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The following report contains a description of the request, request specifications, and results from the modular program run(s).

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Overview - Report 2 of 4

Request ID: cder_mpl2p_wp004_nsdv_v01

Report Description: This report contains the first sensitivity analysis, which investigated the association between new typical antipsychotic use and stroke, with new atypical antipsychotic use as the comparison exposure using a risk window of 1 day to 15 days following exposure initiation. Reports 1, 3, and 4 contain results from the primary analysis and two sensitivity analyses with varying risk windows or exposures, which are described below:

Report 1 (primary analysis): New typical antipsychotic use and stroke, with new atypical antipsychotic use as the comparison exposure

Report 3: New typical antipsychotic use and stroke, with new atypical antipsychotic use as the comparison exposure, using a risk window of 16 to 90 days following exposure initiation

Report 4: New haloperidol use and stroke, with new atypical antipsychotic use as the comparison exposure

Data Source: Data from January 1, 2001 to September 30, 2015 from 13 Data Partners contributing to the Sentinel Distributed Database (SSD) were included in this report. This request was distributed to Data Partners on March 10, 2017. Please note that three Data Partners were excluded from this report because their propensity score models did not converge. See Appendix A for a list of the latest dates of available data for each included Data Partner.

Sentinel Modular Program Tool: Cohort Identification and Descriptive Analysis (CIDA) tool, Version 3.3.2, and a Rapid Analytic Development and Response (RADaR) module

Study Design: This study used a retrospective new-user cohort design.

Exposure and Comparator: The exposure of interest was new typical antipsychotic use and the comparator of interest was new atypical antipsychotic use. The exposure and comparator drugs were defined using National Drug Codes (NDCs). For a list of generic and brand names used to define the exposure and comparator drugs, please see Appendices B and C.

Cohort Eligibility Criteria: Patients aged 18 to 64 years with continuous enrollment in plans with both medical and drug coverage for at least 183 days before exposure initiation, during which gaps in coverage of up to 45 days were allowed, were eligible to be included in the cohort. New use was defined as no use of typical or atypical antipsychotics in the previous 183 days. Patients were excluded from the cohort if they had evidence of dementia or cancer in the 183 days prior to exposure initiation. Moreover, patients were excluded from the cohort if they had evidence of stroke in the 183 days prior to or the day of exposure initiation. These exclusions were defined using International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) diagnosis codes. For a list of diagnosis codes used to define exclusions, please see Appendix D.

Follow-up: Follow-up time was determined by the length of the exposure episodes. Exposure episode lengths were defined using outpatient pharmacy dispensing days supplied to create a sequence of continuous exposure. Exposure episodes were considered continuous if gaps in days supplied were 30 days or less. Follow-up began on the first day of exposure initiation and continued until the first occurrence of any of the following: 1) an outcome (stroke) diagnosis code; 2) a dispensing of the comparator drug; 3) disenrollment; 4) disenrollment due to death; 5) end of exposure episode; 6) end of query period (9/30/2015), or 7) maximum episode duration was reached (15 days). Only the first valid exposure episode that occurred during the study period was included per patient.

Outcome of Interest: Stroke was defined using ICD-9-CM diagnosis codes flagged as a primary diagnosis in an inpatient encounter. Any outcomes that occurred on the day of exposure initiation were excluded from the analysis. For a list of diagnosis codes used to define the outcome, please see Appendix E.

Propensity Score Estimation: The following covariates were assessed during the baseline period and were included in the propensity score: age, year, sex, comorbidity score, health service utilization, drug utilization, the following medical conditions: acute myocardial infarction, diabetes, heart failure, hypercholesterolemia, hypertension, kidney failure (acute or chronic), obesity, transient ischemic attack, atrial fibrillation or atrial flutter, peripheral vascular disease, coagulation defects, and cardiovascular disease, the following psychiatric conditions: anxiety, bipolar disorder, depression, posttraumatic stress disorder, schizophrenia/psychotic disorder, and substance abuse, and use of the following drugs: angiotensin-converting-enzyme (ACE) inhibitor, antiarrhythmic, beta-blocker, statin, oral anticoagulant, non-oral anticoagulant, angiotensin receptor blocker, antiplatelet, and diuretic. For a list of covariates and codes used to define covariates, please see Appendices F, G, and H. Occurrences of these covariates were evaluated in the 183 days prior to exposure initiation. The Propensity Score Matching (PSM) tool was used to calculate the propensity scores and identify matched cohorts based on propensity scores. Propensity score estimation and matching was performed separately within each Data Partner site.

Matching: The matching ratio for the propensity score was 1:1. Patients in the exposed and comparator cohorts were nearest neighbor matched without replacement, meaning that each comparator patient was matched one time, at most, to an exposed patient. The matching caliper was 0.050.

Effect Estimates: For each comparison, Cox proportional hazards regression models were used to estimate hazard ratios and corresponding 95% confidence intervals for the unmatched analyses and the 1:1 unconditional matched analyses.

See Appendix I for complete specifications for this request.

Limitations: As with all observational studies, this evaluation was limited in its ability to control for all sources of potential bias. Also, the exposures, outcome, exclusions, and covariates may have been misclassified due to imperfect algorithms used to identify them.

Notes: Please contact the Sentinel Operations Center Query Fulfillment Team (qf@sentinelssystem.org) for questions and to provide comments/suggestions for future enhancements to this document.

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Glossary of Terms for Analyses Using Cohort Identification and Descriptive Analysis (CIDA) Tool*

Amount Supplied - number of units (pills, tablets, vials) dispensed. Net amount per NDC per dispensing. This is equivalent to the "RxAmt" value in the Sentinel Common Data Model.

Blackout Period - number of days at the beginning of a treatment episode that events are to be ignored. If an event occurs during the blackout period, the episode is excluded.

Care Setting - type of medical encounter or facility where the exposure, event, or condition code was recorded. Possible care settings include: Inpatient Hospital Stay (IP), Non-Acute Institutional Stay (IS), Emergency Department (ED), Ambulatory Visit (AV), and Other Ambulatory Visit (OA). For laboratory results, possible care settings include: Emergency department (E), Home (H), Inpatient (I), Outpatient (O), or Unknown or Missing (U). Along with the Principal Diagnosis Indicator, forms the Care Setting/PDX parameter.

Ambulatory Visit (AV) - includes visits at outpatient clinics, same-day surgeries, urgent care visits, and other same-day ambulatory hospital encounters, but excludes emergency department encounters.

Emergency Department (ED) - includes ED encounters that become inpatient stays (in which case inpatient stays would be a separate encounter). Excludes urgent care visits.

Inpatient Hospital Stay (IP) - includes all inpatient stays, same-day hospital discharges, hospital transfers, and acute hospital care where the discharge is after the admission date.

Non-Acute Institutional Stay (IS) - includes hospice, skilled nursing facility (SNF), rehab center, nursing home, residential, overnight non-hospital dialysis and other non-hospital stays.

Other Ambulatory Visit (OA) - includes other non overnight AV encounters such as hospice visits, home health visits, skilled nursing facility visits, other non-hospital visits, as well as telemedicine, telephone and email consultations.

Cohort Definition (drug/exposure) - indicates how the cohort will be defined: (1) 01: Cohort includes only the first valid treatment episode during the query period; (2) 02: Cohort includes all valid treatment episodes during the query period; (3) 03: Cohort includes all valid treatment episodes during the query period until an event occurs.

Days Supplied - number of days supplied for all dispensings in qualifying treatment episodes.

Episodes - treatment episodes; length of episode is determined by days supplied in one dispensing or consecutive dispensings bridged by the episode gap.

Eligible Members - number of members eligible for an incident treatment episode (defined by the drug/exposure and event washout periods) with drug and medical coverage during the query period.

Enrollment Gap - number of days allowed between two consecutive enrollment periods without breaking a "continuously enrolled" sequence.

Episode Gap - number of days allowed between two (or more) consecutive exposures (dispensings/procedures) to be considered the same treatment episode.

Event Deduplication - specifies how events are counted by the MP algorithm: (0) 0: Counts all occurrences of an HOI during an exposure episode; (1) 1: de-duplicates occurrences of the same HOI code and code type on the same day; (2) 2: de-duplicates occurrences of the same HOI group on the same day (e.g., de-duplicates at the group level).

Exposure Extension Period - number of days post treatment period in which the outcomes/events are counted for a treatment episode.

Exposure Episode Length - number of days after exposure initiation that is considered "exposed time."

Lookback Period (pre-existing condition) - number of days wherein a member is required to have evidence of pre-existing condition (diagnosis/procedure/drug dispensing).

Member-Years - sum of all days of enrollment with medical and drug coverage** in the query period preceded by an exposure washout period all divided by 365.25.

Minimum Days Supplied - specifies a minimum number of days in length of the days supplied for the episode to be considered.

Minimum Episode Duration - specifies a minimum number of days in length of the episode for it to be considered.

Principal Diagnosis (PDX) - diagnosis or condition established to be chiefly responsible for admission of the patient to the hospital. 'P' = principal diagnosis, 'S' = secondary diagnosis, 'X' = unspecified diagnosis, '.' = blank. Along with the Care Setting values, forms the Caresetting/PDX parameter.

Query Period - period in which the modular program looks for exposures and outcomes of interest.

Treatment Episode Truncation Indicator - indicates whether observation of the incident query code during follow-up requires truncation of valid treatment episodes. A value of Y indicates that the treatment episodes should be truncated at the first occurrence of an incident query code. A value of N indicates that the treatment episodes should not be truncated at the occurrence of the incident query code.

Users - number of members with exposure during the query period. Member must have no evidence of exposure(s) of interest (defined by incidence criteria) in the prior washout period. A user may only be counted once in a query period.

Washout Period (drug/exposure)** - number of days a user is required to have no evidence of prior exposure (drug dispensing/procedure) and continuous drug and medical coverage prior to an incident treatment episode.

Washout Period (event/outcome)** - number of days a user is required to have no evidence of a prior event (procedure/diagnosis) and continuous drug and medical coverage prior to an incident treatment episode.

Years at Risk - number of days supplied plus any episode gaps and exposure extension periods all divided by 365.25.

*all terms may not be used in this report

**incident treatment episodes must be incident to both the exposure and the event

Glossary of Terms for Analyses Using Propensity Score Matching (PSM) Tool*

Covariate - requester defined binary variable to include in the propensity score estimation model (e.g., diabetes, heart failure, etc.) during requester-defined lookback period. Requester may also choose to add any of the following categorical, continuous, or count metrics to the propensity score estimation model:

1. Age (continuous)
2. Sex
3. Time period (i.e., monitoring period for sequential analyses)
4. Year of exposure
5. Comorbidity score
6. Medical utilization – number of inpatient stays
7. Medical utilization – number of institutional stays
8. Medical utilization – number of emergency department visits
9. Medical utilization – number of outpatient visits
10. Health care utilization – number of other ambulatory encounters (e.g., telemedicine, email consults)
11. Drug utilization – number of dispensings
12. Drug utilization – number of unique generics dispensed
13. Drug Utilization – number of unique drug classes dispensed

Covariate Evaluation Window - specified number of days relative to index date to evaluate the occurrence of covariates of interest. Note: members are required to have continuous enrollment during the covariate evaluation window, regardless of the value included in the "Continuous enrollment before exposure" field.

Mahalanobis Distance - provides a measure of balance across all variables while accounting for their correlation.

Matching Caliper - maximum allowed difference in propensity scores between treatment and control patients. Requester may select any caliper (e.g., 0.01, 0.025, and 0.05).

Matching Ratio - patients in exposed and comparator groups are nearest neighbor matched by a 1:1 or 1:n (up to 10) matching ratio.

Matched Conditional and Unconditional Analysis - in a conditional matched analysis, a Cox model, stratified by Data Partner site and matched set, is run on the matched population. This can be done for both the both 1:1 and 1:n matched cohorts. In an unconditional analysis, a Cox model, stratified by Data Partner site only, is run on the matched population. This can be done for the 1:1 matched cohort only.

Propensity Score Stratification - option to stratify propensity scores based on requester-defined percentiles in the unmatched population. In a stratified analysis, a Cox model, stratified by Data Partner site, is run on the stratified population. Note that all patients identified in exposure and comparator cohorts are used in the analysis.

PSM Tool - performs effect estimation by comparing exposure propensity-score matched parallel new user cohorts. Propensity score estimation and matching are conducted within each Sentinel Data Partner site via distributed programming code; data are returned to the SOC, aggregated, and used to calculate effect estimates.

Subgroup Analysis - may be conducted using any requester-defined covariates. Subgroup analyses may be performed in the unmatched and the matched population.

Zero Cell Correction - indicator for whether to screen variables with a zero correction added to each cell in the confounder/outcome 2x2 table. Recommended when the number of exposed outcomes is fewer than 150.

*all terms may not be used in this report

Table 1a. Cohort of New Initiators of Typical Antipsychotics and Atypical Antipsychotics (Risk window = 1-15 days) (Unmatched, Aggregated), Ratio = F, Caliper = 0.05

Characteristic	Medical Product				Covariate Balance	
	Typical Antipsychotics (Risk window = 1-15 days)		Atypical Antipsychotics (Risk window = 1-15 days)		Absolute Difference	Standardized Difference
	N/Mean	%/Std Dev ¹	N/Mean	%/Std Dev ¹		
Patients (N)	45,576	100.0%	806,611	100.0%	-	-
Patient Characteristics						
Mean age	44	1260.0%	39.9	12.8	4.121	0.324
Age: 18-64	45,576	100.0%	806,611	100.0%	0	-
Gender (Ambiguous)	-	0.0%	3	0.0%	0	-
Gender (Female)	21,206	46.5%	489,469	60.7%	-14.153	-0.287
Gender (Male)	24,368	53.5%	317,090	39.3%	14.155	0.287
Gender (Unknown)	2	0.0%	49	0.0%	-0.002	-0.002
Recorded history of:						
Prior Combined Comorbidity Raw Score	0.9	1.5	0.9	1.1	0.003	0.002
Atrial Fibrillation and Flutter	648	1.4%	4,745	0.6%	0.834	0.084
Acute Myocardial Infarction	899	2.0%	7,789	1.0%	1.007	0.084
Coagulation Defects	312	0.7%	2,471	0.3%	0.378	0.054
Diabetes	5,226	11.5%	52,950	6.6%	4.902	0.172
Heart Failure	1,169	2.6%	8,490	1.1%	1.512	0.114
Hypercholesterolemia	5,718	12.5%	72,999	9.1%	3.496	0.113
Hypertension	9,800	21.5%	120,258	14.9%	6.593	0.171
Kidney Failure	1,869	4.1%	11,495	1.4%	2.676	0.164
Obesity	2,519	5.5%	34,173	4.2%	1.290	0.060
Other Cardiovascular Disease	903	2.0%	7,935	1.0%	0.998	0.083
Peripheral Vascular Disease	847	1.9%	6,086	0.8%	1.104	0.097
Transient Ischemic Attack	121	0.3%	1,433	0.2%	0.088	0.019
Anxiety	7,778	17.1%	220,237	27.3%	-10.238	-0.248
Bipolar	6,217	13.6%	169,936	21.1%	-7.427	-0.197
Depression	10,603	23.3%	324,387	40.2%	-16.952	-0.370
Posttraumatic Stress Disorder	1,355	3.0%	35,354	4.4%	-1.410	-0.075
Schizophrenia	5,687	12.5%	56,550	7.0%	5.467	0.185
Substance Abuse	6,494	14.2%	137,154	17.0%	-2.755	-0.076
History of use:						
ACE-inhibitors	6,152	13.5%	75,035	9.3%	4.196	0.132
Antiarrhythmics	366	0.8%	3,128	0.4%	0.415	0.054
Non-oral Anticoagulant	597	1.3%	4,819	0.6%	0.712	0.073
Oral Anticoagulant	1,025	2.2%	9,540	1.2%	1.066	0.082
Antiplatelets	998	2.2%	9,654	1.2%	0.993	0.077
Angiotensin Receptor Blockers	2,069	4.5%	28,959	3.6%	0.949	0.048
Beta Blockers	5,786	12.7%	76,471	9.5%	3.215	0.103
Diuretics	5,383	11.8%	66,780	8.3%	3.532	0.118
Statins	6,797	14.9%	91,915	11.4%	3.518	0.104
Health Service Utilization Intensity:						
Mean number of ambulatory encounters (AV)	8.7	11.1	9.5	10.4	-0.764	-0.071
Mean number of emergency room encounters (ED)	0.9	1.9	0.7	1.6	0.171	0.097
Mean number of inpatient hospital encounters (IP)	0.4	1.0	0.3	0.7	0.130	0.149
Mean number of non-acute institutional encounters (IS)	0.1	0.6	0.1	0.4	0.023	0.045
Mean number of other ambulatory encounters (OA)	2.1	5.2	1.7	4.1	0.373	0.080
Mean number of filled prescriptions	16.7	18.9	17.3	17.3	-0.597	-0.033
Mean number of generics	6.8	6.2	6.9	5.6	-0.057	-0.010
Mean number of unique drug classes	6.1	5.3	6.2	4.8	-0.114	-0.023

¹Value represents standard deviation where no % follows the value

Table 1b. Cohort of New Initiators of Typical Antipsychotics and Atypical Antipsychotics (Risk window = 1-15 days) (Matched, Aggregated), Ratio = F, Caliper = 0.05

Characteristic	Medical Product				Covariate Balance	
	Typical Antipsychotics (Risk window = 1-15 days)		Atypical Antipsychotics (Risk window = 1-15 days)		Absolute Difference	Standardized Difference
	N/Mean	%/Std Dev ¹	N/Mean	%/Std Dev ¹		
Patients (N)	45,495	99.8%	45,495	5.6%	-	-
Patient Characteristics						
Mean age	44	12.6	44.2	12.7	-0.255	-0.020
Age: 18-64	45,495	100.0%	45,495	100.0%	0	-
Gender (Ambiguous)	-	0.0%	-	0.0%	0	-
Gender (Female)	21,194	46.6%	20,987	46.1%	0.455	0.009
Gender (Male)	24,299	53.4%	24,503	53.9%	-0.448	-0.009
Gender (Unknown)	2	0.0%	5	0.0%	-0.007	-0.008
Recorded history of:						
Prior Combined Comorbidity Raw Score	0.9	1.5	0.9	1.5	-0.014	-0.010
Atrial Fibrillation and Flutter	620	1.4%	660	1.5%	-0.088	-0.007
Acute Myocardial Infarction	879	1.9%	928	2.0%	-0.108	-0.008
Coagulation Defects	287	0.6%	279	0.6%	0.018	0.002
Diabetes	5,182	11.4%	5,393	11.9%	-0.464	-0.014
Heart Failure	1,131	2.5%	1,160	2.5%	-0.064	-0.004
Hypercholesterolemia	5,689	12.5%	5,856	12.9%	-0.367	-0.011
Hypertension	9,754	21.4%	9,886	21.7%	-0.290	-0.007
Kidney Failure	1,817	4.0%	1,855	4.1%	-0.084	-0.004
Obesity	2,499	5.5%	2,582	5.7%	-0.182	-0.008
Other Cardiovascular Disease	889	2.0%	882	1.9%	0.015	0.001
Peripheral Vascular Disease	831	1.8%	831	1.8%	0.000	0.000
Transient Ischemic Attack	121	0.3%	116	0.3%	0.011	0.002
Anxiety	7,763	17.1%	8,033	17.7%	-0.593	-0.016
Bipolar	6,215	13.7%	6,427	14.1%	-0.466	-0.013
Depression	10,586	23.3%	10,860	23.9%	-0.602	-0.014
Posttraumatic Stress Disorder	1,355	3.0%	1,472	3.2%	-0.257	-0.015
Schizophrenia	5,676	12.5%	5,998	13.2%	-0.708	-0.021
Substance Abuse	6,468	14.2%	6,652	14.6%	-0.404	-0.012
History of use:						
ACE-inhibitors	6,125	13.5%	6,228	13.7%	-0.226	-0.007
Antiarrhythmics	357	0.8%	385	0.8%	-0.062	-0.007
Non-oral Anticoagulant	579	1.3%	576	1.3%	0.007	0.001
Oral Anticoagulant	993	2.2%	981	2.2%	0.026	0.002
Antiplatelets	991	2.2%	1,068	2.3%	-0.169	-0.011
Angiotensin Receptor Blockers	2,062	4.5%	2,149	4.7%	-0.191	-0.009
Beta Blockers	5,753	12.6%	5,857	12.9%	-0.229	-0.007
Diuretics	5,331	11.7%	5,414	11.9%	-0.182	-0.006
Statins	6,762	14.9%	6,928	15.2%	-0.365	-0.010
Health Service Utilization Intensity:						
Mean number of ambulatory encounters (AV)	8.7	11.1	8.7	10.7	-0.057	-0.005
Mean number of emergency room encounters (ED)	0.9	1.9	0.9	2.3	0.010	0.005
Mean number of inpatient hospital encounters (IP)	0.4	1.0	0.4	1.1	0.003	0.003
Mean number of non-acute institutional encounters (IS)	0.1	0.6	0.1	0.5	0.002	0.004
Mean number of other ambulatory encounters (OA)	2.0	5.1	2.0	5.3	-0.004	-0.001
Mean number of filled prescriptions	16.6	18.8	16.7	17.5	-0.092	-0.005
Mean number of generics	6.8	6.2	6.9	5.9	-0.036	-0.006
Mean number of unique drug classes	6.1	5.3	6.2	5.0	-0.081	-0.016

¹Value represents standard deviation where no % follows the value

Table 2. Effect Estimates for Typical Antipsychotics and Atypical Antipsychotics (Risk window = 1-15 days) and Stroke by Analysis Type

Medical Product	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% CI)	Wald P-Value
Unmatched Analysis (Site-adjusted only)											
Typical Antipsychotics (Risk window = 1-15 days)	45,576	1,534.75	12.30	0.03	7	4.56	0.15	3.27	0.10	3.06 (1.37, 6.83)	0.007
Atypical Antipsychotics (Risk window = 1-15 days)	806,611	32,431.81	14.69	0.04	42	1.30	0.05				
1:1 Matched Unconditional Predefined Analysis; Caliper=0.05											
Typical Antipsychotics (Risk window = 1-15 days)	45,495	1,532.82	12.31	0.03	7	4.57	0.15	0.74	0.00	1.16 (0.41, 3.32)	0.782
Atypical Antipsychotics (Risk window = 1-15 days)	45,495	1,829.06	14.68	0.04	7	3.83	0.15				

Appendix A. Dates of Available Data for Each Data Partner (DP) up to Request End Date (9/30/2015) as of Query Distribution Date

Data Partner (Masked)	Start Date	End Date
DP0001	1/1/2008	9/30/2015
DP0002	1/1/2006	9/30/2015
DP0003	1/1/2004	9/30/2015
DP0004	1/1/2000	9/30/2015
DP0005	1/1/2000	9/30/2015
DP0006	6/1/2007	9/30/2015
DP0007	1/1/2000	9/30/2015
DP0008	1/1/2000	9/30/2015
DP0009	1/1/2005	9/30/2015
DP0010	1/1/2000	9/30/2015
DP0011	1/1/2000	9/30/2015
DP0012	1/1/2008	9/30/2015
DP0013	1/1/2000	9/30/2015

Appendix B: List of Generic and Brand Names used to Define Typical Antipsychotics

Generic Name	Brand Name
CHLORPROMAZINE HCL	chlorpromazine
CHLORPROMAZINE HCL	Thorazine
FLUPHENAZINE HCL	fluphenazine HCL
FLUPHENAZINE HCL	Permitil
FLUPHENAZINE HCL	Prolixin
HALOPERIDOL	haloperidol
HALOPERIDOL LACTATE	Haldol
HALOPERIDOL LACTATE	haloperidol lactate
LOXAPINE HCL	Loxitane-C
LOXAPINE SUCCINATE	loxapine succinate
LOXAPINE SUCCINATE	Loxitane
MOLINDONE HCL	Moban
MOLINDONE HCL	molindone
PERPHENAZINE	perphenazine
PERPHENAZINE	Trilafon
PERPHENAZINE/AMITRIPTYLINE HCL	Duo-Vil 2-10
PERPHENAZINE/AMITRIPTYLINE HCL	Duo-Vil 2-25
PERPHENAZINE/AMITRIPTYLINE HCL	Etrafon 2-10
PERPHENAZINE/AMITRIPTYLINE HCL	Etrafon 2-25
PERPHENAZINE/AMITRIPTYLINE HCL	Etrafon Forte 4-25
PERPHENAZINE/AMITRIPTYLINE HCL	perphenazine-amitriptyline
PERPHENAZINE/AMITRIPTYLINE HCL	Triavil 2-10
PERPHENAZINE/AMITRIPTYLINE HCL	Triavil 2-25
PERPHENAZINE/AMITRIPTYLINE HCL	Triavil 4-25
THIORIDAZINE HCL	Mellaril
THIORIDAZINE HCL	Mellaril-S
THIORIDAZINE HCL	thioridazine
THIOTHIXENE	Navane
THIOTHIXENE	thiothixene
THIOTHIXENE HCL	Navane
THIOTHIXENE HCL	thiothixene HCL
TRIFLUOPERAZINE HCL	Stelazine
TRIFLUOPERAZINE HCL	trifluoperazine

Appendix C: List of Generic and Brand Names used to Define Atypical Antipsychotics

Generic Name	Brand Name
ARIPIPRAZOLE	Abilify
ARIPIPRAZOLE	Abilify Discmelt
ARIPIPRAZOLE	aripiprazole
ASENAPINE MALEATE	Saphris
ASENAPINE MALEATE	Saphris (black cherry)
BREXPIPRAZOLE	Rexulti
CARIPRAZINE HCL	Vraylar
CLOZAPINE	clozapine
CLOZAPINE	Clozaril
CLOZAPINE	FazaClo
CLOZAPINE	Versacloz
ILOPERIDONE	Fanapt
LURASIDONE HCL	Latuda
OLANZAPINE	olanzapine
OLANZAPINE	Zyprexa
OLANZAPINE	Zyprexa Zydis
OLANZAPINE/FLUOXETINE HCL	olanzapine-fluoxetine
OLANZAPINE/FLUOXETINE HCL	Symbyax
PALIPERIDONE	Invega
PALIPERIDONE	paliperidone
QUETIAPINE FUMARATE	quetiapine
QUETIAPINE FUMARATE	Seroquel
QUETIAPINE FUMARATE	Seroquel XR
RISPERIDONE	Risperdal
RISPERIDONE	Risperdal M-TAB
RISPERIDONE	risperidone
ZIPRASIDONE HCL	Geodon
ZIPRASIDONE HCL	ziprasidone HCl

Appendix D: List of Diagnosis Codes Used to Define Pre-existing Exclusions

Code	Code Category	Code Type	Description
Dementia			
290	Diagnosis	ICD-9-CM	Dementias
290.0	Diagnosis	ICD-9-CM	Senile dementia, uncomplicated
290.10	Diagnosis	ICD-9-CM	Presenile dementia, uncomplicated
290.1	Diagnosis	ICD-9-CM	Presenile dementia
290.11	Diagnosis	ICD-9-CM	Presenile dementia with delirium
290.12	Diagnosis	ICD-9-CM	Presenile dementia with delusional features
290.13	Diagnosis	ICD-9-CM	Presenile dementia with depressive features
290.20	Diagnosis	ICD-9-CM	Senile dementia with delusional features
290.2	Diagnosis	ICD-9-CM	Senile dementia with delusional or depressive features
290.21	Diagnosis	ICD-9-CM	Senile dementia with depressive features
290.3	Diagnosis	ICD-9-CM	Senile dementia with delirium
290.4	Diagnosis	ICD-9-CM	Vascular dementia
290.40	Diagnosis	ICD-9-CM	Vascular dementia, uncomplicated
290.41	Diagnosis	ICD-9-CM	Vascular dementia, with delirium
290.42	Diagnosis	ICD-9-CM	Vascular dementia, with delusions
290.43	Diagnosis	ICD-9-CM	Vascular dementia, with depressed mood
290.8	Diagnosis	ICD-9-CM	Other specified senile psychotic conditions
290.9	Diagnosis	ICD-9-CM	Unspecified senile psychotic condition
291.2	Diagnosis	ICD-9-CM	Alcohol-induced persisting dementia
292.82	Diagnosis	ICD-9-CM	Drug-induced persisting dementia
294.10	Diagnosis	ICD-9-CM	Dementia in conditions classified elsewhere without behavioral disturbance
294.1	Diagnosis	ICD-9-CM	Dementia in conditions classified elsewhere
294.11	Diagnosis	ICD-9-CM	Dementia in conditions classified elsewhere with behavioral disturbance
294.2	Diagnosis	ICD-9-CM	Dementia, unspecified
294.20	Diagnosis	ICD-9-CM	Dementia, unspecified, without behavioral disturbance
294.21	Diagnosis	ICD-9-CM	Dementia, unspecified, with behavioral disturbance
331.1	Diagnosis	ICD-9-CM	Frontotemporal dementia
331.19	Diagnosis	ICD-9-CM	Other frontotemporal dementia
331.82	Diagnosis	ICD-9-CM	Dementia with Lewy bodies
331.0	Diagnosis	ICD-9-CM	Alzheimer's disease
331.82	Diagnosis	ICD-9-CM	Dementia with Lewy bodies
331.83	Diagnosis	ICD-9-CM	Mild cognitive impairment, so stated
331.8	Diagnosis	ICD-9-CM	Other cerebral degeneration
331.7	Diagnosis	ICD-9-CM	Cerebral degeneration in diseases classified elsewhere
331.89	Diagnosis	ICD-9-CM	Other cerebral degeneration
331.2	Diagnosis	ICD-9-CM	Senile degeneration of brain

331.9	Diagnosis	ICD-9-CM	Unspecified cerebral degeneration
Cancer			
151	Diagnosis	ICD-9-CM	Malignant neoplasm of stomach
157	Diagnosis	ICD-9-CM	Malignant neoplasm of pancreas
162	Diagnosis	ICD-9-CM	Malignant neoplasm of trachea bronchus and lung
179	Diagnosis	ICD-9-CM	Malignant neoplasm of uterus, part unspecified
180	Diagnosis	ICD-9-CM	Malignant neoplasm of cervix uteri
181	Diagnosis	ICD-9-CM	Malignant neoplasm of placenta
182	Diagnosis	ICD-9-CM	Malignant neoplasm of body of uterus
183	Diagnosis	ICD-9-CM	Malignant neoplasm of ovary and other uterine adnexa
184	Diagnosis	ICD-9-CM	Malignant neoplasm of other and unspecified female genital organs
186	Diagnosis	ICD-9-CM	Malignant neoplasm of testis
188	Diagnosis	ICD-9-CM	Malignant neoplasm of bladder
140	Diagnosis	ICD-9-CM	Malignant neoplasm of lip
141	Diagnosis	ICD-9-CM	Malignant neoplasm of tongue
142	Diagnosis	ICD-9-CM	Malignant neoplasm of major salivary glands
143	Diagnosis	ICD-9-CM	Malignant neoplasm of gum
144	Diagnosis	ICD-9-CM	Malignant neoplasm of floor of mouth
145	Diagnosis	ICD-9-CM	Malignant neoplasm of other and unspecified parts of mouth
146	Diagnosis	ICD-9-CM	Malignant neoplasm of oropharynx
147	Diagnosis	ICD-9-CM	Malignant neoplasm of nasopharynx
148	Diagnosis	ICD-9-CM	Malignant neoplasm of hypopharynx
149	Diagnosis	ICD-9-CM	Malignant neoplasm of other and ill-defined sites within the lip oral cavity and pharynx
150	Diagnosis	ICD-9-CM	Malignant neoplasm of esophagus
152	Diagnosis	ICD-9-CM	Malignant neoplasm of small intestine including duodenum
153	Diagnosis	ICD-9-CM	Malignant neoplasm of colon
154	Diagnosis	ICD-9-CM	Malignant neoplasm of rectum rectosigmoid junction and anus
155	Diagnosis	ICD-9-CM	Malignant neoplasm of liver and intrahepatic bile ducts
156	Diagnosis	ICD-9-CM	Malignant neoplasm of gallbladder and extrahepatic bile ducts
158	Diagnosis	ICD-9-CM	Malignant neoplasm of retroperitoneum and peritoneum
159	Diagnosis	ICD-9-CM	Malignant neoplasm of other and ill-defined sites within the digestive organs and peritoneum
160	Diagnosis	ICD-9-CM	Malignant neoplasm of nasal cavities middle ear and accessory sinuses
161	Diagnosis	ICD-9-CM	Malignant neoplasm of larynx
163	Diagnosis	ICD-9-CM	Malignant neoplasm of pleura
164	Diagnosis	ICD-9-CM	Malignant neoplasm of thymus heart and mediastinum
165	Diagnosis	ICD-9-CM	Malignant neoplasm of other and ill-defined sites within the respiratory system and intrathoracic organs
170	Diagnosis	ICD-9-CM	Malignant neoplasm of bone and articular cartilage
171	Diagnosis	ICD-9-CM	Malignant neoplasm of connective and other soft tissue
174	Diagnosis	ICD-9-CM	Malignant neoplasm of female breast
175	Diagnosis	ICD-9-CM	Malignant neoplasm of male breast

176	Diagnosis	ICD-9-CM	Kaposi's sarcoma
185	Diagnosis	ICD-9-CM	Malignant neoplasm of prostate
187	Diagnosis	ICD-9-CM	Malignant neoplasm of penis and other male genital organs
189	Diagnosis	ICD-9-CM	Malignant neoplasm of kidney and other and unspecified urinary organs
190	Diagnosis	ICD-9-CM	Malignant neoplasm of eye
191	Diagnosis	ICD-9-CM	Malignant neoplasm of brain
192	Diagnosis	ICD-9-CM	Malignant neoplasm of other and unspecified parts of nervous system
193	Diagnosis	ICD-9-CM	Malignant neoplasm of thyroid gland
194	Diagnosis	ICD-9-CM	Malignant neoplasm of other endocrine glands and related structures
195	Diagnosis	ICD-9-CM	Malignant neoplasm of other and ill-defined sites
200	Diagnosis	ICD-9-CM	Lymphosarcoma and reticulosarcoma and other specified malignant tumors of lymphatic tissue
201	Diagnosis	ICD-9-CM	Hodgkin's disease
202	Diagnosis	ICD-9-CM	Other malignant neoplasms of lymphoid and histiocytic tissue
203	Diagnosis	ICD-9-CM	Multiple myeloma and immunoproliferative neoplasms
204	Diagnosis	ICD-9-CM	Lymphoid leukemia
205	Diagnosis	ICD-9-CM	Myeloid leukemia
206	Diagnosis	ICD-9-CM	Monocytic leukemia
207	Diagnosis	ICD-9-CM	Other specified leukemia
208	Diagnosis	ICD-9-CM	Leukemia of unspecified cell type
151**	Diagnosis	ICD-9-CM	Malignant neoplasm of stomach
157**	Diagnosis	ICD-9-CM	Malignant neoplasm of pancreas
162**	Diagnosis	ICD-9-CM	Malignant neoplasm of trachea bronchus and lung
179**	Diagnosis	ICD-9-CM	Malignant neoplasm of uterus, part unspecified
180**	Diagnosis	ICD-9-CM	Malignant neoplasm of cervix uteri
181**	Diagnosis	ICD-9-CM	Malignant neoplasm of placenta
182**	Diagnosis	ICD-9-CM	Malignant neoplasm of body of uterus
183**	Diagnosis	ICD-9-CM	Malignant neoplasm of ovary and other uterine adnexa
184**	Diagnosis	ICD-9-CM	Malignant neoplasm of other and unspecified female genital organs
186**	Diagnosis	ICD-9-CM	Malignant neoplasm of testis
188**	Diagnosis	ICD-9-CM	Malignant neoplasm of bladder
140**	Diagnosis	ICD-9-CM	Malignant neoplasm of lip
141**	Diagnosis	ICD-9-CM	Malignant neoplasm of tongue
142**	Diagnosis	ICD-9-CM	Malignant neoplasm of major salivary glands
143**	Diagnosis	ICD-9-CM	Malignant neoplasm of gum
144**	Diagnosis	ICD-9-CM	Malignant neoplasm of floor of mouth
145**	Diagnosis	ICD-9-CM	Malignant neoplasm of other and unspecified parts of mouth
146**	Diagnosis	ICD-9-CM	Malignant neoplasm of oropharynx
147**	Diagnosis	ICD-9-CM	Malignant neoplasm of nasopharynx
148**	Diagnosis	ICD-9-CM	Malignant neoplasm of hypopharynx
149**	Diagnosis	ICD-9-CM	Malignant neoplasm of other and ill-defined sites within the lip oral cavity and pharynx

150**	Diagnosis	ICD-9-CM	Malignant neoplasm of esophagus
152**	Diagnosis	ICD-9-CM	Malignant neoplasm of small intestine including duodenum
153**	Diagnosis	ICD-9-CM	Malignant neoplasm of colon
154**	Diagnosis	ICD-9-CM	Malignant neoplasm of rectum rectosigmoid junction and anus
155**	Diagnosis	ICD-9-CM	Malignant neoplasm of liver and intrahepatic bile ducts
156**	Diagnosis	ICD-9-CM	Malignant neoplasm of gallbladder and extrahepatic bile ducts
158**	Diagnosis	ICD-9-CM	Malignant neoplasm of retroperitoneum and peritoneum
159**	Diagnosis	ICD-9-CM	Malignant neoplasm of other and ill-defined sites within the digestive organs and peritoneum
160**	Diagnosis	ICD-9-CM	Malignant neoplasm of nasal cavities middle ear and accessory sinuses
161**	Diagnosis	ICD-9-CM	Malignant neoplasm of larynx
163**	Diagnosis	ICD-9-CM	Malignant neoplasm of pleura
164**	Diagnosis	ICD-9-CM	Malignant neoplasm of thymus heart and mediastinum
165**	Diagnosis	ICD-9-CM	Malignant neoplasm of other and ill-defined sites within the respiratory system and intrathoracic organs
170**	Diagnosis	ICD-9-CM	Malignant neoplasm of bone and articular cartilage
171**	Diagnosis	ICD-9-CM	Malignant neoplasm of connective and other soft tissue
174**	Diagnosis	ICD-9-CM	Malignant neoplasm of female breast
175**	Diagnosis	ICD-9-CM	Malignant neoplasm of male breast
176**	Diagnosis	ICD-9-CM	Kaposi's sarcoma
185**	Diagnosis	ICD-9-CM	Malignant neoplasm of prostate
187**	Diagnosis	ICD-9-CM	Malignant neoplasm of penis and other male genital organs
189**	Diagnosis	ICD-9-CM	Malignant neoplasm of kidney and other and unspecified urinary organs
190**	Diagnosis	ICD-9-CM	Malignant neoplasm of eye
191**	Diagnosis	ICD-9-CM	Malignant neoplasm of brain
192**	Diagnosis	ICD-9-CM	Malignant neoplasm of other and unspecified parts of nervous system
193**	Diagnosis	ICD-9-CM	Malignant neoplasm of thyroid gland
194**	Diagnosis	ICD-9-CM	Malignant neoplasm of other endocrine glands and related structures
195**	Diagnosis	ICD-9-CM	Malignant neoplasm of other and ill-defined sites
200**	Diagnosis	ICD-9-CM	Lymphosarcoma and reticulosarcoma and other specified malignant tumors of lymphatic tissue
201**	Diagnosis	ICD-9-CM	Hodgkin's disease
202**	Diagnosis	ICD-9-CM	Other malignant neoplasms of lymphoid and histiocytic tissue
203**	Diagnosis	ICD-9-CM	Multiple myeloma and immunoproliferative neoplasms
204**	Diagnosis	ICD-9-CM	Lymphoid leukemia
205**	Diagnosis	ICD-9-CM	Myeloid leukemia
206**	Diagnosis	ICD-9-CM	Monocytic leukemia
207**	Diagnosis	ICD-9-CM	Other specified leukemia
208**	Diagnosis	ICD-9-CM	Leukemia of unspecified cell type
151*	Diagnosis	ICD-9-CM	Malignant neoplasm of stomach
157*	Diagnosis	ICD-9-CM	Malignant neoplasm of pancreas
162*	Diagnosis	ICD-9-CM	Malignant neoplasm of trachea bronchus and lung
179*	Diagnosis	ICD-9-CM	Malignant neoplasm of uterus, part unspecified

180*	Diagnosis	ICD-9-CM	Malignant neoplasm of cervix uteri
181*	Diagnosis	ICD-9-CM	Malignant neoplasm of placenta
182*	Diagnosis	ICD-9-CM	Malignant neoplasm of body of uterus
183*	Diagnosis	ICD-9-CM	Malignant neoplasm of ovary and other uterine adnexa
184*	Diagnosis	ICD-9-CM	Malignant neoplasm of other and unspecified female genital organs
186*	Diagnosis	ICD-9-CM	Malignant neoplasm of testis
188*	Diagnosis	ICD-9-CM	Malignant neoplasm of bladder
140*	Diagnosis	ICD-9-CM	Malignant neoplasm of lip
141*	Diagnosis	ICD-9-CM	Malignant neoplasm of tongue
142*	Diagnosis	ICD-9-CM	Malignant neoplasm of major salivary glands
143*	Diagnosis	ICD-9-CM	Malignant neoplasm of gum
144*	Diagnosis	ICD-9-CM	Malignant neoplasm of floor of mouth
145*	Diagnosis	ICD-9-CM	Malignant neoplasm of other and unspecified parts of mouth
146*	Diagnosis	ICD-9-CM	Malignant neoplasm of oropharynx
147*	Diagnosis	ICD-9-CM	Malignant neoplasm of nasopharynx
148*	Diagnosis	ICD-9-CM	Malignant neoplasm of hypopharynx
149*	Diagnosis	ICD-9-CM	Malignant neoplasm of other and ill-defined sites within the lip oral cavity and pharynx
150*	Diagnosis	ICD-9-CM	Malignant neoplasm of esophagus
152*	Diagnosis	ICD-9-CM	Malignant neoplasm of small intestine including duodenum
153*	Diagnosis	ICD-9-CM	Malignant neoplasm of colon
154*	Diagnosis	ICD-9-CM	Malignant neoplasm of rectum rectosigmoid junction and anus
155*	Diagnosis	ICD-9-CM	Malignant neoplasm of liver and intrahepatic bile ducts
156*	Diagnosis	ICD-9-CM	Malignant neoplasm of gallbladder and extrahepatic bile ducts
158*	Diagnosis	ICD-9-CM	Malignant neoplasm of retroperitoneum and peritoneum
159*	Diagnosis	ICD-9-CM	Malignant neoplasm of other and ill-defined sites within the digestive organs and peritoneum
160*	Diagnosis	ICD-9-CM	Malignant neoplasm of nasal cavities middle ear and accessory sinuses
161*	Diagnosis	ICD-9-CM	Malignant neoplasm of larynx
163*	Diagnosis	ICD-9-CM	Malignant neoplasm of pleura
164*	Diagnosis	ICD-9-CM	Malignant neoplasm of thymus heart and mediastinum
165*	Diagnosis	ICD-9-CM	Malignant neoplasm of other and ill-defined sites within the respiratory system and intrathoracic organs
170*	Diagnosis	ICD-9-CM	Malignant neoplasm of bone and articular cartilage
171*	Diagnosis	ICD-9-CM	Malignant neoplasm of connective and other soft tissue
174*	Diagnosis	ICD-9-CM	Malignant neoplasm of female breast
175*	Diagnosis	ICD-9-CM	Malignant neoplasm of male breast
176*	Diagnosis	ICD-9-CM	Kaposi's sarcoma
185*	Diagnosis	ICD-9-CM	Malignant neoplasm of prostate
187*	Diagnosis	ICD-9-CM	Malignant neoplasm of penis and other male genital organs
189*	Diagnosis	ICD-9-CM	Malignant neoplasm of kidney and other and unspecified urinary organs
190*	Diagnosis	ICD-9-CM	Malignant neoplasm of eye
191*	Diagnosis	ICD-9-CM	Malignant neoplasm of brain

192*	Diagnosis	ICD-9-CM	Malignant neoplasm of other and unspecified parts of nervous system
193*	Diagnosis	ICD-9-CM	Malignant neoplasm of thyroid gland
194*	Diagnosis	ICD-9-CM	Malignant neoplasm of other endocrine glands and related structures
195*	Diagnosis	ICD-9-CM	Malignant neoplasm of other and ill-defined sites
200*	Diagnosis	ICD-9-CM	Lymphosarcoma and reticulosarcoma and other specified malignant tumors of lymphatic tissue
201*	Diagnosis	ICD-9-CM	Hodgkin's disease
202*	Diagnosis	ICD-9-CM	Other malignant neoplasms of lymphoid and histiocytic tissue
203*	Diagnosis	ICD-9-CM	Multiple myeloma and immunoproliferative neoplasms
204*	Diagnosis	ICD-9-CM	Lymphoid leukemia
205*	Diagnosis	ICD-9-CM	Myeloid leukemia
206*	Diagnosis	ICD-9-CM	Monocytic leukemia
207*	Diagnosis	ICD-9-CM	Other specified leukemia
208*	Diagnosis	ICD-9-CM	Leukemia of unspecified cell type
273.0	Diagnosis	ICD-9-CM	Polyclonal hypergammaglobulinemia
273.3	Diagnosis	ICD-9-CM	Macroglobulinemia
196	Diagnosis	ICD-9-CM	Secondary and unspecified malignant neoplasm of lymph nodes
197	Diagnosis	ICD-9-CM	Secondary malignant neoplasm of respiratory and digestive systems
198	Diagnosis	ICD-9-CM	Secondary malignant neoplasm of other specified sites
199	Diagnosis	ICD-9-CM	Malignant neoplasm without specification of site
196*	Diagnosis	ICD-9-CM	Secondary and unspecified malignant neoplasm of lymph nodes
197*	Diagnosis	ICD-9-CM	Secondary malignant neoplasm of respiratory and digestive systems
198*	Diagnosis	ICD-9-CM	Secondary malignant neoplasm of other specified sites
199*	Diagnosis	ICD-9-CM	Malignant neoplasm without specification of site
196**	Diagnosis	ICD-9-CM	Secondary and unspecified malignant neoplasm of lymph nodes
197**	Diagnosis	ICD-9-CM	Secondary malignant neoplasm of respiratory and digestive systems
198**	Diagnosis	ICD-9-CM	Secondary malignant neoplasm of other specified sites
199**	Diagnosis	ICD-9-CM	Malignant neoplasm without specification of site
209.2	Diagnosis	ICD-9-CM	Malignant carcinoid tumors of other and unspecified sites
209.3	Diagnosis	ICD-9-CM	Malignant poorly differentiated neuroendocrine tumors
209.7	Diagnosis	ICD-9-CM	Secondary neuroendocrine tumors
209.0	Diagnosis	ICD-9-CM	Malignant carcinoid tumors of the small intestine
209.1	Diagnosis	ICD-9-CM	Malignant carcinoid tumors of the appendix, large intestine, and rectum
209.2*	Diagnosis	ICD-9-CM	Malignant carcinoid tumors of other and unspecified sites
209.3*	Diagnosis	ICD-9-CM	Malignant poorly differentiated neuroendocrine tumors
209.7*	Diagnosis	ICD-9-CM	Secondary neuroendocrine tumors
209.0*	Diagnosis	ICD-9-CM	Malignant carcinoid tumors of the small intestine
209.1*	Diagnosis	ICD-9-CM	Malignant carcinoid tumors of the appendix, large intestine, and rectum

Stroke

433.01	Diagnosis	ICD-9-CM	Occlusion and stenosis of basilar artery with cerebral infarction
433.11	Diagnosis	ICD-9-CM	Occlusion and stenosis of carotid artery with cerebral infarction

433.21	Diagnosis	ICD-9-CM	Occlusion and stenosis of vertebral artery with cerebral infarction
433.31	Diagnosis	ICD-9-CM	Occlusion and stenosis of multiple and bilateral precerebral arteries with cerebral infarction
433.81	Diagnosis	ICD-9-CM	Occlusion and stenosis of other specified precerebral artery with cerebral infarction
433.91	Diagnosis	ICD-9-CM	Occlusion and stenosis of unspecified precerebral artery with cerebral infarction
434.01	Diagnosis	ICD-9-CM	Cerebral thrombosis with cerebral infarction
434.11	Diagnosis	ICD-9-CM	Cerebral embolism with cerebral infarction
434.91	Diagnosis	ICD-9-CM	Cerebral artery occlusion, unspecified, with cerebral infarction
436	Diagnosis	ICD-9-CM	Acute, but ill-defined, cerebrovascular disease
430	Diagnosis	ICD-9-CM	Subarachnoid hemorrhage
431	Diagnosis	ICD-9-CM	Intracerebral hemorrhage

Appendix E: List of Diagnosis Codes Used to Define Outcome in this Request

Code	Code Category	Code Type	Description
433.01	Diagnosis	ICD-9-CM	Occlusion and stenosis of basilar artery with cerebral infarction
433.11	Diagnosis	ICD-9-CM	Occlusion and stenosis of carotid artery with cerebral infarction
433.21	Diagnosis	ICD-9-CM	Occlusion and stenosis of vertebral artery with cerebral infarction
433.31	Diagnosis	ICD-9-CM	Occlusion and stenosis of multiple and bilateral precerebral arteries with cerebral infarction
433.81	Diagnosis	ICD-9-CM	Occlusion and stenosis of other specified precerebral artery with cerebral infarction
433.91	Diagnosis	ICD-9-CM	Occlusion and stenosis of unspecified precerebral artery with cerebral infarction
434.01	Diagnosis	ICD-9-CM	Cerebral thrombosis with cerebral infarction
434.11	Diagnosis	ICD-9-CM	Cerebral embolism with cerebral infarction
434.91	Diagnosis	ICD-9-CM	Cerebral artery occlusion, unspecified, with cerebral infarction
436	Diagnosis	ICD-9-CM	Acute, but ill-defined, cerebrovascular disease
430	Diagnosis	ICD-9-CM	Subarachnoid hemorrhage
431	Diagnosis	ICD-9-CM	Intracerebral hemorrhage

Appendix F: List of Covariates used in Propensity Score Estimation Model

Covariates

Age (continuous)

Year of exposure

Gender

Female

Male

Medical Conditions¹

AMI history

Diabetes

Heart failure

Hypercholesterolemia

Hypertension

Kidney failure (acute or chronic)

Obesity

Transient ischemic attack (TIA)

Atrial Fibrillation/Flutter

Peripheral vascular disease

Coagulation defects

Other cardiovascular disease

Psychiatric Conditions¹

Anxiety

Bipolar

Depression

PTSD

Schizophrenia/psychotic disorder

Substance abuse

Drug Use Exposures²

ACE-inhibitors

Antiarrhythmics

Beta-blocker use

Statin use

Oral anticoagulant

Non-oral anticoagulant

Angiotensin receptor blockers (ARBs)

Antiplatelets

Diuretics

Health Services Utilization³

inpatient stays (IP)

non-acute institutional stays (IS)

emergency department visits (ED)

outpatient visits (AV)

other ambulatory encounters (e.g. telemedicine, email consults) (OA)

Drug Utilization³

dispensings

unique generics dispensed

unique drug classes dispensed

Combined comorbidity index, CCI⁴

¹ Medical and psychiatric conditions defined as ≥ 1 procedure/diagnosis code in IP, ED, or IS setting or ≥ 2 procedure/diagnosis codes (on separate dates) in AV or OA settings in previous 183 days.

² Drug use defined as at least 1 dispensing in the previous 183 days. Additional diagnostic and procedural codes were used to identify anticoagulant use.

³ Means and standard errors will be reported.

⁴ See <https://www.ncbi.nlm.nih.gov/pubmed/21208778>

Appendix G: List of Diagnosis and Procedure Codes Used to Define Covariates in this Request

Covariate	Code	Code Category	Code Type	Description
Diabetes	249	Diagnosis	ICD-9-CM	Secondary diabetes mellitus
Diabetes	249.0	Diagnosis	ICD-9-CM	Secondary diabetes mellitus without mention of complication
Diabetes	249.00	Diagnosis	ICD-9-CM	Secondary diabetes mellitus without mention of complication, not stated as uncontrolled, or unspecified
Diabetes	249.01	Diagnosis	ICD-9-CM	Secondary diabetes mellitus without mention of complication, uncontrolled
Diabetes	249.1	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with ketoacidosis
Diabetes	249.10	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with ketoacidosis, not stated as uncontrolled, or unspecified
Diabetes	249.11	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with ketoacidosis, uncontrolled
Diabetes	249.2	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with hyperosmolarity
Diabetes	249.20	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with hyperosmolarity, not stated as uncontrolled, or unspecified
Diabetes	249.21	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with hyperosmolarity, uncontrolled
Diabetes	249.3	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with other coma
Diabetes	249.30	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with other coma, not stated as uncontrolled, or unspecified
Diabetes	249.31	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with other coma, uncontrolled
Diabetes	249.4	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with renal manifestations
Diabetes	249.40	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with renal manifestations, not stated as uncontrolled, or unspecified
Diabetes	249.41	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with renal manifestations, uncontrolled
Diabetes	249.5	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with ophthalmic manifestations
Diabetes	249.50	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with ophthalmic manifestations, not stated as uncontrolled, or unspecified
Diabetes	249.51	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with ophthalmic manifestations, uncontrolled
Diabetes	249.6	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with neurological manifestations
Diabetes	249.60	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with neurological manifestations, not stated as uncontrolled, or unspecified
Diabetes	249.61	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with neurological manifestations, uncontrolled
Diabetes	249.7	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with peripheral circulatory disorders
Diabetes	249.70	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with peripheral circulatory disorders, not stated as uncontrolled, or unspecified
Diabetes	249.71	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with peripheral circulatory disorders, uncontrolled
Diabetes	249.8	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with other specified manifestations
Diabetes	249.80	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with other specified manifestations, not stated as uncontrolled, or unspecified
Diabetes	249.81	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with other specified manifestations, uncontrolled
Diabetes	249.9	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with unspecified complication
Diabetes	249.90	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with unspecified complication, not stated as uncontrolled, or unspecified
Diabetes	249.91	Diagnosis	ICD-9-CM	Secondary diabetes mellitus with unspecified complication, uncontrolled
Diabetes	250	Diagnosis	ICD-9-CM	Diabetes mellitus
Diabetes	250.0	Diagnosis	ICD-9-CM	Diabetes mellitus without mention of complication
Diabetes	250.00	Diagnosis	ICD-9-CM	Diabetes mellitus without mention of complication, type II or unspecified type, not stated as uncontrolled
Diabetes	250.01	Diagnosis	ICD-9-CM	Diabetes mellitus without mention of complication, type I [juvenile type], not stated as uncontrolled
Diabetes	250.02	Diagnosis	ICD-9-CM	Diabetes mellitus without mention of complication, type II or unspecified type, uncontrolled
Diabetes	250.03	Diagnosis	ICD-9-CM	Diabetes mellitus without mention of complication, type I [juvenile type], uncontrolled
Diabetes	250.1	Diagnosis	ICD-9-CM	Diabetes with ketoacidosis
Diabetes	250.10	Diagnosis	ICD-9-CM	Diabetes with ketoacidosis, type II or unspecified type, not stated as uncontrolled
Diabetes	250.11	Diagnosis	ICD-9-CM	Diabetes with ketoacidosis, type I [juvenile type], not stated as uncontrolled
Diabetes	250.12	Diagnosis	ICD-9-CM	Diabetes with ketoacidosis, type II or unspecified type, uncontrolled
Diabetes	250.13	Diagnosis	ICD-9-CM	Diabetes with ketoacidosis, type I [juvenile type], uncontrolled
Diabetes	250.2	Diagnosis	ICD-9-CM	Diabetes with hyperosmolarity
Diabetes	250.20	Diagnosis	ICD-9-CM	Diabetes with hyperosmolarity, type II or unspecified type, not stated as uncontrolled
Diabetes	250.21	Diagnosis	ICD-9-CM	Diabetes with hyperosmolarity, type I [juvenile type], not stated as uncontrolled
Diabetes	250.22	Diagnosis	ICD-9-CM	Diabetes with hyperosmolarity, type II or unspecified type, uncontrolled
Diabetes	250.23	Diagnosis	ICD-9-CM	Diabetes with hyperosmolarity, type I [juvenile type], uncontrolled
Diabetes	250.3	Diagnosis	ICD-9-CM	Diabetes with other coma
Diabetes	250.30	Diagnosis	ICD-9-CM	Diabetes with other coma, type II or unspecified type, not stated as uncontrolled
Diabetes	250.31	Diagnosis	ICD-9-CM	Diabetes with other coma, type I [juvenile type], not stated as uncontrolled
Diabetes	250.32	Diagnosis	ICD-9-CM	Diabetes with other coma, type II or unspecified type, uncontrolled
Diabetes	250.33	Diagnosis	ICD-9-CM	Diabetes with other coma, type I [juvenile type], uncontrolled
Diabetes	250.4	Diagnosis	ICD-9-CM	Diabetes with renal manifestations
Diabetes	250.40	Diagnosis	ICD-9-CM	Diabetes with renal manifestations, type II or unspecified type, not stated as uncontrolled
Diabetes	250.41	Diagnosis	ICD-9-CM	Diabetes with renal manifestations, type I [juvenile type], not stated as uncontrolled
Diabetes	250.42	Diagnosis	ICD-9-CM	Diabetes with renal manifestations, type II or unspecified type, uncontrolled

Diabetes	250.43	Diagnosis	ICD-9-CM	Diabetes with renal manifestations, type I [juvenile type], uncontrolled
Diabetes	250.5	Diagnosis	ICD-9-CM	Diabetes with ophthalmic manifestations
Diabetes	250.50	Diagnosis	ICD-9-CM	Diabetes with ophthalmic manifestations, type II or unspecified type, not stated as uncontrolled
Diabetes	250.51	Diagnosis	ICD-9-CM	Diabetes with ophthalmic manifestations, type I [juvenile type], not stated as uncontrolled
Diabetes	250.52	Diagnosis	ICD-9-CM	Diabetes with ophthalmic manifestations, type II or unspecified type, uncontrolled
Diabetes	250.53	Diagnosis	ICD-9-CM	Diabetes with ophthalmic manifestations, type I [juvenile type], uncontrolled
Diabetes	250.6	Diagnosis	ICD-9-CM	Diabetes with neurological manifestations
Diabetes	250.60	Diagnosis	ICD-9-CM	Diabetes with neurological manifestations, type II or unspecified type, not stated as uncontrolled
Diabetes	250.61	Diagnosis	ICD-9-CM	Diabetes with neurological manifestations, type I [juvenile type], not stated as uncontrolled
Diabetes	250.62	Diagnosis	ICD-9-CM	Diabetes with neurological manifestations, type II or unspecified type, uncontrolled
Diabetes	250.63	Diagnosis	ICD-9-CM	Diabetes with neurological manifestations, type I [juvenile type], uncontrolled
Diabetes	250.7	Diagnosis	ICD-9-CM	Diabetes with peripheral circulatory disorders
Diabetes	250.70	Diagnosis	ICD-9-CM	Diabetes with peripheral circulatory disorders, type II or unspecified type, not stated as uncontrolled
Diabetes	250.71	Diagnosis	ICD-9-CM	Diabetes with peripheral circulatory disorders, type I [juvenile type], not stated as uncontrolled
Diabetes	250.72	Diagnosis	ICD-9-CM	Diabetes with peripheral circulatory disorders, type II or unspecified type, uncontrolled
Diabetes	250.73	Diagnosis	ICD-9-CM	Diabetes with peripheral circulatory disorders, type I [juvenile type], uncontrolled
Diabetes	250.8	Diagnosis	ICD-9-CM	Diabetes with other specified manifestations
Diabetes	250.80	Diagnosis	ICD-9-CM	Diabetes with other specified manifestations, type II or unspecified type, not stated as uncontrolled
Diabetes	250.81	Diagnosis	ICD-9-CM	Diabetes with other specified manifestations, type I [juvenile type], not stated as uncontrolled
Diabetes	250.82	Diagnosis	ICD-9-CM	Diabetes with other specified manifestations, type II or unspecified type, uncontrolled
Diabetes	250.83	Diagnosis	ICD-9-CM	Diabetes with other specified manifestations, type I [juvenile type], uncontrolled
Diabetes	250.9	Diagnosis	ICD-9-CM	Diabetes with unspecified complication
Diabetes	250.90	Diagnosis	ICD-9-CM	Diabetes with unspecified complication, type II or unspecified type, not stated as uncontrolled
Diabetes	250.91	Diagnosis	ICD-9-CM	Diabetes with unspecified complication, type I [juvenile type], not stated as uncontrolled
Diabetes	250.92	Diagnosis	ICD-9-CM	Diabetes with unspecified complication, type II or unspecified type, uncontrolled
Diabetes	250.93	Diagnosis	ICD-9-CM	Diabetes with unspecified complication, type I [juvenile type], uncontrolled
Diabetes	357.2	Diagnosis	ICD-9-CM	Polyneuropathy in diabetes
Diabetes	362.0	Diagnosis	ICD-9-CM	Diabetic retinopathy
Diabetes	362.01	Diagnosis	ICD-9-CM	Background diabetic retinopathy
Diabetes	362.02	Diagnosis	ICD-9-CM	Proliferative diabetic retinopathy
Diabetes	362.03	Diagnosis	ICD-9-CM	Nonproliferative diabetic retinopathy NOS
Diabetes	362.04	Diagnosis	ICD-9-CM	Mild nonproliferative diabetic retinopathy
Diabetes	362.05	Diagnosis	ICD-9-CM	Moderate nonproliferative diabetic retinopathy
Diabetes	362.06	Diagnosis	ICD-9-CM	Severe nonproliferative diabetic retinopathy
Diabetes	362.07	Diagnosis	ICD-9-CM	Diabetic macular edema
Diabetes	366.41	Diagnosis	ICD-9-CM	Diabetic cataract
Heart Failure	398.91	Diagnosis	ICD-9-CM	Rheumatic heart failure (congestive)
Heart Failure	402.01	Diagnosis	ICD-9-CM	Malignant hypertensive heart disease with heart failure
Heart Failure	402.11	Diagnosis	ICD-9-CM	Benign hypertensive heart disease with heart failure
Heart Failure	402.91	Diagnosis	ICD-9-CM	Hypertensive heart disease, unspecified, with heart failure
Heart Failure	404.01	Diagnosis	ICD-9-CM	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
Heart Failure	404.03	Diagnosis	ICD-9-CM	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease
Heart Failure	404.11	Diagnosis	ICD-9-CM	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
Heart Failure	404.13	Diagnosis	ICD-9-CM	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease
Heart Failure	404.91	Diagnosis	ICD-9-CM	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
Heart Failure	404.93	Diagnosis	ICD-9-CM	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease
Heart Failure	428.0	Diagnosis	ICD-9-CM	Congestive heart failure, unspecified
Heart Failure	428	Diagnosis	ICD-9-CM	Heart failure
Heart Failure	428.1	Diagnosis	ICD-9-CM	Left heart failure
Heart Failure	428.20	Diagnosis	ICD-9-CM	Unspecified systolic heart failure
Heart Failure	428.2	Diagnosis	ICD-9-CM	Systolic heart failure
Heart Failure	428.21	Diagnosis	ICD-9-CM	Acute systolic heart failure
Heart Failure	428.22	Diagnosis	ICD-9-CM	Chronic systolic heart failure
Heart Failure	428.23	Diagnosis	ICD-9-CM	Acute on chronic systolic heart failure
Heart Failure	428.30	Diagnosis	ICD-9-CM	Unspecified diastolic heart failure
Heart Failure	428.3	Diagnosis	ICD-9-CM	Diastolic heart failure
Heart Failure	428.31	Diagnosis	ICD-9-CM	Acute diastolic heart failure
Heart Failure	428.32	Diagnosis	ICD-9-CM	Chronic diastolic heart failure

Heart Failure	428.33	Diagnosis	ICD-9-CM	Acute on chronic diastolic heart failure
Heart Failure	428.40	Diagnosis	ICD-9-CM	Unspecified combined systolic and diastolic heart failure
Heart Failure	428.4	Diagnosis	ICD-9-CM	Combined systolic and diastolic heart failure
Heart Failure	428.41	Diagnosis	ICD-9-CM	Acute combined systolic and diastolic heart failure
Heart Failure	428.42	Diagnosis	ICD-9-CM	Chronic combined systolic and diastolic heart failure
Heart Failure	428.43	Diagnosis	ICD-9-CM	Acute on chronic combined systolic and diastolic heart failure
Heart Failure	428.9	Diagnosis	ICD-9-CM	Unspecified heart failure
Hypercholesterolemia	272.0	Diagnosis	ICD-9-CM	Pure hypercholesterolemia
Hypercholesterolemia	272.1	Diagnosis	ICD-9-CM	Pure hyperglyceridemia
Hypercholesterolemia	272.2	Diagnosis	ICD-9-CM	Mixed hyperlipidemia
Hypercholesterolemia	272.3	Diagnosis	ICD-9-CM	Hyperchylomicronemia
Hypercholesterolemia	272.4	Diagnosis	ICD-9-CM	Other and unspecified hyperlipidemia
Hypertension	362.11	Diagnosis	ICD-9-CM	Hypertensive retinopathy
Hypertension	401	Diagnosis	ICD-9-CM	Essential hypertension
Hypertension	401.0	Diagnosis	ICD-9-CM	Essential hypertension, malignant
Hypertension	401.1	Diagnosis	ICD-9-CM	Essential hypertension, benign
Hypertension	401.9	Diagnosis	ICD-9-CM	Unspecified essential hypertension
Hypertension	405.0	Diagnosis	ICD-9-CM	Secondary hypertension, malignant
Hypertension	405	Diagnosis	ICD-9-CM	Secondary hypertension
Hypertension	405.01	Diagnosis	ICD-9-CM	Secondary renovascular hypertension, malignant
Hypertension	405.09	Diagnosis	ICD-9-CM	Other secondary hypertension, malignant
Hypertension	405.1	Diagnosis	ICD-9-CM	Secondary hypertension, benign
Hypertension	405.11	Diagnosis	ICD-9-CM	Secondary renovascular hypertension, benign
Hypertension	405.19	Diagnosis	ICD-9-CM	Other secondary hypertension, benign
Hypertension	405.9	Diagnosis	ICD-9-CM	Unspecified secondary hypertension, unspecified
Hypertension	405.91	Diagnosis	ICD-9-CM	Secondary renovascular hypertension, unspecified
Hypertension	405.99	Diagnosis	ICD-9-CM	Other secondary hypertension, unspecified
Hypertension	437.2	Diagnosis	ICD-9-CM	Hypertensive encephalopathy
Hypertension	402.x	Diagnosis	ICD-9-CM	Hypertensive heart disease
Hypertension	403.x	Diagnosis	ICD-9-CM	Hypertensive chronic kidney disease
Hypertension	404.x	Diagnosis	ICD-9-CM	Hypertensive heart and chronic kidney disease
Hypertension	4050F	Procedure	CPT Category II	Hypertension plan of care documented as appropriate
Kidney Failure	285.21	Diagnosis	ICD-9-CM	Anemia in chronic kidney disease
Kidney Failure	403.0	Diagnosis	ICD-9-CM	Hypertensive chronic kidney disease, malignant
Kidney Failure	403	Diagnosis	ICD-9-CM	Hypertensive chronic kidney disease
Kidney Failure	403.1	Diagnosis	ICD-9-CM	Hypertensive chronic kidney disease, benign
Kidney Failure	403.9	Diagnosis	ICD-9-CM	Hypertensive chronic kidney disease, unspecified
Kidney Failure	404	Diagnosis	ICD-9-CM	Hypertensive heart and chronic kidney disease
Kidney Failure	404.1	Diagnosis	ICD-9-CM	Hypertensive heart and chronic kidney disease, benign
Kidney Failure	404.9	Diagnosis	ICD-9-CM	Hypertensive heart and chronic kidney disease, unspecified
Kidney Failure	458.21	Diagnosis	ICD-9-CM	Hypotension of hemodialysis
Kidney Failure	584	Diagnosis	ICD-9-CM	Acute kidney failure
Kidney Failure	584.5	Diagnosis	ICD-9-CM	Acute kidney failure with lesion of tubular necrosis
Kidney Failure	584.6	Diagnosis	ICD-9-CM	Acute kidney failure with lesion of renal cortical necrosis
Kidney Failure	584.7	Diagnosis	ICD-9-CM	Acute kidney failure with lesion of medullary [papillary] necrosis
Kidney Failure	584.8	Diagnosis	ICD-9-CM	Acute kidney failure with other specified pathological lesion in kidney
Kidney Failure	584.9	Diagnosis	ICD-9-CM	Acute kidney failure, unspecified
Kidney Failure	585	Diagnosis	ICD-9-CM	Chronic kidney disease (CKD)
Kidney Failure	585.1	Diagnosis	ICD-9-CM	Chronic kidney disease, Stage I
Kidney Failure	585.2	Diagnosis	ICD-9-CM	Chronic kidney disease, Stage II (mild)
Kidney Failure	585.3	Diagnosis	ICD-9-CM	Chronic kidney disease, Stage III (moderate)
Kidney Failure	585.4	Diagnosis	ICD-9-CM	Chronic kidney disease, Stage IV (severe)
Kidney Failure	585.5	Diagnosis	ICD-9-CM	Chronic kidney disease, Stage V
Kidney Failure	585.6	Diagnosis	ICD-9-CM	End stage renal disease
Kidney Failure	585.9	Diagnosis	ICD-9-CM	Chronic kidney disease, unspecified
Kidney Failure	586	Diagnosis	ICD-9-CM	Unspecified renal failure
Kidney Failure	588.81	Diagnosis	ICD-9-CM	Secondary hyperparathyroidism (of renal origin)
Kidney Failure	588.89	Diagnosis	ICD-9-CM	Other specified disorders resulting from impaired renal function
Kidney Failure	639.3	Diagnosis	ICD-9-CM	Complications following abortion and ectopic and molar pregnancies, kidney failure

Kidney Failure	669.3	Diagnosis	ICD-9-CM	Acute kidney failure following labor and delivery
Kidney Failure	669.32	Diagnosis	ICD-9-CM	Acute kidney failure following labor and delivery, delivered, with mention of postpartum complication
Kidney Failure	996.56	Diagnosis	ICD-9-CM	Mechanical complications due to peritoneal dialysis catheter
Kidney Failure	996.68	Diagnosis	ICD-9-CM	Infection and inflammatory reaction due to peritoneal dialysis catheter
Kidney Failure	996.73	Diagnosis	ICD-9-CM	Other complications due to renal dialysis device, implant, and graft
Kidney Failure	G8771	Procedure	HCPSCS	Documentation of diagnosis of chronic kidney disease
Kidney Failure	V42.0	Diagnosis	ICD-9-CM	Kidney replaced by transplant
Kidney Failure	V45.1	Diagnosis	ICD-9-CM	Renal dialysis status
Kidney Failure	V56	Diagnosis	ICD-9-CM	Encounter for dialysis and dialysis catheter care
Obesity	278.0	Diagnosis	ICD-9-CM	Overweight and obesity
Obesity	278.00	Diagnosis	ICD-9-CM	Obesity, unspecified
Obesity	278.01	Diagnosis	ICD-9-CM	Morbid obesity
Obesity	278.02	Diagnosis	ICD-9-CM	Overweight
Obesity	278.03	Diagnosis	ICD-9-CM	Obesity hypoventilation syndrome
Obesity	783.1	Diagnosis	ICD-9-CM	Abnormal weight gain
Obesity	793.91	Diagnosis	ICD-9-CM	Image test inconclusive due to excess body fat
Obesity	V85.3	Diagnosis	ICD-9-CM	Body mass index between 30-39 adult
Obesity	V85.4	Diagnosis	ICD-9-CM	Body mass index 40 and over adult
Obesity	V85.54	Diagnosis	ICD-9-CM	Body Mass Index, pediatric, greater than or equal to 95th percentile for age
TIA	435	Diagnosis	ICD-9-CM	Transient cerebral ischemia
TIA	435.0	Diagnosis	ICD-9-CM	Basilar artery syndrome
TIA	435.1	Diagnosis	ICD-9-CM	Vertebral artery syndrome
TIA	435.2	Diagnosis	ICD-9-CM	Subclavian steal syndrome
TIA	435.3	Diagnosis	ICD-9-CM	Vertebrobasilar artery syndrome
TIA	435.8	Diagnosis	ICD-9-CM	Other specified transient cerebral ischemias
TIA	435.9	Diagnosis	ICD-9-CM	Unspecified transient cerebral ischemia
Anxiety	293.84	Diagnosis	ICD-9-CM	Anxiety disorder in conditions classified elsewhere
Anxiety	300.0	Diagnosis	ICD-9-CM	Anxiety, dissociative and somatoform disorders
Anxiety	300.00	Diagnosis	ICD-9-CM	Anxiety state, unspecified
Anxiety	300.01	Diagnosis	ICD-9-CM	Anxiety states
Anxiety	300.02	Diagnosis	ICD-9-CM	Generalized anxiety disorder
Anxiety	300.09	Diagnosis	ICD-9-CM	Other anxiety states
Anxiety	300.10	Diagnosis	ICD-9-CM	Hysteria, unspecified
Anxiety	300.2	Diagnosis	ICD-9-CM	Phobic disorders
Anxiety	300.20	Diagnosis	ICD-9-CM	Phobia, unspecified
Anxiety	300.21	Diagnosis	ICD-9-CM	Agoraphobia with panic disorder
Anxiety	300.22	Diagnosis	ICD-9-CM	Agoraphobia without mention of panic attacks
Anxiety	300.23	Diagnosis	ICD-9-CM	Social phobia
Anxiety	300.29	Diagnosis	ICD-9-CM	Other isolated or specific phobias
Anxiety	300.3	Diagnosis	ICD-9-CM	Obsessive-compulsive disorders
Anxiety	300.5	Diagnosis	ICD-9-CM	Neurasthenia
Anxiety	300.89	Diagnosis	ICD-9-CM	Other somatoform disorders
Anxiety	300.9	Diagnosis	ICD-9-CM	Unspecified nonpsychotic mental disorder
Anxiety	308.0	Diagnosis	ICD-9-CM	Predominant disturbance of emotions
Anxiety	308.1	Diagnosis	ICD-9-CM	Predominant disturbance of consciousness
Anxiety	308.2	Diagnosis	ICD-9-CM	Predominant psychomotor disturbance
Anxiety	308.3	Diagnosis	ICD-9-CM	Other acute reactions to stress
Anxiety	308.4	Diagnosis	ICD-9-CM	Mixed disorders as reaction to stress
Anxiety	308.9	Diagnosis	ICD-9-CM	Unspecified acute reaction to stress
Anxiety	313.0	Diagnosis	ICD-9-CM	Overanxious disorder
Anxiety	313.1	Diagnosis	ICD-9-CM	Misery and unhappiness disorder
Anxiety	313.21	Diagnosis	ICD-9-CM	Shyness disorder of childhood
Anxiety	313.22	Diagnosis	ICD-9-CM	Introverted disorder of childhood
Anxiety	313.3	Diagnosis	ICD-9-CM	Relationship problems
Anxiety	313.82	Diagnosis	ICD-9-CM	Identity disorder
Anxiety	313.83	Diagnosis	ICD-9-CM	Academic underachievement disorder
Bipolar	296.0	Diagnosis	ICD-9-CM	Bipolar I disorder, single manic episode
Bipolar	296.00	Diagnosis	ICD-9-CM	Bipolar I disorder, single manic episode, unspecified
Bipolar	296.01	Diagnosis	ICD-9-CM	Bipolar I disorder, single manic episode, mild

Bipolar	296.02	Diagnosis	ICD-9-CM	Bipolar I disorder, single manic episode, moderate
Bipolar	296.03	Diagnosis	ICD-9-CM	Bipolar I disorder, single manic episode, severe, without mention of psychotic behavior
Bipolar	296.04	Diagnosis	ICD-9-CM	Bipolar I disorder, single manic episode, severe, specified as with psychotic behavior
Bipolar	296.05	Diagnosis	ICD-9-CM	Bipolar I disorder, single manic episode, in partial or unspecified remission
Bipolar	296.06	Diagnosis	ICD-9-CM	Bipolar I disorder, single manic episode, in full remission
Bipolar	296.10	Diagnosis	ICD-9-CM	Manic disorder, recurrent episode, unspecified
Bipolar	296.11	Diagnosis	ICD-9-CM	Manic disorder, recurrent episode, mild
Bipolar	296.12	Diagnosis	ICD-9-CM	Manic disorder, recurrent episode, moderate
Bipolar	296.13	Diagnosis	ICD-9-CM	Manic disorder, recurrent episode, severe, without mention of psychotic behavior
Bipolar	296.14	Diagnosis	ICD-9-CM	Manic disorder, recurrent episode, severe, specified as with psychotic behavior
Bipolar	296.15	Diagnosis	ICD-9-CM	Manic disorder, recurrent episode, in partial or unspecified remission
Bipolar	296.16	Diagnosis	ICD-9-CM	Manic disorder, recurrent episode, in full remission
Bipolar	296.40	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) manic, unspecified
Bipolar	296.4	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) manic
Bipolar	296.41	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) manic, mild
Bipolar	296.42	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) manic, moderate
Bipolar	296.43	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) manic, severe, without mention of psychotic behavior
Bipolar	296.44	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) manic, severe, specified as with psychotic behavior
Bipolar	296.45	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) manic, in partial or unspecified remission
Bipolar	296.46	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) manic, in full remission
Bipolar	296.50	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) depressed, unspecified
Bipolar	296.5	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current), depressed
Bipolar	296.51	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) depressed, mild
Bipolar	296.52	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) depressed, moderate
Bipolar	296.53	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) depressed, severe, without mention of psychotic behavior
Bipolar	296.54	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) depressed, severe, specified as with psychotic behavior
Bipolar	296.55	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) depressed, in partial or unspecified remission
Bipolar	296.56	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) depressed, in full remission
Bipolar	296.6	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current), mixed
Bipolar	296.60	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) mixed, unspecified
Bipolar	296.61	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) mixed, mild
Bipolar	296.62	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) mixed, moderate
Bipolar	296.63	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) mixed, severe, without mention of psychotic behavior
Bipolar	296.64	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) mixed, severe, specified as with psychotic behavior
Bipolar	296.65	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) mixed, in partial or unspecified remission
Bipolar	296.66	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) mixed, in full remission
Bipolar	296.7	Diagnosis	ICD-9-CM	Bipolar I disorder, most recent episode (or current) unspecified
Bipolar	296.8	Diagnosis	ICD-9-CM	Other and unspecified bipolar disorders
Bipolar	296.80	Diagnosis	ICD-9-CM	Bipolar disorder, unspecified
Bipolar	296.81	Diagnosis	ICD-9-CM	Atypical manic disorder
Bipolar	296.82	Diagnosis	ICD-9-CM	Atypical depressive disorder
Bipolar	296.89	Diagnosis	ICD-9-CM	Other and unspecified bipolar disorders
Bipolar	296.9	Diagnosis	ICD-9-CM	Other and unspecified episodic mood disorder
Bipolar	296.90	Diagnosis	ICD-9-CM	Unspecified episodic mood disorder
Bipolar	296.99	Diagnosis	ICD-9-CM	Other specified episodic mood disorder
Schizophrenia and other psychosis	293.81	Diagnosis	ICD-9-CM	Psychotic disorder with delusions in conditions classified elsewhere
Schizophrenia and other psychosis	293.82	Diagnosis	ICD-9-CM	Psychotic disorder with hallucinations in conditions classified elsewhere
Schizophrenia and other psychosis	295.0	Diagnosis	ICD-9-CM	Simple type schizophrenia
Schizophrenia and other psychosis	295.00	Diagnosis	ICD-9-CM	Simple schizophrenia, unspecified condition
Schizophrenia and other psychosis	295.01	Diagnosis	ICD-9-CM	Simple schizophrenia, subchronic condition
Schizophrenia and other psychosis	295.02	Diagnosis	ICD-9-CM	Simple schizophrenia, chronic condition
Schizophrenia and other psychosis	295.03	Diagnosis	ICD-9-CM	Simple schizophrenia, subchronic condition with acute exacerbation
Schizophrenia and other psychosis	295.04	Diagnosis	ICD-9-CM	Simple schizophrenia, chronic condition with acute exacerbation
Schizophrenia and other psychosis	295.05	Diagnosis	ICD-9-CM	Simple schizophrenia, in remission
Schizophrenia and other psychosis	295.1	Diagnosis	ICD-9-CM	Disorganized type schizophrenia
Schizophrenia and other psychosis	295.10	Diagnosis	ICD-9-CM	Disorganized schizophrenia, unspecified condition
Schizophrenia and other psychosis	295.11	Diagnosis	ICD-9-CM	Disorganized schizophrenia, subchronic condition
Schizophrenia and other psychosis	295.12	Diagnosis	ICD-9-CM	Disorganized schizophrenia, chronic condition
Schizophrenia and other psychosis	295.13	Diagnosis	ICD-9-CM	Disorganized schizophrenia, subchronic condition with acute exacerbation

Schizophrenia and other psychosis	295.14	Diagnosis	ICD-9-CM	Disorganized schizophrenia, chronic condition with acute exacerbation
Schizophrenia and other psychosis	295.15	Diagnosis	ICD-9-CM	Disorganized schizophrenia, in remission
Schizophrenia and other psychosis	295.20	Diagnosis	ICD-9-CM	Catatonic schizophrenia, unspecified condition
Schizophrenia and other psychosis	295.2	Diagnosis	ICD-9-CM	Catatonic type schizophrenia
Schizophrenia and other psychosis	295.21	Diagnosis	ICD-9-CM	Catatonic schizophrenia, subchronic condition
Schizophrenia and other psychosis	295.22	Diagnosis	ICD-9-CM	Catatonic schizophrenia, chronic condition
Schizophrenia and other psychosis	295.23	Diagnosis	ICD-9-CM	Catatonic schizophrenia, subchronic condition with acute exacerbation
Schizophrenia and other psychosis	295.24	Diagnosis	ICD-9-CM	Catatonic schizophrenia, chronic condition with acute exacerbation
Schizophrenia and other psychosis	295.25	Diagnosis	ICD-9-CM	Catatonic schizophrenia, in remission
Schizophrenia and other psychosis	295.30	Diagnosis	ICD-9-CM	Paranoid schizophrenia, unspecified condition
Schizophrenia and other psychosis	295.3	Diagnosis	ICD-9-CM	Paranoid type schizophrenia
Schizophrenia and other psychosis	295.31	Diagnosis	ICD-9-CM	Paranoid schizophrenia, subchronic condition
Schizophrenia and other psychosis	295.32	Diagnosis	ICD-9-CM	Paranoid schizophrenia, chronic condition
Schizophrenia and other psychosis	295.33	Diagnosis	ICD-9-CM	Paranoid schizophrenia, subchronic condition with acute exacerbation
Schizophrenia and other psychosis	295.34	Diagnosis	ICD-9-CM	Paranoid schizophrenia, chronic condition with acute exacerbation
Schizophrenia and other psychosis	295.35	Diagnosis	ICD-9-CM	Paranoid schizophrenia, in remission
Schizophrenia and other psychosis	295.5	Diagnosis	ICD-9-CM	Latent schizophrenia
Schizophrenia and other psychosis	295.50	Diagnosis	ICD-9-CM	Latent schizophrenia, unspecified condition
Schizophrenia and other psychosis	295.51	Diagnosis	ICD-9-CM	Latent schizophrenia, subchronic condition
Schizophrenia and other psychosis	295.52	Diagnosis	ICD-9-CM	Latent schizophrenia, chronic condition
Schizophrenia and other psychosis	295.53	Diagnosis	ICD-9-CM	Latent schizophrenia, subchronic condition with acute exacerbation
Schizophrenia and other psychosis	295.54	Diagnosis	ICD-9-CM	Latent schizophrenia, chronic condition with acute exacerbation
Schizophrenia and other psychosis	295.55	Diagnosis	ICD-9-CM	Latent schizophrenia, in remission
Schizophrenia and other psychosis	295.80	Diagnosis	ICD-9-CM	Other specified types of schizophrenia, unspecified condition
Schizophrenia and other psychosis	295.8	Diagnosis	ICD-9-CM	Other specified types of schizophrenia
Schizophrenia and other psychosis	295.81	Diagnosis	ICD-9-CM	Other specified types of schizophrenia, subchronic condition
Schizophrenia and other psychosis	295.82	Diagnosis	ICD-9-CM	Other specified types of schizophrenia, chronic condition
Schizophrenia and other psychosis	295.83	Diagnosis	ICD-9-CM	Other specified types of schizophrenia, subchronic condition with acute exacerbation
Schizophrenia and other psychosis	295.84	Diagnosis	ICD-9-CM	Other specified types of schizophrenia, chronic condition with acute exacerbation
Schizophrenia and other psychosis	295.85	Diagnosis	ICD-9-CM	Other specified types of schizophrenia, in remission
Schizophrenia and other psychosis	295.90	Diagnosis	ICD-9-CM	Unspecified schizophrenia, unspecified condition
Schizophrenia and other psychosis	295.9	Diagnosis	ICD-9-CM	Unspecified schizophrenia
Schizophrenia and other psychosis	295.91	Diagnosis	ICD-9-CM	Unspecified schizophrenia, subchronic condition
Schizophrenia and other psychosis	295.92	Diagnosis	ICD-9-CM	Unspecified schizophrenia, chronic condition
Schizophrenia and other psychosis	295.93	Diagnosis	ICD-9-CM	Unspecified schizophrenia, subchronic condition with acute exacerbation
Schizophrenia and other psychosis	295.94	Diagnosis	ICD-9-CM	Unspecified schizophrenia, chronic condition with acute exacerbation
Schizophrenia and other psychosis	295.95	Diagnosis	ICD-9-CM	Unspecified schizophrenia, in remission
Schizophrenia and other psychosis	297	Diagnosis	ICD-9-CM	Delusional disorders
Schizophrenia and other psychosis	297.0	Diagnosis	ICD-9-CM	Paranoid state, simple
Schizophrenia and other psychosis	297.1	Diagnosis	ICD-9-CM	Delusional disorder
Schizophrenia and other psychosis	297.2	Diagnosis	ICD-9-CM	Paraphrenia
Schizophrenia and other psychosis	297.3	Diagnosis	ICD-9-CM	Shared psychotic disorder
Schizophrenia and other psychosis	297.8	Diagnosis	ICD-9-CM	Other specified paranoid states
Schizophrenia and other psychosis	297.9	Diagnosis	ICD-9-CM	Unspecified paranoid state
Schizophrenia and other psychosis	298	Diagnosis	ICD-9-CM	Other nonorganic psychoses
Schizophrenia and other psychosis	298.0	Diagnosis	ICD-9-CM	Depressive type psychosis
Schizophrenia and other psychosis	298.1	Diagnosis	ICD-9-CM	Excitatory type psychosis
Schizophrenia and other psychosis	298.2	Diagnosis	ICD-9-CM	Reactive confusion
Schizophrenia and other psychosis	298.3	Diagnosis	ICD-9-CM	Acute paranoid reaction
Schizophrenia and other psychosis	298.4	Diagnosis	ICD-9-CM	Psychogenic paranoid psychosis
Schizophrenia and other psychosis	298.8	Diagnosis	ICD-9-CM	Other and unspecified reactive psychosis
Schizophrenia and other psychosis	298.9	Diagnosis	ICD-9-CM	Unspecified psychosis
Schizophrenia and other psychosis	V11.0	Diagnosis	ICD-9-CM	Personal history of schizophrenia
Substance abuse	94.46	Procedure	ICD-9-CM	Alcoholism counseling
Substance abuse	94.53	Procedure	ICD-9-CM	Referral for alcoholism rehabilitation
Substance abuse	94.6	Procedure	ICD-9-CM	Alcohol and drug rehabilitation and detoxification
Substance abuse	94.61	Procedure	ICD-9-CM	Alcohol rehabilitation
Substance abuse	94.62	Procedure	ICD-9-CM	Alcohol detoxification
Substance abuse	94.63	Procedure	ICD-9-CM	Alcohol rehabilitation and detoxification

Substance abuse	94.67	Procedure	ICD-9-CM	Combined alcohol and drug rehabilitation
Substance abuse	94.68	Procedure	ICD-9-CM	Combined alcohol and drug detoxification
Substance abuse	94.69	Procedure	ICD-9-CM	Combined alcohol and drug rehabilitation and detoxification
Substance abuse	291	Diagnosis	ICD-9-CM	Alcohol-induced mental disorders
Substance abuse	291.0	Diagnosis	ICD-9-CM	Alcohol withdrawal delirium
Substance abuse	291.1	Diagnosis	ICD-9-CM	Alcohol-induced persisting amnesic disorder
Substance abuse	291.2	Diagnosis	ICD-9-CM	Alcohol-induced persisting dementia
Substance abuse	291.3	Diagnosis	ICD-9-CM	Alcohol-induced psychotic disorder with hallucinations
Substance abuse	291.4	Diagnosis	ICD-9-CM	Idiosyncratic alcohol intoxication
Substance abuse	291.5	Diagnosis	ICD-9-CM	Alcohol-induced psychotic disorder with delusions
Substance abuse	291.8	Diagnosis	ICD-9-CM	Other specified alcohol-induced mental disorders
Substance abuse	291.81	Diagnosis	ICD-9-CM	Alcohol withdrawal
Substance abuse	291.82	Diagnosis	ICD-9-CM	Alcohol induced sleep disorders
Substance abuse	291.89	Diagnosis	ICD-9-CM	Other specified alcohol-induced mental disorders
Substance abuse	291.9	Diagnosis	ICD-9-CM	Unspecified alcohol-induced mental disorders
Substance abuse	292	Diagnosis	ICD-9-CM	Drug-induced mental disorders
Substance abuse	292.0	Diagnosis	ICD-9-CM	Drug withdrawal
Substance abuse	292.1	Diagnosis	ICD-9-CM	Drug-induced psychotic disorder
Substance abuse	292.11	Diagnosis	ICD-9-CM	Drug-induced psychotic disorder with delusions
Substance abuse	292.12	Diagnosis	ICD-9-CM	Drug-induced psychotic disorder with hallucinations
Substance abuse	292.2	Diagnosis	ICD-9-CM	Pathological drug intoxication
Substance abuse	292.8	Diagnosis	ICD-9-CM	Other specified drug-induced mental disorders
Substance abuse	292.81	Diagnosis	ICD-9-CM	Drug-induced delirium
Substance abuse	292.82	Diagnosis	ICD-9-CM	Drug-induced persisting dementia
Substance abuse	292.83	Diagnosis	ICD-9-CM	Drug-induced persisting amnesic disorder
Substance abuse	292.84	Diagnosis	ICD-9-CM	Drug-induced mood disorder
Substance abuse	292.85	Diagnosis	ICD-9-CM	Drug induced sleep disorders
Substance abuse	292.89	Diagnosis	ICD-9-CM	Other specified drug-induced mental disorder
Substance abuse	292.9	Diagnosis	ICD-9-CM	Unspecified drug-induced mental disorder
Substance abuse	303	Diagnosis	ICD-9-CM	Alcohol dependence syndrome
Substance abuse	303.00	Diagnosis	ICD-9-CM	Acute alcoholic intoxication, unspecified
Substance abuse	303.0	Diagnosis	ICD-9-CM	Acute alcoholic intoxication
Substance abuse	303.01	Diagnosis	ICD-9-CM	Acute alcoholic intoxication, continuous
Substance abuse	303.02	Diagnosis	ICD-9-CM	Acute alcoholic intoxication, episodic
Substance abuse	303.03	Diagnosis	ICD-9-CM	Acute alcoholic intoxication, in remission
Substance abuse	303.9	Diagnosis	ICD-9-CM	Other and unspecified alcohol dependence
Substance abuse	303.90	Diagnosis	ICD-9-CM	Other and unspecified alcohol dependence, unspecified
Substance abuse	303.91	Diagnosis	ICD-9-CM	Other and unspecified alcohol dependence, continuous
Substance abuse	303.92	Diagnosis	ICD-9-CM	Other and unspecified alcohol dependence, episodic
Substance abuse	303.93	Diagnosis	ICD-9-CM	Other and unspecified alcohol dependence, in remission
Substance abuse	304.0	Diagnosis	ICD-9-CM	Opioid type dependence
Substance abuse	304	Diagnosis	ICD-9-CM	Drug dependence
Substance abuse	304.00	Diagnosis	ICD-9-CM	Opioid type dependence, unspecified
Substance abuse	304.01	Diagnosis	ICD-9-CM	Opioid type dependence, continuous
Substance abuse	304.02	Diagnosis	ICD-9-CM	Opioid type dependence, episodic
Substance abuse	304.03	Diagnosis	ICD-9-CM	Opioid type dependence, in remission
Substance abuse	304.1	Diagnosis	ICD-9-CM	Sedative, hypnotic or anxiolytic dependence
Substance abuse	304.10	Diagnosis	ICD-9-CM	Sedative, hypnotic or anxiolytic dependence, unspecified
Substance abuse	304.11	Diagnosis	ICD-9-CM	Sedative, hypnotic or anxiolytic dependence, continuous
Substance abuse	304.12	Diagnosis	ICD-9-CM	Sedative, hypnotic or anxiolytic dependence, episodic
Substance abuse	304.13	Diagnosis	ICD-9-CM	Sedative, hypnotic or anxiolytic dependence, in remission
Substance abuse	304.2	Diagnosis	ICD-9-CM	Cocaine dependence
Substance abuse	304.20	Diagnosis	ICD-9-CM	Cocaine dependence, unspecified
Substance abuse	304.21	Diagnosis	ICD-9-CM	Cocaine dependence, continuous
Substance abuse	304.22	Diagnosis	ICD-9-CM	Cocaine dependence, episodic
Substance abuse	304.23	Diagnosis	ICD-9-CM	Cocaine dependence, in remission
Substance abuse	304.30	Diagnosis	ICD-9-CM	Cannabis dependence, unspecified
Substance abuse	304.3	Diagnosis	ICD-9-CM	Cannabis dependence
Substance abuse	304.31	Diagnosis	ICD-9-CM	Cannabis dependence, continuous

Substance abuse	304.32	Diagnosis	ICD-9-CM	Cannabis dependence, episodic
Substance abuse	304.33	Diagnosis	ICD-9-CM	Cannabis dependence, in remission
Substance abuse	304.4	Diagnosis	ICD-9-CM	Amphetamine and other psychostimulant dependence
Substance abuse	304.40	Diagnosis	ICD-9-CM	Amphetamine and other psychostimulant dependence, unspecified
Substance abuse	304.41	Diagnosis	ICD-9-CM	Amphetamine and other psychostimulant dependence, continuous
Substance abuse	304.42	Diagnosis	ICD-9-CM	Amphetamine and other psychostimulant dependence, episodic
Substance abuse	304.43	Diagnosis	ICD-9-CM	Amphetamine and other psychostimulant dependence, in remission
Substance abuse	304.50	Diagnosis	ICD-9-CM	Hallucinogen dependence, unspecified
Substance abuse	304.5	Diagnosis	ICD-9-CM	Hallucinogen dependence
Substance abuse	304.51	Diagnosis	ICD-9-CM	Hallucinogen dependence, continuous
Substance abuse	304.52	Diagnosis	ICD-9-CM	Hallucinogen dependence, episodic
Substance abuse	304.53	Diagnosis	ICD-9-CM	Hallucinogen dependence, in remission
Substance abuse	304.60	Diagnosis	ICD-9-CM	Other specified drug dependence, unspecified
Substance abuse	304.6	Diagnosis	ICD-9-CM	Other specified drug dependence
Substance abuse	304.61	Diagnosis	ICD-9-CM	Other specified drug dependence, continuous
Substance abuse	304.62	Diagnosis	ICD-9-CM	Other specified drug dependence, episodic
Substance abuse	304.63	Diagnosis	ICD-9-CM	Other specified drug dependence, in remission
Substance abuse	304.7	Diagnosis	ICD-9-CM	Combinations of opioid type drug with any other drug dependence
Substance abuse	304.70	Diagnosis	ICD-9-CM	Combinations of opioid type drug with any other drug dependence, unspecified
Substance abuse	304.71	Diagnosis	ICD-9-CM	Combinations of opioid type drug with any other drug dependence, continuous
Substance abuse	304.72	Diagnosis	ICD-9-CM	Combinations of opioid type drug with any other drug dependence, episodic
Substance abuse	304.73	Diagnosis	ICD-9-CM	Combinations of opioid type drug with any other drug dependence, in remission
Substance abuse	304.80	Diagnosis	ICD-9-CM	Combinations of drug dependence excluding opioid type drug, unspecified
Substance abuse	304.8	Diagnosis	ICD-9-CM	Combinations of drug dependence excluding opioid type drug
Substance abuse	304.81	Diagnosis	ICD-9-CM	Combinations of drug dependence excluding opioid type drug, continuous
Substance abuse	304.82	Diagnosis	ICD-9-CM	Combinations of drug dependence excluding opioid type drug, episodic
Substance abuse	304.83	Diagnosis	ICD-9-CM	Combinations of drug dependence excluding opioid type drug, in remission
Substance abuse	304.90	Diagnosis	ICD-9-CM	Unspecified drug dependence, unspecified
Substance abuse	304.9	Diagnosis	ICD-9-CM	Unspecified drug dependence
Substance abuse	304.91	Diagnosis	ICD-9-CM	Unspecified drug dependence, continuous
Substance abuse	304.92	Diagnosis	ICD-9-CM	Unspecified drug dependence, episodic
Substance abuse	304.93	Diagnosis	ICD-9-CM	Unspecified drug dependence, in remission
Substance abuse	305.00	Diagnosis	ICD-9-CM	Nondependent alcohol abuse, unspecified
Substance abuse	305.0	Diagnosis	ICD-9-CM	Nondependent alcohol abuse
Substance abuse	305	Diagnosis	ICD-9-CM	Nondependent abuse of drugs
Substance abuse	305.01	Diagnosis	ICD-9-CM	Nondependent alcohol abuse, continuous
Substance abuse	305.02	Diagnosis	ICD-9-CM	Nondependent alcohol abuse, episodic
Substance abuse	305.03	Diagnosis	ICD-9-CM	Nondependent alcohol abuse, in remission
Substance abuse	305.2	Diagnosis	ICD-9-CM	Nondependent cannabis abuse
Substance abuse	305.20	Diagnosis	ICD-9-CM	Nondependent cannabis abuse, unspecified
Substance abuse	305.21	Diagnosis	ICD-9-CM	Nondependent cannabis abuse, continuous
Substance abuse	305.22	Diagnosis	ICD-9-CM	Nondependent cannabis abuse, episodic
Substance abuse	305.23	Diagnosis	ICD-9-CM	Nondependent cannabis abuse, in remission
Substance abuse	305.30	Diagnosis	ICD-9-CM	Nondependent hallucinogen abuse, unspecified
Substance abuse	305.3	Diagnosis	ICD-9-CM	Nondependent hallucinogen abuse
Substance abuse	305.31	Diagnosis	ICD-9-CM	Nondependent hallucinogen abuse, continuous
Substance abuse	305.32	Diagnosis	ICD-9-CM	Nondependent hallucinogen abuse, episodic
Substance abuse	305.33	Diagnosis	ICD-9-CM	Nondependent hallucinogen abuse, in remission
Substance abuse	305.4	Diagnosis	ICD-9-CM	Nondependent sedative, hypnotic or anxiolytic abuse
Substance abuse	305.40	Diagnosis	ICD-9-CM	Nondependent sedative, hypnotic or anxiolytic abuse, unspecified
Substance abuse	305.41	Diagnosis	ICD-9-CM	Nondependent sedative hypnotic or anxiolytic abuse, continuous
Substance abuse	305.42	Diagnosis	ICD-9-CM	Nondependent sedative, hypnotic or anxiolytic abuse, episodic
Substance abuse	305.43	Diagnosis	ICD-9-CM	Nondependent sedative, hypnotic or anxiolytic abuse, in remission
Substance abuse	305.5	Diagnosis	ICD-9-CM	Nondependent opioid abuse
Substance abuse	305.50	Diagnosis	ICD-9-CM	Nondependent opioid abuse, unspecified
Substance abuse	305.51	Diagnosis	ICD-9-CM	Nondependent opioid abuse, continuous
Substance abuse	305.52	Diagnosis	ICD-9-CM	Nondependent opioid abuse, episodic
Substance abuse	305.53	Diagnosis	ICD-9-CM	Nondependent opioid abuse, in remission
Substance abuse	305.6	Diagnosis	ICD-9-CM	Nondependent cocaine abuse

Substance abuse	305.60	Diagnosis	ICD-9-CM	Nondependent cocaine abuse, unspecified
Substance abuse	305.61	Diagnosis	ICD-9-CM	Nondependent cocaine abuse, continuous
Substance abuse	305.62	Diagnosis	ICD-9-CM	Nondependent cocaine abuse, episodic
Substance abuse	305.63	Diagnosis	ICD-9-CM	Nondependent cocaine abuse, in remission
Substance abuse	305.7	Diagnosis	ICD-9-CM	Nondependent amphetamine or related acting sympathomimetic abuse
Substance abuse	305.70	Diagnosis	ICD-9-CM	Nondependent amphetamine or related acting sympathomimetic abuse, unspecified
Substance abuse	305.71	Diagnosis	ICD-9-CM	Nondependent amphetamine or related acting sympathomimetic abuse, continuous
Substance abuse	305.72	Diagnosis	ICD-9-CM	Nondependent amphetamine or related acting sympathomimetic abuse, episodic
Substance abuse	305.73	Diagnosis	ICD-9-CM	Nondependent amphetamine or related acting sympathomimetic abuse, in remission
Substance abuse	305.80	Diagnosis	ICD-9-CM	Nondependent antidepressant type abuse, unspecified
Substance abuse	305.8	Diagnosis	ICD-9-CM	Nondependent antidepressant type abuse
Substance abuse	305.81	Diagnosis	ICD-9-CM	Nondependent antidepressant type abuse, continuous
Substance abuse	305.82	Diagnosis	ICD-9-CM	Nondependent antidepressant type abuse, episodic
Substance abuse	305.83	Diagnosis	ICD-9-CM	Nondependent antidepressant type abuse, in remission
Substance abuse	305.9	Diagnosis	ICD-9-CM	Other, mixed, or unspecified nondependent drug abuse
Substance abuse	305.90	Diagnosis	ICD-9-CM	Other, mixed, or unspecified nondependent drug abuse, unspecified
Substance abuse	305.91	Diagnosis	ICD-9-CM	Other, mixed, or unspecified nondependent drug abuse, continuous
Substance abuse	305.92	Diagnosis	ICD-9-CM	Other, mixed, or unspecified nondependent drug abuse, episodic
Substance abuse	305.93	Diagnosis	ICD-9-CM	Other, mixed, or unspecified nondependent drug abuse, in remission
Substance abuse	571.0	Diagnosis	ICD-9-CM	Alcoholic fatty liver
Substance abuse	571.1	Diagnosis	ICD-9-CM	Acute alcoholic hepatitis
Substance abuse	571.2	Diagnosis	ICD-9-CM	Alcoholic cirrhosis of liver
Substance abuse	571.3	Diagnosis	ICD-9-CM	Unspecified alcoholic liver damage
Substance abuse	648.3	Diagnosis	ICD-9-CM	Maternal drug dependence complicating pregnancy, childbirth, or the puerperium
Substance abuse	4320F	Procedure	CPT Category II	Patient counseled regarding psychosocial and pharmacologic treatment options for alcohol dependence (SUD)
Substance abuse	H0005	Procedure	HCPCS	Alcohol and/or drug services; group counseling by a clinician
Substance abuse	H0007	Procedure	HCPCS	Alcohol and/or drug services; crisis intervention (outpatient)
Substance abuse	H0008	Procedure	HCPCS	Alcohol and/or drug services; subacute detoxification (hospital inpatient)
Substance abuse	H0010	Procedure	HCPCS	Alcohol and/or drug services; subacute detoxification (residential addiction program inpatient)
Substance abuse	H0011	Procedure	HCPCS	Alcohol and/or drug services; acute detoxification (residential addiction program inpatient)
Substance abuse	H0012	Procedure	HCPCS	Alcohol and/or drug services; subacute detoxification (residential addiction program outpatient)
Substance abuse	H0013	Procedure	HCPCS	Alcohol and/or drug services; acute detoxification (residential addiction program outpatient)
Substance abuse	H0014	Procedure	HCPCS	Alcohol and/or drug services; ambulatory detoxification
Substance abuse	H0015	Procedure	HCPCS	Alcohol and/or drug services; intensive outpatient (treatment program that operates at least 3 hours/day and at least 3 days/week and is based on an individualized treatment plan), including assessment, counseling; crisis intervention, and activity therapies or education
Substance abuse	H0020	Procedure	HCPCS	Alcohol and/or drug services; methadone administration and/or service (provision of the drug by a licensed program)
Substance abuse	H0022	Procedure	HCPCS	Alcohol and/or drug intervention service (planned facilitation)
Substance abuse	H2035	Procedure	HCPCS	Alcohol and/or other drug treatment program, per hour
Substance abuse	H2036	Procedure	HCPCS	Alcohol and/or other drug treatment program, per diem
Substance abuse	T1006	Procedure	HCPCS	Alcohol and/or substance abuse services, family/couple counseling
Substance abuse	T1007	Procedure	HCPCS	Alcohol and/or substance abuse services, treatment plan development and/or modification
Substance abuse	T1008	Procedure	HCPCS	Day treatment for individual alcohol and/or substance abuse services
Substance abuse	T1010	Procedure	HCPCS	Meals for individuals receiving alcohol and/or substance abuse services (when meals not included in the program)
Substance abuse	T1012	Procedure	HCPCS	Alcohol and/or substance abuse services, skills development
Substance abuse	V65.42	Diagnosis	ICD-9-CM	Counseling on substance use and abuse
Depression	296.2	Diagnosis	ICD-9-CM	Major depressive disorder, single episode
Depression	296.20	Diagnosis	ICD-9-CM	Major depressive disorder, single episode, unspecified
Depression	296.21	Diagnosis	ICD-9-CM	Major depressive disorder, single episode, mild
Depression	296.22	Diagnosis	ICD-9-CM	Major depressive disorder, single episode, moderate
Depression	296.23	Diagnosis	ICD-9-CM	Major depressive disorder, single episode, severe, without mention of psychotic behavior
Depression	296.24	Diagnosis	ICD-9-CM	Major depressive disorder, single episode, severe, specified as with psychotic behavior
Depression	296.25	Diagnosis	ICD-9-CM	Major depressive disorder, single episode, in partial or unspecified remission
Depression	296.26	Diagnosis	ICD-9-CM	Major depressive disorder, single episode in full remission
Depression	296.3	Diagnosis	ICD-9-CM	Major depressive disorder, recurrent episode
Depression	296.30	Diagnosis	ICD-9-CM	Major depressive disorder, recurrent episode, unspecified
Depression	296.31	Diagnosis	ICD-9-CM	Major depressive disorder, recurrent episode, mild
Depression	296.32	Diagnosis	ICD-9-CM	Major depressive disorder, recurrent episode, moderate
Depression	296.33	Diagnosis	ICD-9-CM	Major depressive disorder, recurrent episode, severe, without mention of psychotic behavior
Depression	296.34	Diagnosis	ICD-9-CM	Major depressive disorder, recurrent episode, severe, specified as with psychotic behavior

Depression	296.35	Diagnosis	ICD-9-CM	Major depressive disorder, recurrent episode, in partial or unspecified remission
Depression	296.36	Diagnosis	ICD-9-CM	Major depressive disorder, recurrent episode, in full remission
Depression	300.4	Diagnosis	ICD-9-CM	Dysthymic disorder
Depression	309.1	Diagnosis	ICD-9-CM	Prolonged depressive reaction as adjustment reaction
Depression	311	Diagnosis	ICD-9-CM	Depressive disorder, not elsewhere classified
PTSD	309.81	Diagnosis	ICD-9-CM	Posttraumatic stress disorder
Anticoagulant (oral)	964.2	Diagnosis	ICD-9-CM	Poisoning by anticoagulants
Anticoagulant (oral)	E934.2	Diagnosis	ICD-9-CM	Anticoagulants causing adverse effect in therapeutic use
Anticoagulant (oral)	V58.61	Diagnosis	ICD-9-CM	Long-term (current) use of anticoagulants
Anticoagulant (oral)	99363	Procedure	CPT-4	Anticoagulant management for an outpatient taking warfarin, physician review and interpretation of International Normalized Ratio (INR) testing, patient instructions, dosage adjustment (as needed), and ordering of additional tests; initial 90 days of therapy (must include a minimum of 8 INR measurements)
Anticoagulant (oral)	99364	Procedure	CPT-4	Anticoagulant management for an outpatient taking warfarin, physician review and interpretation of International Normalized Ratio (INR) testing, patient instructions, dosage adjustment (as needed), and ordering of additional tests; each subsequent 90 days of therapy (must include a minimum of 3 INR measurements)
Anticoagulant (oral)	4075F	Procedure	CPT Category II	Anticoagulant therapy prescribed at discharge (STR)
Anticoagulant (oral)	G8225	Procedure	HCPCS	Patient documented to have been prescribed an anticoagulant at discharge
Anticoagulant (oral)	G8967	Procedure	HCPCS	Warfarin or another oral anticoagulant that is FDA approved prescribed
Anticoagulant (non-oral)	289.84	Diagnosis	ICD-9-CM	Heparin-induced thrombocytopenia [HIT]
Anticoagulant (non-oral)	99.19	Procedure	ICD-9-CM	Injection of anticoagulant
Anticoagulant (non-oral)	85525	Procedure	CPT-4	Heparin neutralization
Anticoagulant (non-oral)	99557	Procedure	CPT-4	Home infusion of continuous anticoagulant therapy (eg, heparin), per visit
Anticoagulant (non-oral)	85520	Procedure	HCPCS	Heparin assay
Anticoagulant (non-oral)	J1644	Procedure	HCPCS	Injection, Heparin sodium, per 1000 units
Anticoagulant (non-oral)	S9336	Procedure	HCPCS	Home infusion therapy, continuous anticoagulant infusion therapy (e.g., Heparin), administrative services, professional pharmacy services, care coordination and all necessary supplies and equipment (drugs and nursing visits coded separately), per diem
Anticoagulant (non-oral)	S9372	Procedure	HCPCS	Home therapy; intermittent anticoagulant injection therapy (e.g., Heparin); administrative services, professional pharmacy services, care coordination, and all necessary supplies and equipment (drugs and nursing visits coded separately), per diem (do not use this code for flushing of infusion devices with Heparin to maintain patency)
Atrial fibrillation/flutter	427.31	Diagnosis	ICD-9-CM	Atrial fibrillation
Atrial fibrillation/flutter	427.3	Diagnosis	ICD-9-CM	Atrial fibrillation and flutter
Atrial fibrillation/flutter	427.32	Diagnosis	ICD-9-CM	Atrial flutter
Coagulation defects	286	Diagnosis	ICD-9-CM	Coagulation defects
Coagulation defects	286*	Diagnosis	ICD-9-CM	Coagulation defects
Coagulation defects	286**	Diagnosis	ICD-9-CM	Coagulation defects
AMI	410.0	Diagnosis	ICD-9-CM	Acute myocardial infarction of anterolateral wall
AMI	410	Diagnosis	ICD-9-CM	Acute myocardial infarction
AMI	410.00	Diagnosis	ICD-9-CM	Acute myocardial infarction of anterolateral wall, episode of care unspecified
AMI	410.01	Diagnosis	ICD-9-CM	Acute myocardial infarction of anterolateral wall, initial episode of care
AMI	410.02	Diagnosis	ICD-9-CM	Acute myocardial infarction of anterolateral wall, subsequent episode of care
AMI	410.1	Diagnosis	ICD-9-CM	Acute myocardial infarction of other anterior wall
AMI	410.10	Diagnosis	ICD-9-CM	Acute myocardial infarction of other anterior wall, episode of care unspecified
AMI	410.11	Diagnosis	ICD-9-CM	Acute myocardial infarction of other anterior wall, initial episode of care
AMI	410.12	Diagnosis	ICD-9-CM	Acute myocardial infarction of other anterior wall, subsequent episode of care
AMI	410.2	Diagnosis	ICD-9-CM	Acute myocardial infarction of inferolateral wall
AMI	410.20	Diagnosis	ICD-9-CM	Acute myocardial infarction of inferolateral wall, episode of care unspecified
AMI	410.21	Diagnosis	ICD-9-CM	Acute myocardial infarction of inferolateral wall, initial episode of care
AMI	410.22	Diagnosis	ICD-9-CM	Acute myocardial infarction of inferolateral wall, subsequent episode of care
AMI	410.30	Diagnosis	ICD-9-CM	Acute myocardial infarction of inferoposterior wall, episode of care unspecified
AMI	410.3	Diagnosis	ICD-9-CM	Acute myocardial infarction of inferoposterior wall
AMI	410.31	Diagnosis	ICD-9-CM	Acute myocardial infarction of inferoposterior wall, initial episode of care
AMI	410.32	Diagnosis	ICD-9-CM	Acute myocardial infarction of inferoposterior wall, subsequent episode of care
AMI	410.40	Diagnosis	ICD-9-CM	Acute myocardial infarction of other inferior wall, episode of care unspecified
AMI	410.4	Diagnosis	ICD-9-CM	Acute myocardial infarction of other inferior wall
AMI	410.41	Diagnosis	ICD-9-CM	Acute myocardial infarction of other inferior wall, initial episode of care
AMI	410.42	Diagnosis	ICD-9-CM	Acute myocardial infarction of other inferior wall, subsequent episode of care
AMI	410.5	Diagnosis	ICD-9-CM	Acute myocardial infarction of other lateral wall
AMI	410.50	Diagnosis	ICD-9-CM	Acute myocardial infarction of other lateral wall, episode of care unspecified
AMI	410.51	Diagnosis	ICD-9-CM	Acute myocardial infarction of other lateral wall, initial episode of care

AMI	410.52	Diagnosis	ICD-9-CM	Acute myocardial infarction of other lateral wall, subsequent episode of care
AMI	410.60	Diagnosis	ICD-9-CM	Acute myocardial infarction, true posterior wall infarction, episode of care unspecified
AMI	410.6	Diagnosis	ICD-9-CM	Acute myocardial infarction, true posterior wall infarction
AMI	410.61	Diagnosis	ICD-9-CM	Acute myocardial infarction, true posterior wall infarction, initial episode of care
AMI	410.62	Diagnosis	ICD-9-CM	Acute myocardial infarction, true posterior wall infarction, subsequent episode of care
AMI	410.7	Diagnosis	ICD-9-CM	Acute myocardial infarction, subendocardial infarction
AMI	410.70	Diagnosis	ICD-9-CM	Acute myocardial infarction, subendocardial infarction, episode of care unspecified
AMI	410.71	Diagnosis	ICD-9-CM	Acute myocardial infarction, subendocardial infarction, initial episode of care
AMI	410.72	Diagnosis	ICD-9-CM	Acute myocardial infarction, subendocardial infarction, subsequent episode of care
AMI	410.8	Diagnosis	ICD-9-CM	Acute myocardial infarction of other specified sites
AMI	410.80	Diagnosis	ICD-9-CM	Acute myocardial infarction of other specified sites, episode of care unspecified
AMI	410.81	Diagnosis	ICD-9-CM	Acute myocardial infarction of other specified sites, initial episode of care
AMI	410.82	Diagnosis	ICD-9-CM	Acute myocardial infarction of other specified sites, subsequent episode of care
AMI	410.9	Diagnosis	ICD-9-CM	Acute myocardial infarction, unspecified site
AMI	410.90	Diagnosis	ICD-9-CM	Acute myocardial infarction, unspecified site, episode of care unspecified
AMI	410.91	Diagnosis	ICD-9-CM	Acute myocardial infarction, unspecified site, initial episode of care
AMI	410.92	Diagnosis	ICD-9-CM	Acute myocardial infarction, unspecified site, subsequent episode of care
AMI	411	Diagnosis	ICD-9-CM	Other acute and subacute forms of ischemic heart disease
AMI	411.0	Diagnosis	ICD-9-CM	Postmyocardial infarction syndrome
AMI	411.1	Diagnosis	ICD-9-CM	Intermediate coronary syndrome
AMI	411.8	Diagnosis	ICD-9-CM	Other acute and subacute forms of ischemic heart disease
AMI	411.81	Diagnosis	ICD-9-CM	Acute coronary occlusion without myocardial infarction
AMI	411.89	Diagnosis	ICD-9-CM	Other acute and subacute form of ischemic heart disease
AMI	412	Diagnosis	ICD-9-CM	Old myocardial infarction
Peripheral vascular disease	443.9*	Diagnosis	ICD-9-CM	UNSPECIFIED PERIPHERAL VASCULAR DISEASE
Peripheral vascular disease	440	Diagnosis	ICD-9-CM	Atherosclerosis
Peripheral vascular disease	440*	Diagnosis	ICD-9-CM	Atherosclerosis
Peripheral vascular disease	440**	Diagnosis	ICD-9-CM	Atherosclerosis
Peripheral vascular disease	441.2	Diagnosis	ICD-9-CM	Thoracic aneurysm without mention of rupture
Peripheral vascular disease	441.4	Diagnosis	ICD-9-CM	Atherosclerosis
Peripheral vascular disease	441.7	Diagnosis	ICD-9-CM	Thoracoabdominal aneurysm, without mention of rupture
Peripheral vascular disease	441.9	Diagnosis	ICD-9-CM	Aortic aneurysm of unspecified site without mention of rupture
Peripheral vascular disease	443.1	Diagnosis	ICD-9-CM	Thromboangiitis obliterans [Buerger's disease]
Peripheral vascular disease	443.2	Diagnosis	ICD-9-CM	Other arterial dissection
Peripheral vascular disease	443.8	Diagnosis	ICD-9-CM	Other specified peripheral vascular diseases
Peripheral vascular disease	443.9	Diagnosis	ICD-9-CM	Peripheral vascular disease, unspecified
Peripheral vascular disease	447.1	Diagnosis	ICD-9-CM	Stricture of artery
Peripheral vascular disease	557.1	Diagnosis	ICD-9-CM	Chronic vascular insufficiency of intestine
Peripheral vascular disease	557.9	Diagnosis	ICD-9-CM	Unspecified vascular insufficiency of intestine
Peripheral vascular disease	V43.4	Diagnosis	ICD-9-CM	Blood vessel replaced by other means
Peripheral vascular disease	441.2*	Diagnosis	ICD-9-CM	Thoracic aneurysm without mention of rupture
Peripheral vascular disease	441.4*	Diagnosis	ICD-9-CM	Atherosclerosis
Peripheral vascular disease	441.7*	Diagnosis	ICD-9-CM	Thoracoabdominal aneurysm, without mention of rupture
Peripheral vascular disease	441.9*	Diagnosis	ICD-9-CM	Aortic aneurysm of unspecified site without mention of rupture
Peripheral vascular disease	443.1*	Diagnosis	ICD-9-CM	Thromboangiitis obliterans [Buerger's disease]
Peripheral vascular disease	443.2*	Diagnosis	ICD-9-CM	Other arterial dissection
Peripheral vascular disease	443.8*	Diagnosis	ICD-9-CM	Other specified peripheral vascular diseases
Peripheral vascular disease	447.1*	Diagnosis	ICD-9-CM	Stricture of artery
Peripheral vascular disease	557.1*	Diagnosis	ICD-9-CM	Chronic vascular insufficiency of intestine
Peripheral vascular disease	557.9*	Diagnosis	ICD-9-CM	Unspecified vascular insufficiency of intestine
Peripheral vascular disease	V43.4*	Diagnosis	ICD-9-CM	Blood vessel replaced by other means
Peripheral vascular disease	38.18	Procedure	ICD-9-CM	ENDARTERECTOMY OF LOWER LIMB ARTERIES
Peripheral vascular disease	35454	Procedure	CPT-4	Transluminal balloon angioplasty, open; iliac
Peripheral vascular disease	35456	Procedure	CPT-4	Transluminal balloon angioplasty, open; femoral-popliteal
Peripheral vascular disease	35459	Procedure	CPT-4	Transluminal balloon angioplasty, open; tibioperoneal trunk and branches
Peripheral vascular disease	35470	Procedure	CPT-4	Transluminal balloon angioplasty, percutaneous; tibioperoneal trunk or branches, each vessel
Peripheral vascular disease	35473	Procedure	CPT-4	Transluminal balloon angioplasty, percutaneous; iliac
Peripheral vascular disease	35474	Procedure	CPT-4	Transluminal balloon angioplasty, percutaneous; femoral-popliteal
Peripheral vascular disease	35482	Procedure	CPT-4	Transluminal peripheral atherectomy, open; iliac

Peripheral vascular disease	35483	Procedure	CPT-4	Transluminal peripheral atherectomy, open; femoral-popliteal
Peripheral vascular disease	35492	Procedure	CPT-4	Transluminal peripheral atherectomy, percutaneous; iliac
Peripheral vascular disease	35493	Procedure	CPT-4	Transluminal peripheral atherectomy, percutaneous; femoral-popliteal
Peripheral vascular disease	35495	Procedure	CPT-4	Transluminal peripheral atherectomy, percutaneous; tibioperoneal trunk and branches
Peripheral vascular disease	37207	Procedure	CPT-4	Transcatheter placement of an intravascular stent(s) (except coronary, carotid, vertebral, iliac and lower extremity arteries), open; initial vessel
Peripheral vascular disease	37208	Procedure	CPT-4	Transcatheter placement of an intravascular stent(s) (except coronary, carotid, vertebral, iliac and lower extremity arteries), open; each additional vessel (List separately in addition to code for primary procedure)
Peripheral vascular disease	37220	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, iliac artery, unilateral, initial vessel; with transluminal angioplasty
Peripheral vascular disease	37221	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, iliac artery, unilateral, initial vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed
Peripheral vascular disease	37222	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, iliac artery, each additional ipsilateral iliac vessel; with transluminal angioplasty (List separately in addition to code for primary procedure)
Peripheral vascular disease	37223	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, iliac artery, each additional ipsilateral iliac vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)
Peripheral vascular disease	37224	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(s), unilateral; with transluminal angioplasty
Peripheral vascular disease	37225	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(s), unilateral; with atherectomy, includes angioplasty within the same vessel, when performed
Peripheral vascular disease	37226	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(s), unilateral; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed
Peripheral vascular disease	37227	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(s), unilateral; with transluminal stent placement(s) and atherectomy, includes angioplasty within the same vessel, when performed
Peripheral vascular disease	37228	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, tibial, peroneal artery, unilateral, initial vessel; with transluminal angioplasty
Peripheral vascular disease	37229	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, tibial, peroneal artery, unilateral, initial vessel; with atherectomy, includes angioplasty within the same vessel, when performed
Peripheral vascular disease	37230	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, tibial, peroneal artery, unilateral, initial vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed
Peripheral vascular disease	37231	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, tibial, peroneal artery, unilateral, initial vessel; with transluminal stent placement(s) and atherectomy, includes angioplasty within the same vessel, when performed
Peripheral vascular disease	37232	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, each additional vessel; with transluminal angioplasty (List separately in addition to code for primary procedure)
Peripheral vascular disease	37233	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, each additional vessel; with atherectomy, includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)
Peripheral vascular disease	37234	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, each additional vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)
Peripheral vascular disease	37235	Procedure	CPT-4	Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, each additional vessel; with transluminal stent placement(s) and atherectomy, includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)
Peripheral vascular disease	39.25	Procedure	ICD-9-CM	AORTA-ILIAC-FEMORAL BYPASS
Peripheral vascular disease	39.29	Procedure	ICD-9-CM	OTHER VASCULAR SHUNT OR BYPASS
Peripheral vascular disease	35351	Procedure	CPT-4	Thromboendarterectomy, including patch graft, if performed; iliac
Peripheral vascular disease	35355	Procedure	CPT-4	Thromboendarterectomy, including patch graft, if performed; iliofemoral
Peripheral vascular disease	35361	Procedure	CPT-4	Thromboendarterectomy, including patch graft, if performed; combined aortoiliac
Peripheral vascular disease	35363	Procedure	CPT-4	Thromboendarterectomy, including patch graft, if performed; combined aortoiliofemoral
Peripheral vascular disease	35371	Procedure	CPT-4	Thromboendarterectomy, including patch graft, if performed; common femoral
Peripheral vascular disease	35372	Procedure	CPT-4	Thromboendarterectomy, including patch graft, if performed; deep (profunda) femoral
Peripheral vascular disease	35521	Procedure	CPT-4	Bypass graft, with vein; axillary-femoral
Peripheral vascular disease	35533	Procedure	CPT-4	Bypass graft, with vein; axillary-femoral-femoral
Peripheral vascular disease	35541	Procedure	CPT-4	Bypass graft, with vein; aortoiliac or bi-iliac
Peripheral vascular disease	35546	Procedure	CPT-4	Bypass graft, with vein; aortofemoral or bifemoral
Peripheral vascular disease	35548	Procedure	CPT-4	Bypass graft, with vein; aortoiliofemoral, unilateral
Peripheral vascular disease	35549	Procedure	CPT-4	Bypass graft, with vein; aortoiliofemoral, bilateral
Peripheral vascular disease	35551	Procedure	CPT-4	Bypass graft, with vein; aortofemoral-popliteal
Peripheral vascular disease	35556	Procedure	CPT-4	Bypass graft, with vein; femoral-popliteal
Peripheral vascular disease	35558	Procedure	CPT-4	Bypass graft, with vein; femoral-femoral
Peripheral vascular disease	35563	Procedure	CPT-4	Bypass graft, with vein; ilioliac
Peripheral vascular disease	35565	Procedure	CPT-4	Bypass graft, with vein; iliofemoral
Peripheral vascular disease	35566	Procedure	CPT-4	Bypass graft, with vein; femoral-anterior tibial, posterior tibial, peroneal artery or other distal vessels
Peripheral vascular disease	35570	Procedure	CPT-4	Bypass graft, with vein; tibial-tibial, peroneal-tibial, or tibial/peroneal trunk-tibial
Peripheral vascular disease	35571	Procedure	CPT-4	Bypass graft, with vein; popliteal-tibial, -peroneal artery or other distal vessels

Peripheral vascular disease	35681	Procedure	CPT-4	Bypass graft; composite, prosthetic and vein (List separately in addition to code for primary procedure)
Peripheral vascular disease	35682	Procedure	CPT-4	Bypass graft; autogenous composite, 2 segments of veins from 2 locations (List separately in addition to code for primary procedure)
Peripheral vascular disease	35683	Procedure	CPT-4	Bypass graft; autogenous composite, 3 or more segments of vein from 2 or more locations (List separately in addition to code for primary procedure)
Peripheral vascular disease	35879	Procedure	CPT-4	Revision, lower extremity arterial bypass, without thrombectomy, open; with vein patch angioplasty
Peripheral vascular disease	84.10	Procedure	ICD-9-CM	LOWER LIMB AMPUTATION NOT OTHERWISE SPECIFIED
Peripheral vascular disease	84.11	Procedure	ICD-9-CM	AMPUTATION OF TOE
Peripheral vascular disease	84.12	Procedure	ICD-9-CM	AMPUTATION THROUGH FOOT
Peripheral vascular disease	84.13	Procedure	ICD-9-CM	DISARTICULATION OF ANKLE
Peripheral vascular disease	84.14	Procedure	ICD-9-CM	AMPUTATION ANKLE THROUGH MALLEOLI TIBIA&FIBULA
Peripheral vascular disease	84.15	Procedure	ICD-9-CM	OTHER AMPUTATION BELOW KNEE
Peripheral vascular disease	84.16	Procedure	ICD-9-CM	DISARTICULATION OF KNEE
Peripheral vascular disease	84.17	Procedure	ICD-9-CM	AMPUTATION ABOVE KNEE
Peripheral vascular disease	27295	Procedure	CPT-4	Disarticulation of hip
Peripheral vascular disease	27590	Procedure	CPT-4	Amputation, thigh, through femur, any level;
Peripheral vascular disease	27591	Procedure	CPT-4	Amputation, thigh, through femur, any level; immediate fitting technique including first cast
Peripheral vascular disease	27592	Procedure	CPT-4	Amputation, thigh, through femur, any level; open, circular (guillotine)
Peripheral vascular disease	27598	Procedure	CPT-4	Disarticulation at knee
Peripheral vascular disease	27880	Procedure	CPT-4	Amputation, leg, through tibia and fibula;
Peripheral vascular disease	27881	Procedure	CPT-4	Amputation, leg, through tibia and fibula; with immediate fitting technique including application of first cast
Peripheral vascular disease	27882	Procedure	CPT-4	Amputation, leg, through tibia and fibula; open, circular (guillotine)
Peripheral vascular disease	27888	Procedure	CPT-4	Amputation, ankle, through malleoli of tibia and fibula (eg, Syme, Pirogoff type procedures), with plastic closure and resection of nerves
Peripheral vascular disease	27889	Procedure	CPT-4	Ankle disarticulation
Peripheral vascular disease	28800	Procedure	CPT-4	Amputation, foot; midtarsal (eg, Chopart type procedure)
Peripheral vascular disease	28805	Procedure	CPT-4	Amputation, foot; transmetatarsal
Peripheral vascular disease	28810	Procedure	CPT-4	Amputation, metatarsal, with toe, single
Peripheral vascular disease	28820	Procedure	CPT-4	Amputation, toe; metatarsophalangeal joint
Peripheral vascular disease	28825	Procedure	CPT-4	Amputation, toe; interphalangeal joint
Other CVD	37.22	Procedure	ICD-9-CM	Left Heart Cardiac Catheterization
Other CVD	37.23	Procedure	ICD-9-CM	Combined Right And Left Heart Cardiac Catheterization
Other CVD	39.28	Procedure	ICD-9-CM	EXTRACRANIAL-INTRACRANIAL VASCULAR BYPASS
Other CVD	33510	Procedure	CPT-4	Coronary artery bypass, vein only; single coronary venous graft
Other CVD	33511	Procedure	CPT-4	Coronary artery bypass, vein only; 2 coronary venous grafts
Other CVD	33512	Procedure	CPT-4	Coronary artery bypass, vein only; 3 coronary venous grafts
Other CVD	33513	Procedure	CPT-4	Coronary artery bypass, vein only; 4 coronary venous grafts
Other CVD	33514	Procedure	CPT-4	Coronary artery bypass, vein only; 5 coronary venous grafts
Other CVD	33516	Procedure	CPT-4	Coronary artery bypass, vein only; 6 or more coronary venous grafts
Other CVD	33517	Procedure	CPT-4	Coronary artery bypass, using venous graft(s) and arterial graft(s); single vein graft (List separately in addition to code for primary procedure)
Other CVD	33518	Procedure	CPT-4	Coronary artery bypass, using venous graft(s) and arterial graft(s); 2 venous grafts (List separately in addition to code for primary procedure)
Other CVD	33519	Procedure	CPT-4	Coronary artery bypass, using venous graft(s) and arterial graft(s); 3 venous grafts (List separately in addition to code for primary procedure)
Other CVD	33520	Procedure	CPT-4	Coronary Artery Bypass, Nonautogenous Graft (eg, Synthetic Or Cadaver); Single Graft
Other CVD	33521	Procedure	CPT-4	Coronary artery bypass, using venous graft(s) and arterial graft(s); 4 venous grafts (List separately in addition to code for primary procedure)
Other CVD	33522	Procedure	CPT-4	Coronary artery bypass, using venous graft(s) and arterial graft(s); 5 venous grafts (List separately in addition to code for primary procedure)
Other CVD	33523	Procedure	CPT-4	Coronary artery bypass, using venous graft(s) and arterial graft(s); 6 or more venous grafts (List separately in addition to code for primary procedure)
Other CVD	33525	Procedure	CPT-4	Coronary Artery Bypass, Nonautogenous Graft (eg, Synthetic Or Cadaver); Two Coronary Grafts
Other CVD	33528	Procedure	CPT-4	Coronary Artery Bypass, Nonautogenous Graft (eg, Synthetic Or Cadaver); Three Or More Coronary Grafts
Other CVD	33530	Procedure	CPT-4	Reoperation, coronary artery bypass procedure or valve procedure, more than 1 month after original operation (List separately in addition to code for primary procedure)
Other CVD	33533	Procedure	CPT-4	Coronary artery bypass, using arterial graft(s); single arterial graft
Other CVD	33534	Procedure	CPT-4	Coronary artery bypass, using arterial graft(s); 2 coronary arterial grafts
Other CVD	33535	Procedure	CPT-4	Coronary artery bypass, using arterial graft(s); 3 coronary arterial grafts
Other CVD	33536	Procedure	CPT-4	Coronary artery bypass, using arterial graft(s); 4 or more coronary arterial grafts
Other CVD	33560	Procedure	CPT-4	Myocardial Operation Combined With Coronary Bypass Procedure
Other CVD	33570	Procedure	CPT-4	CORONARY ANGIOPLASTY W/BYPASS
Other CVD	33572	Procedure	CPT-4	Coronary endarterectomy, open, any method, of left anterior descending, circumflex, or right coronary artery performed in conjunction with coronary artery bypass graft procedure, each vessel (List separately in addition to primary procedure)
Other CVD	33575	Procedure	CPT-4	CORON ANGIOPLSTY W/BYPASS; COMBO W/VASCULARIZAT
Other CVD	35301	Procedure	CPT-4	Thromboendarterectomy, including patch graft, if performed; carotid, vertebral, subclavian, by neck incision
Other CVD	35390	Procedure	CPT-4	Reoperation, carotid, thromboendarterectomy, more than 1 month after original operation (List separately in addition to code for primary procedure)
Other CVD	35582	Procedure	CPT-4	In-situ vein bypass; aortofemoral-popliteal (only femoral-popliteal portion in-situ)

Other CVD	35583	Procedure	CPT-4	In-situ vein bypass; femoral-popliteal
Other CVD	35585	Procedure	CPT-4	In-situ vein bypass; femoral-anterior tibial, posterior tibial, or peroneal artery
Other CVD	35587	Procedure	CPT-4	In-situ vein bypass; popliteal-tibial, peroneal
Other CVD	35600	Procedure	CPT-4	Harvest of upper extremity artery, 1 segment, for coronary artery bypass procedure (List separately in addition to code for primary procedure)
Other CVD	35601	Procedure	CPT-4	Bypass graft, with other than vein; common carotid-ipsilateral internal carotid
Other CVD	35621	Procedure	CPT-4	Bypass graft, with other than vein; axillary-femoral
Other CVD	35623	Procedure	CPT-4	Bypass graft, with other than vein; axillary-popliteal or -tibial
Other CVD	35637	Procedure	CPT-4	Bypass graft, with other than vein; aortoiliac
Other CVD	35638	Procedure	CPT-4	Bypass graft, with other than vein; aortobi-iliac
Other CVD	35641	Procedure	CPT-4	Bypass graft, with other than vein; aortoiliac or bi-iliac
Other CVD	35646	Procedure	CPT-4	Bypass graft, with other than vein; aortobifemoral
Other CVD	35647	Procedure	CPT-4	Bypass graft, with other than vein; aortofemoral
Other CVD	35651	Procedure	CPT-4	Bypass graft, with other than vein; aortofemoral-popliteal
Other CVD	35654	Procedure	CPT-4	Bypass graft, with other than vein; axillary-femoral-femoral
Other CVD	35656	Procedure	CPT-4	Bypass graft, with other than vein; femoral-popliteal
Other CVD	35661	Procedure	CPT-4	Bypass graft, with other than vein; femoral-femoral
Other CVD	35663	Procedure	CPT-4	Bypass graft, with other than vein; iliioiliac
Other CVD	35665	Procedure	CPT-4	Bypass graft, with other than vein; iliofemoral
Other CVD	35666	Procedure	CPT-4	Bypass graft, with other than vein; femoral-anterior tibial, posterior tibial, or peroneal artery
Other CVD	35671	Procedure	CPT-4	Bypass graft, with other than vein; popliteal-tibial or -peroneal artery
Other CVD	35901	Procedure	CPT-4	Excision of infected graft; neck
Other CVD	37215	Procedure	CPT-4	Transcatheter placement of intravascular stent(s), cervical carotid artery, open or percutaneous, including angioplasty, when performed, and radiological supervision and interpretation; with distal embolic protection
Other CVD	37216	Procedure	CPT-4	Transcatheter placement of intravascular stent(s), cervical carotid artery, open or percutaneous, including angioplasty, when performed, and radiological supervision and interpretation; without distal embolic protection
Other CVD	92973	Procedure	CPT-4	Percutaneous transluminal coronary thrombectomy mechanical (List separately in addition to code for primary procedure)
Other CVD	92974	Procedure	CPT-4	Transcatheter placement of radiation delivery device for subsequent coronary intravascular brachytherapy (List separately in addition to code for primary procedure)
Other CVD	92981	Procedure	CPT-4	Transcatheter placement of an intracoronary stent(s), percutaneous, with or without other therapeutic intervention, any method; each additional vessel (List separately in addition to code for primary procedure)
Other CVD	92987	Procedure	CPT-4	Percutaneous balloon valvuloplasty; mitral valve
Other CVD	00.61	Procedure	ICD-9-CM	PERQ ANGIOPLASTY EXTRACRANIAL VES
Other CVD	00.63	Procedure	ICD-9-CM	PERQ INSERTION CAROTID ART STENT(S)
Other CVD	00.66	Procedure	ICD-9-CM	Percutaneous transluminal coronary angioplasty
Other CVD	0075T	Procedure	CPT-3	Transcatheter placement of extracranial vertebral artery stent(s), including radiologic supervision and interpretation, open or percutaneous; initial vessel
Other CVD	0076T	Procedure	CPT-3	Transcatheter placement of extracranial vertebral artery stent(s), including radiologic supervision and interpretation, open or percutaneous; each additional vessel (List separately in addition to code for primary procedure)
Other CVD	17.55	Procedure	ICD-9-CM	Transluminal coronary atherectomy
Other CVD	36.0	Procedure	ICD-9-CM	removal of coronary artery obstruction and insertion of stent
Other CVD	36.00	Procedure	ICD-9-CM	removal of coronary artery obstruction and insertion of stent
Other CVD	36.01	Procedure	ICD-9-CM	removal of coronary artery obstruction and insertion of stent
Other CVD	36.02	Procedure	ICD-9-CM	removal of coronary artery obstruction and insertion of stent
Other CVD	36.03	Procedure	ICD-9-CM	removal of coronary artery obstruction and insertion of stent
Other CVD	36.04	Procedure	ICD-9-CM	removal of coronary artery obstruction and insertion of stent
Other CVD	36.05	Procedure	ICD-9-CM	removal of coronary artery obstruction and insertion of stent
Other CVD	36.06	Procedure	ICD-9-CM	removal of coronary artery obstruction and insertion of stent
Other CVD	36.07	Procedure	ICD-9-CM	removal of coronary artery obstruction and insertion of stent
Other CVD	36.08	Procedure	ICD-9-CM	removal of coronary artery obstruction and insertion of stent
Other CVD	36.09	Procedure	ICD-9-CM	removal of coronary artery obstruction and insertion of stent
Other CVD	36.1	Procedure	ICD-9-CM	Bypass Anastomosis For Heart Revascularization
Other CVD	36.10	Procedure	ICD-9-CM	Bypass Anastomosis For Heart Revascularization
Other CVD	36.11	Procedure	ICD-9-CM	Bypass Anastomosis For Heart Revascularization
Other CVD	36.12	Procedure	ICD-9-CM	Bypass Anastomosis For Heart Revascularization
Other CVD	36.13	Procedure	ICD-9-CM	Bypass Anastomosis For Heart Revascularization
Other CVD	36.14	Procedure	ICD-9-CM	Bypass Anastomosis For Heart Revascularization
Other CVD	36.15	Procedure	ICD-9-CM	Bypass Anastomosis For Heart Revascularization
Other CVD	36.16	Procedure	ICD-9-CM	Bypass Anastomosis For Heart Revascularization
Other CVD	36.17	Procedure	ICD-9-CM	Bypass Anastomosis For Heart Revascularization

Other CVD	36.18	Procedure	ICD-9-CM	Bypass Anastomosis For Heart Revascularization
Other CVD	36.19	Procedure	ICD-9-CM	Bypass Anastomosis For Heart Revascularization
Other CVD	36.20	Procedure	ICD-9-CM	Heart Revascularization By Arterial Implant
Other CVD	36.21	Procedure	ICD-9-CM	Heart Revascularization By Arterial Implant
Other CVD	36.22	Procedure	ICD-9-CM	Heart Revascularization By Arterial Implant
Other CVD	36.23	Procedure	ICD-9-CM	Heart Revascularization By Arterial Implant
Other CVD	36.24	Procedure	ICD-9-CM	Heart Revascularization By Arterial Implant
Other CVD	36.25	Procedure	ICD-9-CM	Heart Revascularization By Arterial Implant
Other CVD	36.26	Procedure	ICD-9-CM	Heart Revascularization By Arterial Implant
Other CVD	36.27	Procedure	ICD-9-CM	Heart Revascularization By Arterial Implant
Other CVD	36.28	Procedure	ICD-9-CM	Heart Revascularization By Arterial Implant
Other CVD	36.29	Procedure	ICD-9-CM	Heart Revascularization By Arterial Implant
Other CVD	36.2	Procedure	ICD-9-CM	Heart Revascularization By Arterial Implant
Other CVD	38.11	Procedure	ICD-9-CM	ENDARTERECTOMY INTRACRANIAL VESSELS
Other CVD	38.12	Procedure	ICD-9-CM	ENDARTERECT OTH VESSELS HEAD&NECK
Other CVD	430.*	Diagnosis	ICD-9-CM	Subarachnoid hemorrhage
Other CVD	431.*	Diagnosis	ICD-9-CM	Intracerebral hemorrhage
Other CVD	432.*	Diagnosis	ICD-9-CM	Other and unspecified intracranial hemorrhage
Other CVD	433.01	Diagnosis	ICD-9-CM	Occlusion and stenosis of basilar artery with cerebral infarction
Other CVD	433.11	Diagnosis	ICD-9-CM	Occlusion and stenosis of carotid artery with cerebral infarction
Other CVD	433.21	Diagnosis	ICD-9-CM	Occlusion and stenosis of vertebral artery with cerebral infarction
Other CVD	433.31	Diagnosis	ICD-9-CM	Occlusion and stenosis of multiple and bilateral precerebral arteries with cerebral infarction
Other CVD	433.81	Diagnosis	ICD-9-CM	Occlusion and stenosis of other specified precerebral artery with cerebral infarction
Other CVD	433.91	Diagnosis	ICD-9-CM	Occlusion and stenosis of unspecified precerebral artery with cerebral infarction
Other CVD	434.01	Diagnosis	ICD-9-CM	Cerebral thrombosis with cerebral infarction
Other CVD	434.11	Diagnosis	ICD-9-CM	Cerebral embolism with cerebral infarction
Other CVD	434.91	Diagnosis	ICD-9-CM	Cerebral artery occlusion, unspecified, with cerebral infarction
Other CVD	436	Diagnosis	ICD-9-CM	Acute, but ill-defined, cerebrovascular disease
Other CVD	852.0*	Diagnosis	ICD-9-CM	Subarachnoid hemorrhage following injury without mention of open intracranial wound
Other CVD	852.2*	Diagnosis	ICD-9-CM	Subdural hemorrhage following injury without mention of open intracranial wound
Other CVD	852.4*	Diagnosis	ICD-9-CM	Extradural hemorrhage following injury without mention of open intracranial wound
Other CVD	853.0*	Diagnosis	ICD-9-CM	Other and unspecified intracranial hemorrhage following injury without mention of open intracranial wound
Other CVD	852.0	Diagnosis	ICD-9-CM	Subarachnoid hemorrhage following injury without mention of open intracranial wound
Other CVD	852.2	Diagnosis	ICD-9-CM	Subdural hemorrhage following injury without mention of open intracranial wound
Other CVD	852.4	Diagnosis	ICD-9-CM	Extradural hemorrhage following injury without mention of open intracranial wound
Other CVD	853.0	Diagnosis	ICD-9-CM	Other and unspecified intracranial hemorrhage following injury without mention of open intracranial wound
Other CVD	88.5	Procedure	ICD-9-CM	Angiocardiology Using Contrast Material
Other CVD	88.50	Procedure	ICD-9-CM	Angiocardiology Using Contrast Material
Other CVD	88.51	Procedure	ICD-9-CM	Angiocardiology Using Contrast Material
Other CVD	88.52	Procedure	ICD-9-CM	Angiocardiology Using Contrast Material
Other CVD	88.53	Procedure	ICD-9-CM	Angiocardiology Using Contrast Material
Other CVD	88.54	Procedure	ICD-9-CM	Angiocardiology Using Contrast Material
Other CVD	88.55	Procedure	ICD-9-CM	Angiocardiology Using Contrast Material
Other CVD	88.56	Procedure	ICD-9-CM	Angiocardiology Using Contrast Material
Other CVD	88.57	Procedure	ICD-9-CM	Angiocardiology Using Contrast Material
Other CVD	88.58	Procedure	ICD-9-CM	Angiocardiology Using Contrast Material
Other CVD	88.59	Procedure	ICD-9-CM	Angiocardiology Using Contrast Material
Other CVD	92977	Procedure	CPT-4	Thrombolysis, coronary; by intravenous infusion
Other CVD	92980	Procedure	CPT-4	Transcatheter placement of an intracoronary stent(s), percutaneous, with or without other therapeutic intervention, any method; single vessel
Other CVD	92982	Procedure	CPT-4	Percutaneous transluminal coronary balloon angioplasty; single vessel
Other CVD	92984	Procedure	CPT-4	Percutaneous transluminal coronary balloon angioplasty; each additional vessel (List separately in addition to code for primary procedure)
Other CVD	92995	Procedure	CPT-4	Percutaneous transluminal coronary atherectomy, by mechanical or other method, with or without balloon angioplasty; single vessel
Other CVD	92996	Procedure	CPT-4	Percutaneous transluminal coronary atherectomy, by mechanical or other method, with or without balloon angioplasty; each additional vessel (List separately in addition to code for primary procedure)
Other CVD	996.03	Diagnosis	ICD-9-CM	Mechanical complication due to coronary bypass graft
Other CVD	G0290	Procedure	HCPCS	Transcatheter placement of a drug eluting intracoronary stent(s), percutaneous, with or without other therapeutic intervention, any method; single vessel
Other CVD	G0291	Procedure	HCPCS	Transcatheter placement of a drug eluting intracoronary stent(s), percutaneous, with or without other therapeutic intervention, any method; each additional vessel

Other CVD	S2205	Procedure	HCPCS	Minimally invasive direct coronary artery bypass surgery involving mini-thoracotomy or mini-sternotomy surgery, performed under direct vision; using arterial graft(s), single coronary arterial graft
Other CVD	S2206	Procedure	HCPCS	Minimally invasive direct coronary artery bypass surgery involving mini-thoracotomy or mini-sternotomy surgery, performed under direct vision; using arterial graft(s), two coronary arterial grafts
Other CVD	S2207	Procedure	HCPCS	Minimally invasive direct coronary artery bypass surgery involving mini-thoracotomy or mini-sternotomy surgery, performed under direct vision; using venous graft only, single coronary venous graft
Other CVD	S2208	Procedure	HCPCS	Minimally invasive direct coronary artery bypass surgery involving mini-thoracotomy or mini-sternotomy surgery, performed under direct vision; using single arterial and venous graft(s), single venous graft
Other CVD	S2209	Procedure	HCPCS	Minimally invasive direct coronary artery bypass surgery involving mini-thoracotomy or mini-sternotomy surgery, performed under direct vision; using two arterial grafts and single venous graft
Other CVD	S2211	Procedure	HCPCS	Transcatheter placement of intravascular stent(s), carotid artery, percutaneous, unilateral (if performed bilaterally, use-50 modifier)
Other CVD	V45.81	Diagnosis	ICD-9-CM	Aortocoronary bypass status
Other CVD	V45.82	Diagnosis	ICD-9-CM	Percutaneous transluminal coronary angioplasty status

Appendix H: List of Generic and Brand Names used to Define Drug Covariates in this Request

Covariate	Generic Name	Brand Name
ACE-Inhibitors	BENAZEPRIL HCL	Lotensin
ACE-Inhibitors	CAPTOPRIL	captopril
ACE-Inhibitors	ENALAPRIL MALEATE	Vasotec
ACE-Inhibitors	LISINOPRIL	Zestril
ACE-Inhibitors	LISINOPRIL/HYDROCHLOROTHIAZIDE	Prinzide
ACE-Inhibitors	LISINOPRIL/HYDROCHLOROTHIAZIDE	Zestoretic
ACE-Inhibitors	QUINAPRIL HCL	Accupril
ACE-Inhibitors	FOSINOPRIL SODIUM	Monopril
ACE-Inhibitors	RAMIPRIL	Altace
ACE-Inhibitors	ENALAPRIL MALEATE	enalapril maleate
ACE-Inhibitors	ENALAPRIL MALEATE/FELODIPINE	Lexxel
ACE-Inhibitors	CAPTOPRIL	Capoten
ACE-Inhibitors	LISINOPRIL	lisinopril
ACE-Inhibitors	LISINOPRIL	Prinivil
ACE-Inhibitors	CAPTOPRIL/HYDROCHLOROTHIAZIDE	captopril-hydrochlorothiazide
ACE-Inhibitors	TRANDOLAPRIL/VERAPAMIL HCL	Tarka
ACE-Inhibitors	TRANDOLAPRIL	Mavik
ACE-Inhibitors	ENALAPRIL MALEATE/HYDROCHLOROTHIAZIDE	Vaseretic
ACE-Inhibitors	QUINAPRIL HCL/HYDROCHLOROTHIAZIDE	Accuretic
ACE-Inhibitors	AMLODIPINE BESYLATE/BENAZEPRIL HCL	Lotrel
ACE-Inhibitors	BENAZEPRIL HCL/HYDROCHLOROTHIAZIDE	Lotensin HCT
ACE-Inhibitors	MOEXIPRIL HCL	Univasc
ACE-Inhibitors	LISINOPRIL/HYDROCHLOROTHIAZIDE	lisinopril-hydrochlorothiazide
ACE-Inhibitors	ENALAPRIL MALEATE/HYDROCHLOROTHIAZIDE	enalapril-hydrochlorothiazide
ACE-Inhibitors	CAPTOPRIL/HYDROCHLOROTHIAZIDE	Capozide
ACE-Inhibitors	MOEXIPRIL HCL	moexipril
ACE-Inhibitors	QUINAPRIL HCL	quinapril
ACE-Inhibitors	BENAZEPRIL HCL	benazepril
ACE-Inhibitors	FOSINOPRIL SODIUM	fosinopril
ACE-Inhibitors	BENAZEPRIL HCL/HYDROCHLOROTHIAZIDE	benazepril-hydrochlorothiazide
ACE-Inhibitors	FOSINOPRIL SODIUM/HYDROCHLOROTHIAZIDE	Monopril HCT
ACE-Inhibitors	RAMIPRIL	ramipril
ACE-Inhibitors	MOEXIPRIL HCL/HYDROCHLOROTHIAZIDE	moexipril-hydrochlorothiazide
ACE-Inhibitors	QUINAPRIL HCL/HYDROCHLOROTHIAZIDE	Quinaretic
ACE-Inhibitors	TRANDOLAPRIL	trandolapril
ACE-Inhibitors	FOSINOPRIL SODIUM/HYDROCHLOROTHIAZIDE	fosinopril-hydrochlorothiazide
ACE-Inhibitors	AMLODIPINE BESYLATE/BENAZEPRIL HCL	amlodipine-benazepril

ACE-Inhibitors	PERINDOPRIL ERBUMINE	perindopril erbumine
ACE-Inhibitors	MOEXIPRIL HCL/HYDROCHLOROTHIAZIDE	Uniretic
ACE-Inhibitors	PERINDOPRIL ERBUMINE	Aceon
ACE-Inhibitors	LISINOPRIL/DIETARY SUPPLEMENT,COMB.10	Lytensopril
ACE-Inhibitors	LISINOPRIL/DIETARY SUPPLEMENT,COMB.10	Lytensopril-90
ACE-Inhibitors	TRANDOLAPRIL/VERAPAMIL HCL	trandolapril-verapamil
ACE-Inhibitors	QUINAPRIL HCL/HYDROCHLOROTHIAZIDE	quinapril-hydrochlorothiazide
ACE-Inhibitors	LISINOPRIL	Qbrelis
ACE-Inhibitors	PERINDOPRIL ARGININE/AMLODIPINE BESYLATE	Prestalia
ACE-Inhibitors	ENALAPRIL MALEATE	Epaned
Antiarrhythmics	QUINIDINE GLUCONATE	quinidine gluconate
Antiarrhythmics	VERAPAMIL HCL	verapamil
Antiarrhythmics	PROCAINAMIDE HCL	procainamide
Antiarrhythmics	QUINIDINE SULFATE	Quinidex Extentabs
Antiarrhythmics	MEXILETINE HCL	mexiletine
Antiarrhythmics	AMIODARONE HCL	amiodarone
Antiarrhythmics	QUINIDINE SULFATE	quinidine sulfate
Antiarrhythmics	PROCAINAMIDE HCL	Procanbid
Antiarrhythmics	DISOPYRAMIDE PHOSPHATE	disopyramide phosphate
Antiarrhythmics	MEXILETINE HCL	Mexitil
Antiarrhythmics	TOCAINIDE HCL	Tonocard
Antiarrhythmics	PROCAINAMIDE HCL	Pronestyl
Antiarrhythmics	AMIODARONE HCL	Pacerone
Antiarrhythmics	PROPAFENONE HCL	propafenone
Antiarrhythmics	QUINIDINE GLUCONATE	Quinaglute Dura-Tabs
Antiarrhythmics	SOTALOL HCL	sotalol
Antiarrhythmics	PROPAFENONE HCL	Rythmol
Antiarrhythmics	MORICIZINE HCL	Ethmozine
Antiarrhythmics	FLECAINIDE ACETATE	flecainide
Antiarrhythmics	DISOPYRAMIDE PHOSPHATE	Norpace
Antiarrhythmics	AMIODARONE HCL	Cordarone
Antiarrhythmics	VERAPAMIL HCL	Calan
Antiarrhythmics	PROPAFENONE HCL	Rythmol SR
Antiarrhythmics	DISOPYRAMIDE PHOSPHATE	Norpace CR
Antiarrhythmics	PROCAINAMIDE HCL	Pronestyl-SR
Antiarrhythmics	SOTALOL HCL	Betapace AF
Antiarrhythmics	SOTALOL HCL	Betapace
Antiarrhythmics	SOTALOL HCL	Sotalol AF
Antiarrhythmics	FLECAINIDE ACETATE	Tambocor
Antiarrhythmics	SOTALOL HCL	Sorine

Antiarrhythmics	DRONEDARONE HCL	Multaq
Antiarrhythmics	SOTALOL HCL	Sotylize
Antiarrhythmics	DOFETILIDE	dofetilide
Antiarrhythmics	DOFETILIDE	Tikosyn
Anticoagulant (non-oral)	HEPARIN SODIUM,PORCINE/DEXTROSE 5 % IN WATER	heparin (porcine) in 5 % dex
Anticoagulant (non-oral)	ARDEPARIN SODIUM,PORCINE	Normiflo
Anticoagulant (non-oral)	HEPARIN SODIUM,PORCINE IN 0.9 % SODIUM CHLORIDE	Heparin Combination
Anticoagulant (non-oral)	HEPARIN SODIUM,PORCINE	heparin (porcine)
Anticoagulant (non-oral)	HEPARIN SODIUM,PORCINE	Vasceze
Anticoagulant (non-oral)	HEPARIN SODIUM,BEEF	heparin (bovine)
Anticoagulant (non-oral)	FONDAPARINUX SODIUM	Arixtra
Anticoagulant (non-oral)	HEPARIN SODIUM,PORCINE IN 0.9 % SODIUM CHLORIDE	Hep-Pak
Anticoagulant (non-oral)	LEPIRUDIN,RECOMBINANT	Refludan
Anticoagulant (non-oral)	TINZAPARIN SODIUM,PORCINE	Innohep
Anticoagulant (non-oral)	DANAPAROID SODIUM,PORCINE	Orgaran
Anticoagulant (non-oral)	HEPARIN SODIUM,PORCINE/PF	heparin, porcine (PF)
Anticoagulant (non-oral)	ENOXAPARIN SODIUM	Lovenox
Anticoagulant (non-oral)	ARGATROBAN	argatroban
Anticoagulant (non-oral)	HEPARIN SODIUM,PORCINE IN 0.9 % SODIUM CHLORIDE	heparin (porcine) in 0.9% NaCl
Anticoagulant (non-oral)	HEPARIN SODIUM,PORCINE IN 0.9 % SODIUM CHLORIDE/PF	heparin (porcine) in NaCl (PF)
Anticoagulant (non-oral)	HEPARIN SODIUM,PORCINE IN 0.45 % SODIUM CHLORIDE	heparin(porcine) in 0.45% NaCl
Anticoagulant (non-oral)	DALTEPARIN SODIUM,PORCINE	Fragmin
Anticoagulant (non-oral)	DESIRUDIN	Iprivask
Anticoagulant (non-oral)	ENOXAPARIN SODIUM	enoxaparin
Anticoagulant (non-oral)	HEPARIN SODIUM,PORCINE/DEXTROSE 5 % IN WATER/PF	heparin (porcine) in D5W (PF)
Anticoagulant (non-oral)	BIVALIRUDIN	Angiomax
Anticoagulant (non-oral)	WARFARIN SODIUM	Coumadin
Anticoagulant (non-oral)	HEPARIN SODIUM,PORCINE/PF	Monoject Prefill Advanced (PF)
Anticoagulant (non-oral)	FONDAPARINUX SODIUM	fondaparinux
Anticoagulant (non-oral)	ARGATROBAN IN SODIUM CHLORIDE, ISO-OSMOTIC	argatroban in NaCl (iso-os)
Anticoagulant (non-oral)	HEPARIN SODIUM,PORCINE/PF	Monoject Prefill (PF)
Anticoagulant (non-oral)	BIVALIRUDIN	bivalirudin
Anticoagulant (non-oral)	ARGATROBAN IN 0.9 % SODIUM CHLORIDE	argatroban in 0.9 % sod chlor
Anticoagulant (oral)	WARFARIN SODIUM	warfarin
Anticoagulant (oral)	ANISINDIONE	Miradon
Anticoagulant (oral)	WARFARIN SODIUM	Jantoven
Anticoagulant (oral)	DABIGATRAN ETEXILATE MESYLATE	Pradaxa
Anticoagulant (oral)	RIVAROXABAN	Xarelto
Anticoagulant (oral)	EDOXYBAN TOSYLATE	Savaysa
Anticoagulant (oral)	APIXABAN	Eliquis

Beta Blockers	ATENOLOL	atenolol
Beta Blockers	ATENOLOL	Tenormin
Beta Blockers	METOPROLOL TARTRATE	Lopressor
Beta Blockers	NADOLOL	Corgard
Beta Blockers	PROPRANOLOL HCL	Inderal
Beta Blockers	PROPRANOLOL HCL	propranolol
Beta Blockers	PROPRANOLOL HCL/HYDROCHLOROTHIAZIDE	Inderide
Beta Blockers	TIMOLOL MALEATE	timolol maleate
Beta Blockers	NADOLOL	nadolol
Beta Blockers	PROPRANOLOL HCL	Inderal LA
Beta Blockers	METOPROLOL TARTRATE	metoprolol tartrate
Beta Blockers	ATENOLOL/CHLORTHALIDONE	atenolol-chlorthalidone
Beta Blockers	PINDOLOL	pindolol
Beta Blockers	ACEBUTOLOL HCL	Sectral
Beta Blockers	ACEBUTOLOL HCL	acebutolol
Beta Blockers	PROPRANOLOL HCL/HYDROCHLOROTHIAZIDE	propranolol-hydrochlorothiazid
Beta Blockers	BISOPROLOL FUMARATE/HYDROCHLOROTHIAZIDE	bisoprolol-hydrochlorothiazide
Beta Blockers	PROPRANOLOL HCL/HYDROCHLOROTHIAZIDE	Inderide LA
Beta Blockers	PINDOLOL	Visken
Beta Blockers	NADOLOL/BENDROFLUMETHIAZIDE	Corzide
Beta Blockers	ATENOLOL	Senormin
Beta Blockers	BISOPROLOL FUMARATE	bisoprolol fumarate
Beta Blockers	ATENOLOL/CHLORTHALIDONE	Tenoretic 50
Beta Blockers	BISOPROLOL FUMARATE/HYDROCHLOROTHIAZIDE	Ziac
Beta Blockers	METOPROLOL SUCCINATE	Toprol XL
Beta Blockers	BETAXOLOL HCL	Kerlone
Beta Blockers	BISOPROLOL FUMARATE	Zebeta
Beta Blockers	TIMOLOL MALEATE	Blocadren
Beta Blockers	TIMOLOL MALEATE/HYDROCHLOROTHIAZIDE	Timolide
Beta Blockers	CARTEOLOL HCL	Cartrol
Beta Blockers	METOPROLOL TARTRATE/HYDROCHLOROTHIAZIDE	Lopressor HCT
Beta Blockers	PROPRANOLOL HCL	InnoPran XL
Beta Blockers	METOPROLOL SUCCINATE	metoprolol succinate
Beta Blockers	BETAXOLOL HCL	betaxolol
Beta Blockers	NADOLOL/BENDROFLUMETHIAZIDE	nadolol-bendroflumethiazide
Beta Blockers	METOPROLOL TARTRATE/DIETARY SUPPLEMENT, COMB.10	Hypertensolol
Beta Blockers	PENBUTOLOL SULFATE	Levatol
Beta Blockers	METOPROLOL TARTRATE/HYDROCHLOROTHIAZIDE	metoprolol ta-hydrochlorothiaz
Beta Blockers	NEBIVOLOL HCL	Bystolic
Beta Blockers	METOPROLOL SUCCINATE/HYDROCHLOROTHIAZIDE	Dutoprol

Beta Blockers	ATENOLOL/CHLORTHALIDONE	Tenoretic 100
Beta Blockers	METOPROLOL SUCCINATE/HYDROCHLOROTHIAZIDE	metoprolol su-hydrochlorothiaz
Beta Blockers	PROPRANOLOL HCL	Hemangeol
Beta Blockers	PROPRANOLOL HCL	Inderal XL
Statins	ATORVASTATIN CALCIUM	Lipitor
Statins	FLUVASTATIN SODIUM	Lescol
Statins	LOVASTATIN	Mevacor
Statins	PRAVASTATIN SODIUM	Pravachol
Statins	CERIVASTATIN SODIUM	Baycol
Statins	SIMVASTATIN	Zocor
Statins	ASPIRIN (CALCIUM CARB & MAGNESIUM BUFFERS)/PRAVASTATIN	PRAVIGARD PAC
Statins	LOVASTATIN	Altacor
Statins	LOVASTATIN	Altoprev
Statins	LOVASTATIN	lovastatin
Statins	SIMVASTATIN	simvastatin
Statins	PRAVASTATIN SODIUM	pravastatin
Statins	NIACIN/LOVASTATIN	Advicor
Statins	FLUVASTATIN SODIUM	Lescol XL
Statins	AMLODIPINE BESYLATE/ATORVASTATIN CALCIUM	Caduet
Statins	EZETIMIBE/SIMVASTATIN	Vytorin 10-10
Statins	EZETIMIBE/SIMVASTATIN	Vytorin 10-20
Statins	EZETIMIBE/SIMVASTATIN	Vytorin 10-40
Statins	ROSUVASTATIN CALCIUM	Crestor
Statins	NIACIN/SIMVASTATIN	Simcor
Statins	EZETIMIBE/SIMVASTATIN	Vytorin 10-80
Statins	AMLODIPINE BESYLATE/ATORVASTATIN CALCIUM	amlodipine-atorvastatin
Statins	ATORVASTATIN CALCIUM	atorvastatin
Statins	PITAVASTATIN CALCIUM	Livalo
Statins	SITAGLIPTIN PHOSPHATE/SIMVASTATIN	Juvisync
Statins	EZETIMIBE/ATORVASTATIN CALCIUM	Liptruzet
Statins	ROSUVASTATIN CALCIUM	rosuvastatin
Statins	FLUVASTATIN SODIUM	fluvastatin
ARBs	AMLODIPINE BESYLATE/OLMESARTAN MEDOXOMIL	amlodipine-olmesartan
ARBs	LOSARTAN POTASSIUM	losartan
ARBs	LOSARTAN POTASSIUM	Cozaar
ARBs	TELMISARTAN	telmisartan
ARBs	VALSARTAN	valsartan
ARBs	VALSARTAN	Diovan
ARBs	OLMESARTAN MEDOXOMIL	Benicar
ARBs	IRBESARTAN	irbesartan

ARBs	VALSARTAN/HYDROCHLOROTHIAZIDE	Diovan HCT
ARBs	VALSARTAN/HYDROCHLOROTHIAZIDE	valsartan-hydrochlorothiazide
ARBs	TELMISARTAN/AMLODIPINE BESYLATE	telmisartan-amlodipine
ARBs	IRBESARTAN	Avapro
ARBs	AMLODIPINE BESYLATE/VALSARTAN	amlodipine-valsartan
ARBs	LOSARTAN POTASSIUM/HYDROCHLOROTHIAZIDE	Hyzaar
ARBs	LOSARTAN POTASSIUM/HYDROCHLOROTHIAZIDE	losartan-hydrochlorothiazide
ARBs	AMLODIPINE BESYLATE/VALSARTAN/HYDROCHLOROTHIAZIDE	amlodipine-valsartan-hcthiazid
ARBs	CANDESARTAN CILEXETIL	candesartan
ARBs	TELMISARTAN/AMLODIPINE BESYLATE	Twynsta
ARBs	IRBESARTAN/HYDROCHLOROTHIAZIDE	Avalide
ARBs	OLMESARTAN MEDOXOMIL/HYDROCHLOROTHIAZIDE	Benicar HCT
ARBs	EPROSARTAN MESYLATE	Teveten
ARBs	SACUBITRIL/VALSARTAN	Entresto
ARBs	IRBESARTAN/HYDROCHLOROTHIAZIDE	irbesartan-hydrochlorothiazide
ARBs	AZILSARTAN MEDOXOMIL	Edarbi
ARBs	TELMISARTAN	Micardis
ARBs	TELMISARTAN/HYDROCHLOROTHIAZIDE	telmisartan-hydrochlorothiazid
ARBs	EPROSARTAN MESYLATE/HYDROCHLOROTHIAZIDE	Teveten HCT
ARBs	OLMESARTAN MEDOXOMIL/AMLODIPINE BESYLATE/HYDROCHLOROTHIAZIDE	Tribenzor
ARBs	CANDESARTAN CILEXETIL	Atacand
ARBs	AMLODIPINE BESYLATE/VALSARTAN	Exforge
ARBs	AMLODIPINE BESYLATE/VALSARTAN/HYDROCHLOROTHIAZIDE	Exforge HCT
ARBs	AMLODIPINE BESYLATE/OLMESARTAN MEDOXOMIL	Azor
ARBs	CANDESARTAN CILEXETIL/HYDROCHLOROTHIAZIDE	Atacand HCT
ARBs	OLMESARTAN MEDOXOMIL/AMLODIPINE BESYLATE/HYDROCHLOROTHIAZIDE	olmesartan-amlodipin-hcthiazid
ARBs	TELMISARTAN/HYDROCHLOROTHIAZIDE	Micardis HCT
ARBs	OLMESARTAN MEDOXOMIL/HYDROCHLOROTHIAZIDE	olmesartan-hydrochlorothiazide
ARBs	CANDESARTAN CILEXETIL/HYDROCHLOROTHIAZIDE	candesartan-hydrochlorothiazid
ARBs	OLMESARTAN MEDOXOMIL	olmesartan
ARBs	NEBIVOLOL HCL/VALSARTAN	Byvalson
ARBs	AZILSARTAN MEDOXOMIL/CHLORTHALIDONE	Edarbyclor
ARBs	EPROSARTAN MESYLATE	eprosartan
Diuretics	FUROSEMIDE	furosemide
Diuretics	HYDROCHLOROTHIAZIDE	hydrochlorothiazide
Diuretics	FUROSEMIDE	Lasix
Diuretics	MANNITOL	Osmitrol 5 %
Diuretics	AMILORIDE HCL	Midamor
Diuretics	METOLAZONE	metolazone
Diuretics	TRIAMTERENE/HYDROCHLOROTHIAZIDE	Dyazide

Diuretics	METHAZOLAMIDE	methazolamide
Diuretics	TORSEMIDE	torsemide
Diuretics	BUMETANIDE	bumetanide
Diuretics	EPLERENONE	Inspira
Diuretics	SPIRONOLACTONE	spironolactone
Diuretics	ACETAZOLAMIDE	acetazolamide
Diuretics	TRIAMTERENE/HYDROCHLOROTHIAZIDE	triamterene-hydrochlorothiazid
Diuretics	BUMETANIDE	Bumex
Diuretics	INDAPAMIDE	indapamide
Diuretics	AMILORIDE HCL/HYDROCHLOROTHIAZIDE	amiloride-hydrochlorothiazide
Diuretics	CHLORTHALIDONE	chlorthalidone
Diuretics	SPIRONOLACTONE/HYDROCHLOROTHIAZIDE	spironolacton-hydrochlorothiaz
Diuretics	SPIRONOLACTONE	Aldactone
Diuretics	EPLERENONE	eplerenone
Diuretics	CHLOROTHIAZIDE	Diuril
Diuretics	METHAZOLAMIDE	Neptazane
Diuretics	POLYTHIAZIDE	Renese
Diuretics	MANNITOL	mannitol 5 %
Diuretics	ACETAZOLAMIDE	Diamox
Diuretics	CHLOROTHIAZIDE	chlorothiazide
Diuretics	MANNITOL	mannitol 25 %
Diuretics	TORSEMIDE	Demadex
Diuretics	MANNITOL	mannitol 20 %
Diuretics	HYDROCHLOROTHIAZIDE	Microzide
Diuretics	TRIAMTERENE	Dyrenium
Diuretics	ACETAZOLAMIDE	Diamox Sequels
Diuretics	ACETAZOLAMIDE SODIUM	Diamox
Diuretics	TOLVAPTAN	Samsca
Diuretics	TRICHLORMETHIAZIDE	trichlormethiazide
Diuretics	ETHACRYNIC ACID	ethacrynic acid
Diuretics	SPIRONOLACTONE/HYDROCHLOROTHIAZIDE	Aldactazide
Diuretics	MANNITOL	mannitol 10 %
Diuretics	UREA	Ureaphil
Diuretics	AMILORIDE HCL	amiloride
Diuretics	TRIAMTERENE/HYDROCHLOROTHIAZIDE	Maxzide
Diuretics	CONIVAPTAN HCL/DEXTROSE 5 % IN WATER	Vaprisol
Diuretics	ETHACRYNATE SODIUM	Sodium Edecrin
Diuretics	HYDROCHLOROTHIAZIDE	Oretic
Diuretics	MANNITOL	Osmitrol 10 %
Diuretics	INDAPAMIDE	Lozol

Diuretics	METHYCLOTHIAZIDE	methyclothiazide
Diuretics	ACETAZOLAMIDE SODIUM	acetazolamide sodium
Diuretics	GLYCERIN	Glycitrol
Diuretics	METHAZOLAMIDE	GlaucoTabs
Diuretics	METOLAZONE	Zaroxolyn
Diuretics	HYDROCHLOROTHIAZIDE	Aquazide-H
Diuretics	PAMABROM	Diuretic Softgels
Diuretics	CHLOROTHIAZIDE SODIUM	Diuril IV
Diuretics	HYDROCHLOROTHIAZIDE	Esidrix
Diuretics	CHLOROTHIAZIDE SODIUM	chlorothiazide sodium
Diuretics	ETHACRYNATE SODIUM	ethacrynate sodium
Diuretics	POTASSIUM SALICYLATE/SALICYLAMIDE/CAFFEINE	Trim-Elim
Diuretics	TRIAMTERENE/HYDROCHLOROTHIAZIDE	Maxzide-25mg
Diuretics	BENDROFLUMETHIAZIDE	Naturetin
Diuretics	CHLORTHALIDONE	Thalitone
Diuretics	MANNITOL	Osmitrol 20 %
Diuretics	PAMABROM	Diurex Max
Diuretics	METHYCLOTHIAZIDE	Aquatensen
Diuretics	MANNITOL	mannitol 15 %
Diuretics	AMMONIUM CHLORIDE	ammonium chloride
Diuretics	METOLAZONE	Mykrox
Diuretics	METHAZOLAMIDE	MZM
Diuretics	CONIVAPTAN HCL	Vaprisol
Diuretics	AMILORIDE HCL/HYDROCHLOROTHIAZIDE	Moduretic
Diuretics	HYDROCHLOROTHIAZIDE	HydroDiuril
Diuretics	FUROSEMIDE IN 0.9 % SODIUM CHLORIDE	furosemide in 0.9 % NaCl
Diuretics	PAMABROM	Aqua-Ban/Pamabrom
Diuretics	METHYCLOTHIAZIDE	Enduron
Diuretics	DICHLORPHENAMIDE	Daranide
Diuretics	ETHACRYNIC ACID	Edecrin
Diuretics	HYDROFLUMETHIAZIDE	Diucardin
Diuretics	TRICHLORMETHIAZIDE	Aquazide
Diuretics	TRICHLORMETHIAZIDE	Naqua
Diuretics	MANNITOL	Osmitrol 15 %
Diuretics	GLYCERIN	Osmoglyn
Diuretics	HYDROCHLOROTHIAZIDE	Carozide
Diuretics	GLYCERIN	Introl
Antiplatelets	DIPYRIDAMOLE	dipyridamole
Antiplatelets	PENTOXIFYLLINE	pentoxifylline
Antiplatelets	DIPYRIDAMOLE	Dipradam

Antiplatelets	PRASUGREL HCL	Effient
Antiplatelets	TICLOPIDINE HCL	ticlopidine
Antiplatelets	CLOPIDOGREL BISULFATE	clopidogrel
Antiplatelets	EPTIFIBATIDE	Integrilin
Antiplatelets	PENTOXIFYLLINE	PentoPAK
Antiplatelets	CILOSTAZOL	cilostazol
Antiplatelets	CLOPIDOGREL BISULFATE	Plavix
Antiplatelets	PENTOXIFYLLINE	Trental
Antiplatelets	TICAGRELOR	Brilinta
Antiplatelets	CILOSTAZOL	Pletal
Antiplatelets	TIROFIBAN HCL MONOHYDRATE IN 0.9 % SODIUM CHLORIDE	Aggrastat in sodium chloride
Antiplatelets	ASPIRIN/DIPYRIDAMOLE	Aggrenox
Antiplatelets	TIROFIBAN HCL MONOHYDRATE	Aggrastat Concentrate
Antiplatelets	PENTOXIFYLLINE	Pentoxil
Antiplatelets	ANAGRELIDE HCL	anagrelide
Antiplatelets	DIPYRIDAMOLE	Persantine
Antiplatelets	TICLOPIDINE HCL	Ticlid
Antiplatelets	DIPYRIDAMOLE	Persantine IV
Antiplatelets	EPTIFIBATIDE	eptifibatide
Antiplatelets	CANGRELOR TETRASODIUM	Kengreal
Antiplatelets	VORAPAXAR SULFATE	Zontivity
Antiplatelets	ASPIRIN/DIPYRIDAMOLE	aspirin-dipyridamole
Antiplatelets	ANAGRELIDE HCL	Agrylin
Antiplatelets	ABCIXIMAB	Reopro

Appendix I. Specifications for cder_mpl2p_wp004

The Center for Drug Evaluation and Research requested execution of the Cohort Identification and Descriptive Analysis (CIDA) tool with Propensity Score Matching (PSM), version 3.3.2, to investigate the risk of ischemic and hemorrhagic stroke among new users of typical antipsychotics compared to new users of atypical antipsychotics with varying risk windows.

Query Period: January 1, 2001 - September 30, 2015
Coverage Requirement: Medical and Drug Coverage
Enrollment Requirement: 183 days
Enrollment Gap: 45 Days
Age Group(s): 18-64 years

	Primary Analysis: Exposure/Comparator Pair 1		Sensitivity Analysis 1: Exposure/Comparator Pair 2		Sensitivity Analysis 2: Exposure/Comparator Pair 2		Sensitivity Analysis 3: Exposure/Comparator Pair 2	
Drug/Exposure								
Incident Exposure/Comparator	All typical antipsychotics	All atypical antipsychotics	All typical antipsychotics (risk window = 1-15 days)	All atypical antipsychotics (risk window = 1-15 days)	All typical antipsychotics (risk window = 16-90 days)	All atypical antipsychotics (risk window = 16-90 days)	Haloperidol	All atypical antipsychotics
Incident w/ Respect to:	All atypical and typical antipsychotics	All atypical and typical antipsychotics	All atypical and typical antipsychotics	All atypical and typical antipsychotics	All atypical and typical antipsychotics	All atypical and typical antipsychotics	All atypical and typical antipsychotics	All atypical and typical antipsychotics
Washout	183 days	183 days	183 days	183 days	183 days	183 days	183 days	183 days
Cohort Definition	Cohort includes only the first valid incident treatment episode during the query period	Cohort includes only the first valid incident treatment episode during the query period	Cohort includes only the first valid incident treatment episode during the query period	Cohort includes only the first valid incident treatment episode during the query period	Cohort includes only the first valid incident treatment episode during the query period	Cohort includes only the first valid incident treatment episode during the query period	Cohort includes only the first valid incident treatment episode during the query period	Cohort includes only the first valid incident treatment episode during the query period
Episode Gap	30 days	30 days	30 days	30 days	30 days	30 days	30 days	30 days
Episode Extension Period	None	None	None	None	None	None	None	None
Minimum Episode Duration	1 day	1 day	1 day	1 days	16 days	16 days	1 day	1 day
Maximum Episode Duration	None	None	15 days	15 days	90 days	90 days	None	None
Minimum Days Supplied	1 day	1 day	1 day	1 day	1 day	1 day	1 day	1 day
Episode Truncation at Death	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Episode Truncation for Exposure	All atypical antipsychotics	All typical antipsychotics	All atypical antipsychotics	All typical antipsychotics	All atypical antipsychotics	All typical antipsychotics	All atypical and typical antipsychotics (except Haloperidol)	All typical antipsychotics
Inclusion/Exclusion								
Pre-Existing Condition	Hemorrhagic and ischemic stroke	Hemorrhagic and ischemic stroke	Hemorrhagic and ischemic stroke	Hemorrhagic and ischemic stroke	Hemorrhagic and ischemic stroke	Hemorrhagic and ischemic stroke	Hemorrhagic and ischemic stroke	Hemorrhagic and ischemic stroke
Include/Exclude	Exclude	Exclude	Exclude	Exclude	Exclude	Exclude	Exclude	Exclude
Care Settings/PDX	Any	Any	Any	Any	Any	Any	Any	Any
Lookback Period	-183, 0	-183, 0	-183, 0	-183, 0	-183, 0	-183, 0	-183, 0	-183, 0
Pre-Existing Condition	Dementia	Dementia	Dementia	Dementia	Dementia	Dementia	Dementia	Dementia
Include/Exclude	Exclude	Exclude	Exclude	Exclude	Exclude	Exclude	Exclude	Exclude
Care Settings/PDX	Any	Any	Any	Any	Any	Any	Any	Any
Lookback Period	-183, -1	-183, -1	-183, -1	-183, -1	-183, -1	-183, -1	-183, -1	-183, -1
Pre-Existing Condition	Cancer	Cancer	Cancer	Cancer	Cancer	Cancer	Cancer	Cancer
Include/Exclude	Exclude	Exclude	Exclude	Exclude	Exclude	Exclude	Exclude	Exclude
Care Settings/PDX	Any	Any	Any	Any	Any	Any	Any	Any
Lookback Period	-183, -1	-183, -1	-183, -1	-183, -1	-183, -1	-183, -1	-183, -1	-183, -1
Event/Outcome								
Event/Outcome	Hemorrhagic and ischemic stroke	Hemorrhagic and ischemic stroke	Hemorrhagic and ischemic stroke	Hemorrhagic and ischemic stroke	Hemorrhagic and ischemic stroke	Hemorrhagic and ischemic stroke	Hemorrhagic and ischemic stroke	Hemorrhagic and ischemic stroke
Care Setting/PDX	IPP	IPP	IPP	IPP	IPP	IPP	IPP	IPP
Washout	0	0	0	0	0	0	0	0
Blackout Period	None	None	None	None	15 days	15 days	None	None

Propensity Score Matching								
Covariates	See Covariates tab	See Covariates tab	See Covariates tab	See Covariates tab	See Covariates tab	See Covariates tab	See Covariates tab	See Covariates tab
Covariate Evaluation Window	-183, -1	-183, -1	-183, -1	-183, -1	-183, -1	-183, -1	-183, -1	-183, -1
Matching Ratio	1:1	1:1	1:1	1:1	1:1	1:1	1:1	1:1
Matching Caliper	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
Analysis Type	Unconditional	Unconditional	Unconditional	Unconditional	Unconditional	Unconditional	Unconditional	Unconditional
Propensity Score Percentile Stratification								
Percentiles	5	5	5	5	5	5	5	5
Additional Covariates to Adjust for in Cox Model	None	None	None	None	None	None	None	None
Subgroup Analysis	None	None	None	None	None	None	None	None
Kaplan Meier Plot	Yes	Yes	No	No	No	No	Yes	Yes
<i>ICD-9-CM, HCPCS, and CPT codes are provided by Optum360. NDC codes are checked against First Data Bank's "National Drug Data File (NDDF®) Plus."</i>								