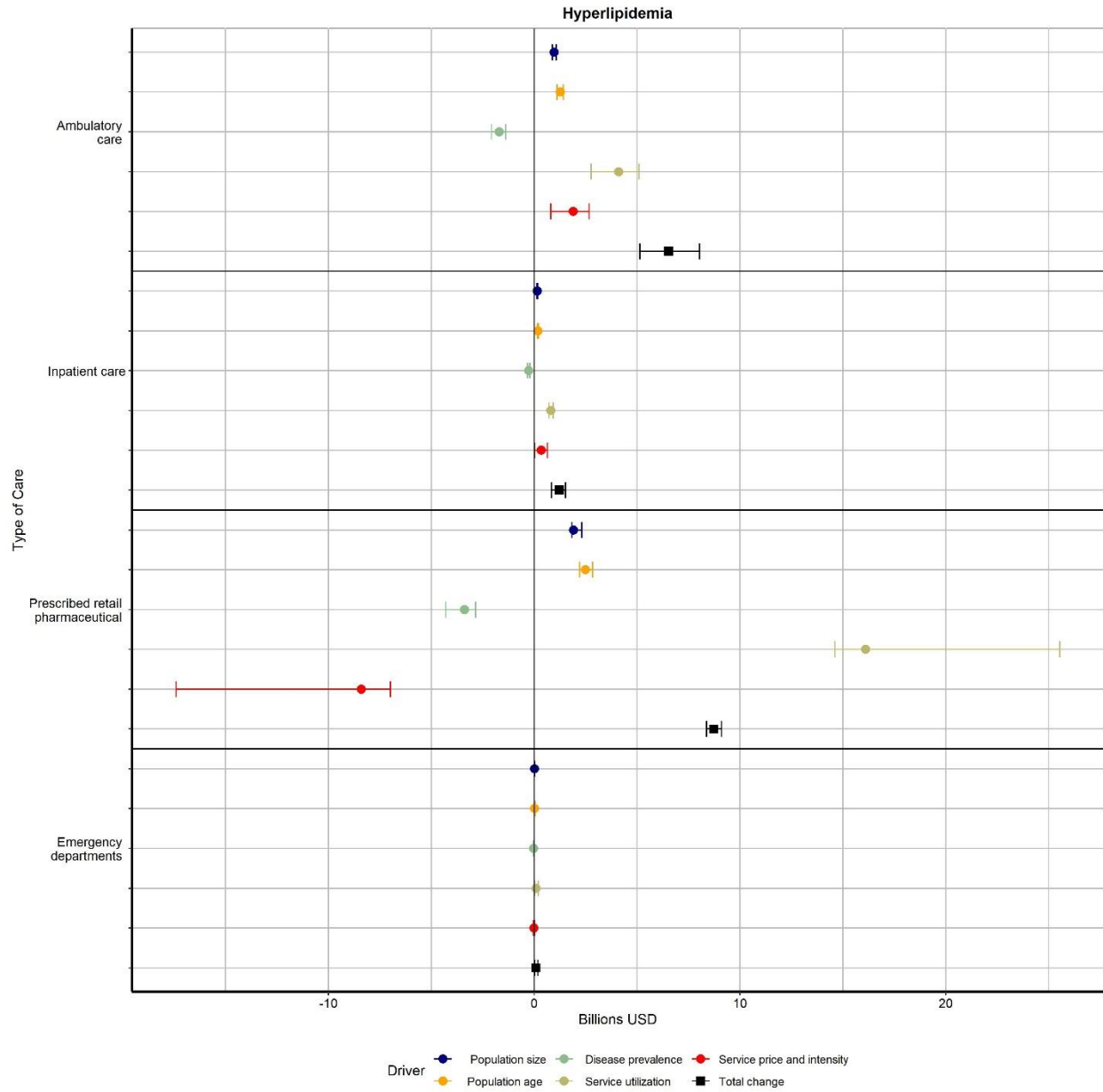


**Supplemental Figure VIII: Changes in spending on cerebrovascular disease from 1996 to 2016 associated with drivers, disaggregated by type of care**





**Supplemental Figure IX: Changes in spending on hyperlipidemia from 1996 to 2016 associated with drivers, disaggregated by type of care**



**Supplemental Figure X: Changes in spending on hypertension from 1996 to 2016 associated with drivers, disaggregated by type of care**

