

# Outcomes and Resource Utilization Associated With Readmissions After Atrial Fibrillation Hospitalizations

Byomesh Tripathi, MD; Varunsiri Atti, MD; Varun Kumar, MD; Vamsidhar Naraparaju, MD; Purnima Sharma, MD; Shilpkumar Arora, MD; Ewelina Wojtaszek, MD; Radha Gopalan, MD; Konstantinos C. Siontis, MD; Bernard J. Gersh, MB, ChB, DPhil; Abhishek Deshmukh, MD

**Background**—Atrial fibrillation is the most common arrhythmia worldwide. Data regarding 30-day readmission rates after discharge for atrial fibrillation remain poorly reported.

**Methods and Results**—The Nationwide Readmission Database (2010–2014) was queried using the *International Classification of Diseases, Ninth Revision (ICD-9)* codes to identify study population. Incidence, etiologies of 30-day readmission and predictors of 30-day readmissions, and cost of care were analyzed. Among 1 723 378 patients who survived to discharge, 249 343 (14.4%) patients were readmitted within 30 days. Compared with the readmitted group, the nonreadmitted group had higher utilization of electrical cardioversion and catheter ablation. Atrial fibrillation was the most common cause of readmission (24.1%). Median time to 30-day readmission was 13 days. Advancing age, female sex, and longer stay during index hospitalization predicted higher 30-day readmissions, whereas private insurance, electrical cardioversion, catheter ablation, higher income, and elective admissions correlated with lower 30-day readmission. Comorbidities such as heart failure, neurological disorder, chronic obstructive pulmonary disease, diabetes mellitus, chronic kidney disease, chronic liver failure, coagulopathy, anemia, peripheral vascular disease, and electrolyte disturbance, correlated with increased 30-day readmissions and cost burden. Trend analysis showed a progressive decline in 30-day readmission rates from 14.7% in 2010 to 14.3% in 2014 (*P* trend, <0.001).

**Conclusions**—Approximately 1 in 7 patients were readmitted within 30 days of discharge, with symptomatic atrial fibrillation being the most common cause. We identified a predictive model for increased risk of readmissions and treatment expense. Electrical cardioversion during index admission was associated with a significant reduction in 30-day readmissions and service charges. The 30-day readmissions correlated with a substantial rise in the cost of care. (*J Am Heart Assoc.* 2019;8:e013026. DOI: 10.1161/JAHA.119.013026.)

**Key Words:** arrhythmia (heart rhythm disorders) • NRD database • readmission

Atrial fibrillation (AF) is the most common arrhythmia worldwide and the estimated global age-adjusted prevalence was 0.5% in 2010, representing nearly 33.5 million individuals.<sup>1</sup> AF affects nearly 2.3 million Americans, and prevalence is expected to double by the year 2050.<sup>2,3</sup>

From the University of Arizona, Phoenix, AZ (B.T., P.S., R.G.); Department of Medicine, Michigan State University, East Lansing, MI (V.A.); University of South Florida, Tampa, FL (V.K.); St. Francis Hospital and Medical Center, Hartford, CT (V.N.); Guthrie Robert Packer Hospital, Sayre, PA (S.A.); Icahn School of Medicine at Mount Sinai, New York, NY (E.W.); Department of Cardiology, Mayo Clinic, Rochester, MN (K.C.S., B.J.G., A.D.).

Accompanying Tables S1 through S5 and Figures S1, S2 are available at <https://www.ahajournals.org/doi/suppl/10.1161/JAHA.119.013026>

**Correspondence to:** Byomesh Tripathi, MD, University of Arizona, 1111 E McDowell Rd, Phoenix, AZ 85006. E-mail: [byomesh.tripathi86@gmail.com](mailto:byomesh.tripathi86@gmail.com)  
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Prevalence is likely underestimated given that a large proportion of asymptomatic individuals and those having transient symptoms remain undiagnosed. It is recognized as a global public health problem because of its significant burden of morbidity and mortality resulting from embolic stroke, congestive heart failure, and acute coronary syndrome.<sup>4</sup> The incremental cost related to AF in the United States is estimated at \$6 to 26 billion per year and much of it is related to inpatient hospitalization, with nearly 460 000 hospitalizations having a primary discharge diagnosis of AF every year.<sup>5,6</sup> Although recent advances in treatment of AF improved the overall symptom burden and quality of life, readmission rates continue to escalate and have been one of the major sources of AF-related financial strains on healthcare economies throughout the world.<sup>7</sup> Previous studies examined the readmission rates of AF; however, they had a short duration<sup>8</sup> or included only selected patient populations.<sup>7</sup> In this context, we sought to identify the etiologies, predictors, and trends of 30-day readmissions after an index hospitalization for AF and factors associated with high cost of care over a 5-year period

## Clinical Perspective

### What Is New?

- Atrial fibrillation readmission rate was noted to be  $\approx 14\%$ .
- There is a slow, but progressive, decline in readmission rate over recent years.
- Atrial fibrillation readmissions were associated with a significant rise in cost of care, and novel techniques, such as electrical cardioversion and catheter ablation, predicted lower 30-day readmission risk.

### What Are Clinical Implications?

- Atrial fibrillation hospitalizations remain a high source of readmission and burden but it is possible to risk stratify patients based on clinical characteristics.
- We encourage increased utilization of novel techniques, such as electrical cardioversion and catheter ablation, to prevent readmissions.

using the largest, all-payer readmission database available in the United States.

## Methods

### Data Source

The study was derived from the Healthcare Cost and Utilization Project's (HCUP) National Readmission Database (NRD) of 2010–2014, sponsored by the Agency for Healthcare Research and Quality. The NRD is one of the largest publicly available all-payer inpatient care databases in the United States, which includes data on  $\approx 15$  million discharges in year 2010–2014, estimating roughly 35 million discharges from 22 states with reliable, verified linkage numbers. The NRD represents 49.3% of total US hospitalizations. Patients were tracked during the same year using the variable "NRD\_visitlink," and time between 2 admissions was calculated by subtracting the variable "NRD\_DaysToEvent." Time to readmission was calculated by subtracting length of stay (LOS) of index admissions to time between 2 admissions. Sampling weights provided by the sponsor were used to produce national estimates.<sup>9</sup> The design of the NRD is available online.<sup>10</sup> The data that support the findings of this study are available from the corresponding author upon reasonable request. The NRD is a de-identified database and was deemed exempt from ethical review at institutional review boards of University of Arizona (Phoenix, AZ), University of South Florida (Tampa, FL), St. Francis Medical Center (Hartford, CT), Michigan State University (East Lansing, MI), Guthrie Robert Packer Hospital (Sayre, PA), Icahn School of Medicine (Mount Sinai, NY), and Mayo Clinic (Rochester, MN).

### Data Selection

We queried the NRD using the *International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)* diagnosis codes for AF (427.31) in the primary diagnosis field to extract the study population. Patients aged  $<18$  years and with missing data for age and sex were excluded. We also excluded index admissions during the month of December because we did not have 30-day follow-up data for that month. We identified in total 1 723 378 index admissions with a primary discharge diagnosis of AF (Figure S1). A similar methodology for data extraction from the NRD has been used and validated in previously published studies.<sup>11</sup> Patients who were readmitted to any hospital within 30 days ( $n=249\ 343$ ) within the same calendar year were further evaluated.

### Outcomes

The primary outcome of our study was 30-day readmissions. Secondary analysis was performed to explore predictors of 30-day readmission and cost of care associated with AF hospitalizations. Causes of readmission were identified by using *ICD-9-CM* codes in the primary diagnosis field during readmission observation. We identified 2523 different *ICD-9-CM* diagnosis codes and combined the ones with similar diagnoses to make clinically important groups (Tables S1 and S2). Additional analysis was performed to explore trends in mortality during index hospitalization and rehospitalizations (Figure S2).

### Definition of Variables

NRD variables were used to identify patients' demographic characteristics, including age, sex, hospital characteristics (bed size and teaching status), and patient-specific characteristics, including median household income category for a patient's ZIP code, primary payer, admission type, admission day, and discharge disposition.<sup>12</sup> Comorbidities such as hypertension, diabetes mellitus, chronic obstructive pulmonary disease, peripheral vascular disease, neurological disorder, hypothyroidism, coexisting malignancy, coagulopathy, valvular heart disease, anemia, and fluid and electrolyte disturbance were identified by variables provided in the NRD, which uses *ICD-9-CM* diagnoses and the diagnosis-related group in effect on the discharge date. Electrical cardioversion was identified by the appropriate *ICD-9-CM* procedural code in the primary procedural field. Other comorbidities were identified by *ICD-9* codes in a secondary diagnosis field, which included heart failure, chronic kidney disease, chronic liver failure, previous coronary artery bypass graft, previous myocardial infarction, previous stroke/transient ischemic attack, etc (Table S3).

The Deyo modification of the Charlson comorbidity index, which contains 17 comorbid conditions with differential

**Table 1.** Baseline Characteristics of Patients With 30-Day Readmission vs No Readmission With Atrial Fibrillation

	Readmission		Overall	P Value
	No	Yes		
Index population	1 474 035	249 343 (14.47%)	1 723 378	
Patient-level variables				
Age, y (%)				<0.001
18 to 49	8.27	4.26	7.69	
50 to 64	23.97	19.03	23.25	
65 to 79	39.13	39.78	39.22	
≥80	28.64	36.93	29.84	
Sex (%)				<0.001
Male	49.11	43.82	48.34	
Female	50.89	56.18	51.66	
Primary payer, %				<0.001
Medicare/Medicaid	70.43	82.41	72.16	
Private including HMO	23.6	13.6	22.15	
Self-pay/no charge/other	5.76	3.82	5.48	
Missing	0.21	0.18	0.21	
Median household income category for patient's ZIP code, %*				<0.001
0 to 25th percentile	27.05	30.09	27.49	
26 to 50th percentile	26.12	26.08	26.12	
51 to 75th percentile	24.28	23.51	24.17	
76 to 100th percentile	22.54	20.32	22.22	
Devo/Charlson Score, % <sup>†</sup>				<0.001
0 to 1	67.64	49.03	64.95	
2 to 3	24.26	33.97	25.66	
≥3	8.10	17.00	9.39	
Comorbidities, %				
Congestive heart failure <sup>‡</sup>	27.55	40.73	29.45	<0.001
Neurological disorder or paralysis <sup>§</sup>	6.43	8.87	6.79	<0.001
Chronic lung disease <sup>§</sup>	20.25	29.51	21.59	<0.001
Diabetes mellitus <sup>§</sup>	24.34	30.82	25.28	<0.001
Chronic renal failure <sup>§</sup>	12.28	21.20	13.57	<0.001
Hypertension <sup>§</sup>	68.94	72.06	69.39	<0.001
Hypothyroidism <sup>§</sup>	15.98	17.84	16.25	<0.001
Hematological or oncological malignancy <sup>§</sup>	3.61	7.47	4.16	<0.001
Chronic liver disease <sup>§</sup>	1.54	2.45	1.67	<0.001
Coagulopathy <sup>§</sup>	3.13	4.70	3.36	<0.001
Valvular heart disease <sup>§</sup>	0.23	0.43	0.26	<0.001
Deficiency anemia <sup>§</sup>	11.38	19.47	12.55	<0.001
Previous MI <sup>‡</sup>	6.73	8.50	6.99	<0.001
Previous CABG <sup>‡</sup>	7.11	9.26	7.42	<0.001
Previous stroke <sup>‡</sup>	1.75	2.44	1.85	<0.001
Peripheral vascular disease <sup>§</sup>	6.38	9.51	6.83	<0.001

Continued

Table 1. Continued

	Readmission		Overall	P Value
	No	Yes		
Fluid and electrolyte disturbances <sup>§</sup>	19.62	26.35	20.60	<0.001
Electrical cardioversion <sup>‡</sup>	8.80	6.96	8.54	<0.001
Pacemaker/implantable cardioverter defibrillator <sup>‡</sup>	1.17	1.13	1.17	0.066
Catheter ablation <sup>‡</sup>	0.57	0.44	0.55	<0.0001
Hospital characteristics				
Hospital bed size, % <sup>  </sup>				0.040
Small	13.45	13.33	13.43	
Medium	23.71	23.92	23.74	
Large	62.84	62.75	62.83	
Hospital teaching status, % <sup>¶</sup>				0.203
Nonteaching	53.91	54.05	53.93	
Teaching	46.09	45.95	46.07	
Admission type, %				<0.001
Nonelective	86.30	89.96	86.83	
Elective	13.70	10.04	13.17	
Admission day, %				<0.001
Weekdays	79.88	79.18	79.78	
Weekend	20.12	20.82	20.22	
Disposition, %				<0.001
Home	89.45	81.85	88.35	
Facility/others	9.77	16.8	10.79	

CABG indicates coronary artery bypass graft; HMO, Health Maintenance Organization; MI, myocardial infarction.

\*Represents a quartile classification of the estimated median household income of residents in the patient's ZIP code, derived from ZIP code demographic data obtained from Claritas. The quartiles are identified by values of 1 to 4, indicating the poorest to wealthiest populations. Because these estimates are updated annually, the value ranges vary by year. [https://www.hcup-us.ahrq.gov/db/vars/zipinc\\_qrtl/nrdnote.jsp](https://www.hcup-us.ahrq.gov/db/vars/zipinc_qrtl/nrdnote.jsp).

<sup>†</sup>Charlson/Deyo comorbidity index was calculated as per Deyo classification.

<sup>‡</sup>Other primary diagnosis: derived from appropriate *International Classification of Diseases, Ninth Revision, Clinical Modification* code mentioned in Table S2.

<sup>§</sup>Variables are Agency for Healthcare Research and Quality comorbidity measures.

<sup>||</sup>The bed-size cut-off points divided into small, medium, and large have been done so that approximately one-third of the hospitals in a given region, location, and teaching status combination would fall within each bed-size category. [https://www.hcup-us.ahrq.gov/db/vars/hosp\\_bedsizes/nrdnote.jsp](https://www.hcup-us.ahrq.gov/db/vars/hosp_bedsizes/nrdnote.jsp).

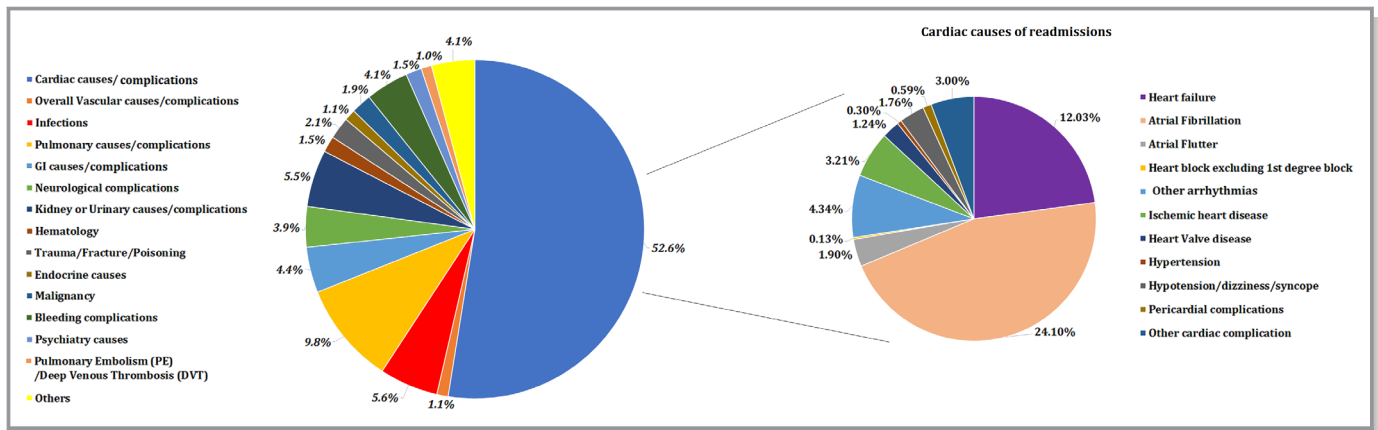
<sup>¶</sup>A hospital is considered to be a teaching hospital if it has an American Medical Association–approved residency program, is a member of the Council of Teaching Hospitals, or has a ratio of full-time equivalent interns and residents to beds of 0.25 or higher. [https://www.hcup-us.ahrq.gov/db/vars/hosp\\_ur\\_teach/nrdnote.jsp](https://www.hcup-us.ahrq.gov/db/vars/hosp_ur_teach/nrdnote.jsp).

weights, was utilized to define severity of comorbid conditions. This score ranges from 0 to 33, with higher scores corresponding to larger burden of comorbid diseases, (Table S4).<sup>13</sup> Annual hospital volume of procedures was calculated by using a unique hospital identification provided by the NRD. We also evaluated LOS provided by the NRD. Cost of index hospitalization was calculated by merging cost to charge ratio provided by the HCUP to the main data set and after adjusting for inflation.<sup>14</sup>

## Statistical Analysis

SAS software (version 9.4; SAS Institute Inc, Cary, NC) was implemented for analyses. The Wilcoxon rank-sum test was

performed to test differences in continuous variables between the readmitted group and nonreadmitted group, because data were not normally distributed. The chi-square test of independence was used for testing the difference between the 2 groups with respect to categorical variables. Multivariate predictors of 30-day readmission were calculated using a hierarchical logistic regression model, and predictors of cost of care during index hospitalization were explored using a linear regression model. The hierarchical logistic regression model considers the effect of nesting (ie, patient-level effects nested with hospital-level effects in our study). In this model, a unique hospital identification number was incorporated as a random effect, creating a 2-level model. This methodology has been recommended by the HCUP and has been used widely in



**Figure 1.** Etiologies of 30-day readmissions after atrial fibrillation. GI indicates gastrointestinal.

previous studies.<sup>9,15</sup> In multivariate analysis, clinically significant variables, such as age, sex, primary payer, median household income, admission type and day, certain hospital characteristics (bed capacity and teaching status), as well as comorbidities, were incorporated. We only considered comorbidities with a statistically significant difference in readmission using the univariate method (congestive heart failure, neurological disorder, chronic lung disease, diabetes mellitus, chronic renal failure, hypertension, hypothyroidism, chronic liver disease, coagulopathy, valvular heart disease, anemia, peripheral vascular disease, and fluid and electrolyte disturbance). The same independent variables were included to create linear regression model to assess predictors of cost of care. For multivariable analyses for cost of care, data were log transformed to achieve a normal distribution. For trend analysis of categorical variables, such as 30-day readmission and in-hospital mortality, the modified chi-squared test of trend for proportions (Cochrane–Armitage test) was used. For a continuous variable, such as cost of care, simple linear regression was used to obtain *P* values for yearly trends. All readmissions were identified using “NRD\_visitlink,” and the hospital identifier “Hosp\_NRD” was used further to track readmissions to same versus different hospitals.

## Results

### Baseline Characteristics

Our study included 1 723 378 patients who had an index hospitalization with AF as the primary discharge diagnosis between 2010 and 2014. Among these, 249 343 (14.5%) patients were readmitted within 30 days after discharge (Table 1). Compared with the nonreadmitted group, the majority of readmitted patients were females (56.2% versus 50.89%; *P*<0.001), aged >65 years (76.7% versus 67.77%; *P*<0.001), and

covered through Medicare/Medicaid (82.4% versus 70.43%; *P*<0.001). Readmitted patients had a higher baseline burden of comorbidities represented by the Charlson comorbidity index  $\geq 2$  compared with those without a readmission. Hypertension, heart failure, and diabetes mellitus were the most common comorbidities among hospitalized patients, with higher prevalence among the readmitted group. Lower utilization of electrical cardioversion (6.96% versus 8.8%; *P*<0.001) and catheter ablation (0.44% versus 0.57%; *P*<0.001) were observed among the readmitted group. Patients who required readmission had a significantly higher frequency of unplanned hospitalizations (89.96% versus 86.3%; *P*<0.001), weekend index admissions (20.82% versus 20.12%; *P*<0.001), and disposition to nursing facilities (16.8% versus 9.77%; *P*<0.001) compared with patients who were not readmitted. Readmitted patients had higher median (interquartile range) LOS and cost of hospitalization during the index admission compared with those without a readmission. Thirty-day readmission rates among different subgroups are presented in Table S5.

### Etiologies of 30-Day Readmission

Cardiac conditions were the most common causes (52.6%) of 30-day readmission. Among cardiac conditions, AF was the most common (24.1%) followed by heart failure (12%) and ischemic heart disease (3%). The common noncardiac causes included pulmonary conditions (9.7%), infections (5.6%), and bleeding complications (4.1%; Figure 1).

### Predictors of 30-Day Readmission

Results of multivariable hierarchical logistic regression analysis for predictors of 30-day readmission are presented in Table 2. Results showed that advancing age, female sex, and coexisting comorbid conditions like heart failure, neurological

**Table 2.** Multivariate Predictors of 30-Day Readmission After Atrial Fibrillation

Variable	Odds Ratio	LL	UL	P Value
Age	1.007	1.006	1.007	<0.001
Sex				
Male	Referent	Referent	Referent	
Female	1.06	1.05	1.08	<0.001
Primary payer				
Medicare/Medicaid	Referent	Referent	Referent	
Private including HMO	0.71	0.70	0.73	<0.001
Self-pay/no charge/other	0.77	0.74	0.80	<0.001
Median household income category for patient's ZIP code*				
0 to 25th percentile	Referent	Referent	Referent	
26 to 50th percentile	0.94	0.92	0.95	<0.001
51 to 75th percentile	0.92	0.90	0.94	<0.001
76 to 100th percentile	0.89	0.87	0.91	<0.001
Comorbidities				
Congestive heart failure <sup>†</sup>	1.38	1.36	1.40	<0.001
Neurological disorder or paralysis <sup>‡</sup>	1.15	1.13	1.18	<0.001
Chronic lung disease <sup>‡</sup>	1.38	1.36	1.41	<0.001
Diabetes mellitus <sup>‡</sup>	1.20	1.18	1.22	<0.001
Chronic renal failure <sup>‡</sup>	1.33	1.31	1.36	<0.001
Hypertension <sup>‡</sup>	1.00	0.98	1.01	0.776
Hypothyroidism <sup>‡</sup>	1.00	0.98	1.02	0.801
Chronic liver disease <sup>‡</sup>	1.43	1.37	1.50	<0.001
Coagulopathy <sup>‡</sup>	1.14	1.10	1.18	<0.001
Valvular heart disease <sup>‡</sup>	0.90	0.80	1.02	0.088
Deficiency anemia <sup>‡</sup>	1.35	1.32	1.37	<0.001
Peripheral vascular disease <sup>‡</sup>	1.16	1.14	1.19	<0.001
Fluid and electrolyte disturbances <sup>‡</sup>	1.16	1.14	1.18	<0.001
Electrical cardioversion <sup>†</sup>	0.89	0.87	0.92	<0.001
Catheter ablation <sup>†</sup>	0.90	0.81	0.99	0.031
Hospital bed size <sup>§</sup>				
Small	Referent	Referent	Referent	
Medium	1.01	0.98	1.04	0.425
Large	1.00	0.98	1.03	0.768
Hospital teaching status <sup>  </sup>				
Nonteaching	Referent	Referent	Referent	
Teaching	1.04	1.02	1.05	<0.001
Admission type				
Nonelective	Referent	Referent	Referent	
Elective	0.83	0.81	0.85	<0.001
Admission day				
Weekdays	Referent	Referent	Referent	

Continued

Table 2. Continued

	Odds Ratio	LL	UL	P Value
Weekend	1.01	0.99	1.03	0.182
Length of stay	1.03	1.03	1.03	<0.001
C-Index	0.658			

HMO indicates Health Maintenance Organization; LL, Lower limit; UL, Upper limit.

\*Represents a quartile classification of the estimated median household income of residents in the patient's ZIP code, derived from ZIP code demographic data obtained from Claritas. The quartiles are identified by values of 1 to 4, indicating the poorest to wealthiest populations. Because these estimates are updated annually, the value ranges vary by year. [https://www.hcup-us.ahrq.gov/db/vars/zipinc\\_qrtl/nrdnote.jsp](https://www.hcup-us.ahrq.gov/db/vars/zipinc_qrtl/nrdnote.jsp).

†Other primary diagnosis: derived from appropriate *International Classification of Diseases, Ninth Revision, Clinical Modification* code mentioned in Table S2.

‡Variables are Agency for Healthcare Research and Quality comorbidity measures.

§The bed-size cut-off points divided into small, medium, and large have been done so that approximately one-third of the hospitals in a given region, location, and teaching status combination would fall within each bed-size category. [https://www.hcup-us.ahrq.gov/db/vars/hosp\\_bedsiz/nrdnote.jsp](https://www.hcup-us.ahrq.gov/db/vars/hosp_bedsiz/nrdnote.jsp).

||A hospital is considered to be a teaching hospital if it has an American Medical Association–approved residency program, is a member of the Council of Teaching Hospitals, or has a ratio of full-time equivalent interns and residents to beds of 0.25 or higher. [https://www.hcup-us.ahrq.gov/db/vars/hosp\\_ur\\_teach/nrdnote.jsp](https://www.hcup-us.ahrq.gov/db/vars/hosp_ur_teach/nrdnote.jsp).

disorders, chronic lung disease, diabetes mellitus, chronic kidney disease, chronic liver disease, coagulopathy, anemia, peripheral vascular disease, and fluid/electrolyte disturbances were predictive of readmission within 30 days of discharge after an index admission for AF, whereas private insurance (compared with Medicare/Medicaid), higher median household income, elective cardioversion, and catheter ablation during the index admission and elective admissions were associated with lower risk of readmission within 30 days.

### Predictors of Cost of Hospitalization for Index Admission

Results of multivariable hierarchical linear regression analysis for predictors of cost of hospitalization during index admission are presented in Table 3. Readmissions were associated with a 3% increase in cost of care ( $\beta$  coefficient, 0.030;  $P<0.001$ ). Compared with the 18 to 49 years age group, the 50 to 64 years and 65 to 79 years age groups had a higher cost of care, but the age group  $\geq 80$  years was associated with reduced ( $\beta$  coefficient,  $-0.024$ ;  $P<0.001$ ) resource utilization. Higher burden of comorbidities was predictive of higher cost of hospitalization during the index admission for AF. Factors associated with the highest increase in cost of care were utilization of catheter ablation during the index admission ( $\beta$  coefficient, 0.974;  $P<0.001$ ), heart failure ( $\beta$  coefficient, 0.134;  $P<0.001$ ), coagulopathy ( $\beta$  coefficient, 0.087;  $P<0.001$ ), and fluid/electrolyte disturbances ( $\beta$  coefficient, 0.085;  $P<0.001$ ). Other factors associated with increased resource utilization were higher income, admission to teaching centers, elective admission, and longer LOS during the index hospitalization. Factors associated with reduced cost burden were female sex ( $\beta$  coefficient,  $-0.048$ ;  $P<0.001$ ), electrical cardioversion during the index admission ( $\beta$

coefficient,  $-0.116$ ;  $P<0.001$ ), and admission during the weekend ( $\beta$  coefficient,  $-0.008$ ;  $P<0.001$ ).

### Trends in 30-Day Readmission and Cost of Hospitalization

Thirty-day readmission pattern after discharge from index hospitalization is shown in Figure 2. Half of the readmissions occurred in the first 13 days of discharge. We noted a decrease in 30-day readmission rate during the study period (14.75% in 2010 and 14.33% in 2014;  $P$  trend,  $<0.001$ ). Median (interquartile range) cost of hospitalization decreased from USD 5740 (3549–10 025) in 2008 to USD 5660 (3529–9744) in 2014 ( $P$  trend,  $<0.001$ ).

### Same Versus Different Hospital Readmission Outcomes

Outcomes related to same versus different hospital readmission after AF index hospitalization are shown in Figure 3. Readmission in hospitals different to index hospitalization was noted in 21.6% of patients. We noted higher in-hospital mortality (5.75% versus 4.91%;  $P<0.001$ ), LOS (6.2 versus 5.4 days;  $P<0.001$ ), and cost of care (USD 8831 versus 7179;  $P<0.001$ ) in patients admitted to different hospitals compared with the same hospitals.

### Discussion

Our study highlights several important findings related to 30-day readmissions after index hospitalization for AF. First,  $\approx 1$  in 7 patients were readmitted within 30 days of discharge, and symptomatic AF was the most common cause of readmission. Second, advancing age, female sex, and certain coexisting comorbid conditions correlated with increased risk

**Table 3.** Multivariate Predictors of Cost of Care Associated With Atrial Fibrillation Hospitalizations

	Cost of Hospitalization			P Value
	$\beta$ -Coefficient	LL	UL	
Intercept	8.21	8.19	8.22	<0.001
Age, y				
18 to 49	Referent	Referent	Referent	
50 to 64	0.05	0.04	0.05	<0.001
65 to 79	0.03	0.02	0.03	<0.001
$\geq 80$	-0.02	-0.03	-0.02	<0.001
30-day readmission	0.03	0.03	0.03	<0.001
Sex				
Male	Referent	Referent	Referent	
Female	-0.05	-0.05	-0.05	<0.001
Primary payer				
Medicare/Medicaid	Referent	Referent	Referent	
Private including HMO	0.000	-0.004	0.005	0.987
Self-pay/no charge/other	0.000	-0.007	0.007	0.957
Median household income category for patient's ZIP code*				
0 to 25th percentile	Referent	Referent	Referent	
26 to 50th percentile	0.008	0.003	0.012	0.001
51 to 75th percentile	0.007	0.002	0.011	0.005
76 to 100th percentile	0.006	0.001	0.011	0.027
Comorbidities				
Congestive heart failure <sup>†</sup>	0.134	0.130	0.137	<0.001
Neurological disorder or paralysis <sup>‡</sup>	0.038	0.033	0.044	<0.001
Chronic lung disease <sup>‡</sup>	0.074	0.071	0.078	<0.001
Diabetes mellitus <sup>‡</sup>	0.043	0.040	0.046	<0.001
Chronic renal failure <sup>‡</sup>	0.012	0.008	0.016	<0.001
Hypertension <sup>‡</sup>	0.004	0.001	0.007	0.011
Hypothyroidism <sup>‡</sup>	0.000	-0.004	0.004	0.954
Chronic liver disease <sup>‡</sup>	0.047	0.036	0.058	<0.001
Coagulopathy <sup>‡</sup>	0.087	0.079	0.094	<0.001
Valvular heart disease <sup>‡</sup>	0.023	-0.005	0.052	0.111
Deficiency anemia <sup>‡</sup>	0.073	0.069	0.077	<0.001
Peripheral vascular disease <sup>‡</sup>	0.045	0.039	0.050	<0.001
Fluid and electrolyte disturbances <sup>‡</sup>	0.085	0.082	0.089	<0.001
Electrical cardioversion <sup>†</sup>	-0.116	-0.121	-0.111	<0.001
Catheter ablation <sup>†</sup>	0.974	0.956	0.993	<0.001
Hospital bed size <sup>§</sup>				
Small	Referent	Referent	Referent	
Medium	-0.025	-0.044	-0.005	0.014
Large	0.011	-0.008	0.029	0.260
Hospital teaching status <sup>  </sup>				
Nonteaching	Referent	Referent	Referent	

Continued

Table 3. Continued

	Cost of Hospitalization			P Value
	$\beta$ -Coefficient	LL	UL	
Teaching	0.067	0.050	0.085	<0.001
Admission type				
Nonelective	Referent	Referent	Referent	
Elective	0.306	0.301	0.310	<0.001
Admission day				
Weekdays	Referent	Referent	Referent	
Weekend	−0.006	−0.010	−0.003	<0.001
Length of stay	0.106	0.106	0.107	<0.001

HMO indicates Health Maintenance Organization; LL, Lower limit; UL, Upper limit.

\*Represents a quartile classification of the estimated median household income of residents in the patient's ZIP code, derived from ZIP code demographic data obtained from Claritas. The quartiles are identified by values of 1 to 4, indicating the poorest to wealthiest populations. Because these estimates are updated annually, the value ranges vary by year. [https://www.hcup-us.ahrq.gov/db/vars/zipinc\\_qrtl/nrdnote.jsp](https://www.hcup-us.ahrq.gov/db/vars/zipinc_qrtl/nrdnote.jsp).

†Other primary diagnosis: derived from appropriate *International Classification of Diseases, Ninth Revision, Clinical Modification* code mentioned in Table S2.

‡Variables are Agency for Healthcare Research and Quality comorbidity measures.

§The bed-size cut-off points divided into small, medium, and large have been done so that approximately one-third of the hospitals in a given region, location, and teaching status combination would fall within each bed-size category. [https://www.hcup-us.ahrq.gov/db/vars/hosp\\_bedsize/nrdnote.jsp](https://www.hcup-us.ahrq.gov/db/vars/hosp_bedsize/nrdnote.jsp).

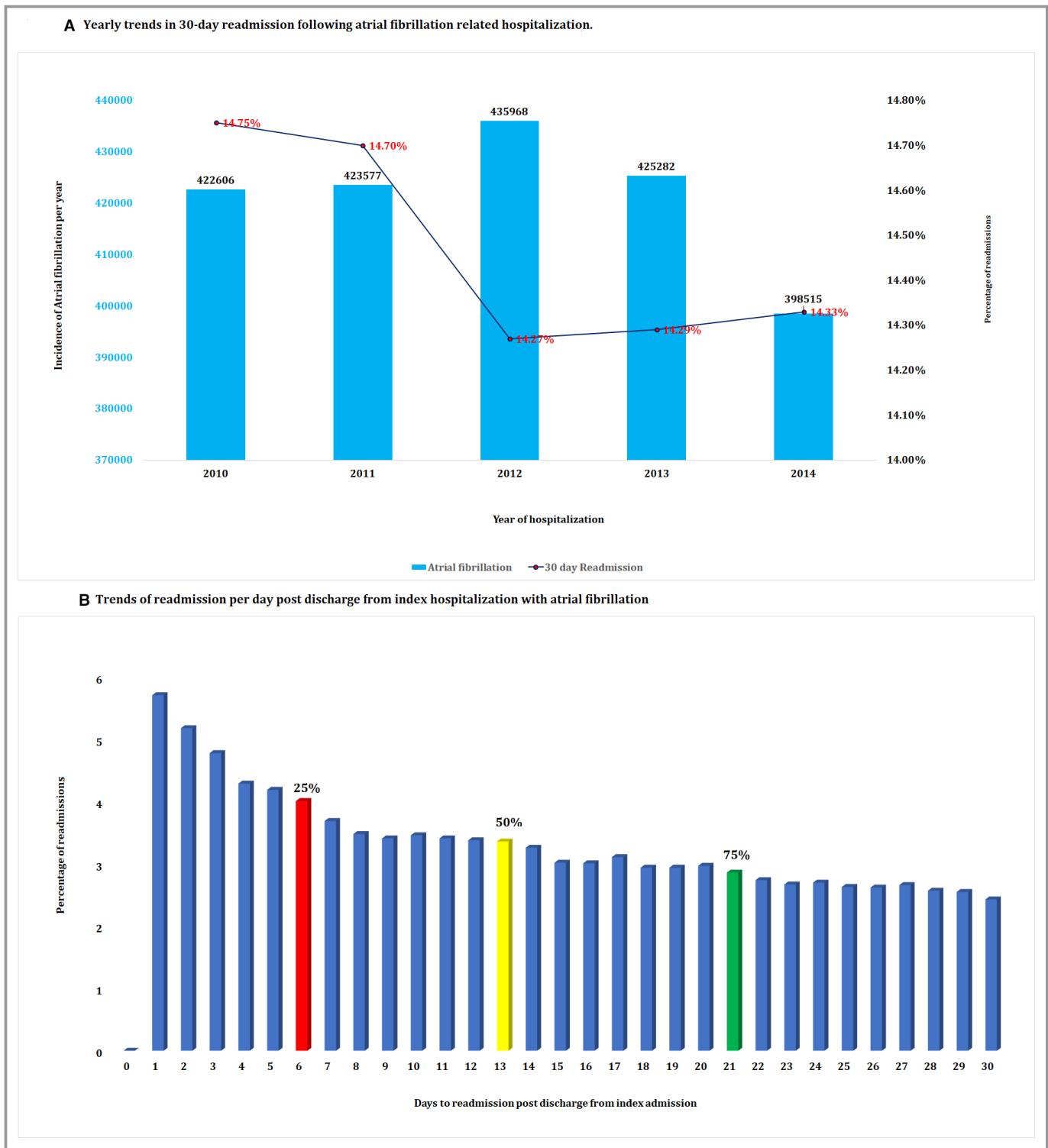
||A hospital is considered to be a teaching hospital if it has an American Medical Association–approved residency program, is a member of the Council of Teaching Hospitals, or has a ratio of full-time equivalent interns and residents to beds of 0.25 or higher. [https://www.hcup-us.ahrq.gov/db/vars/hosp\\_ur\\_teach/nrdnote.jsp](https://www.hcup-us.ahrq.gov/db/vars/hosp_ur_teach/nrdnote.jsp).

of 30-day readmission. Third, there was a small, but progressive, decline in readmission rates and cost of care from 2010 to 2014. Fourth, readmissions were associated with a significant rise in cost of care for hospitalizations related to AF. Last, electrical cardioversion during the index hospitalization correlated independently with reduced 30-day rehospitalizations and cost burden whereas catheter ablation was associated with reduced 30-day readmissions, but a rise in cost of care, during the index hospitalization.

AF is the most common arrhythmia that is contributing to a substantial increase in morbidity and mortality with huge implications on healthcare economies throughout the world.<sup>16</sup> In this context, numerous recent studies have focused on multiple aspects of AF, including trends in hospitalization,<sup>1,6</sup> treatment patterns,<sup>17,18</sup> mortality rates, and readmission rates.<sup>7,8</sup> Given that the burden of AF is known to increase with advancing age, readmission rates have been a topic of great interest. An estimated 2.6 million US seniors (ie, 1 in 5 Medicare beneficiaries) are readmitted within 30 days after hospital discharge, resulting in an annual financial burden of \$26 billion on the US economy.<sup>19</sup> Previously, Freeman et al studied the temporal trends of AF readmission rates among Medicare beneficiaries.<sup>7</sup> They reported an overall 30-day readmission rate of 15%, with a progressive decline by 1% per year from 1999 to 2013. In another study, Johnson et al reported a 30-day readmission rate of 18% utilizing the MarketScan Hospital Drug Database.<sup>20</sup> The readmission rate of 14.5% observed during our study period is similar to these earlier studies. However, the larger study sample and the utilization of an all-payer source database with universal

representation of overall AF population are some of the unique features of our study.

In our study, cardiac conditions were the most common causes of subsequent readmission within 30 days after the index hospitalization for AF. Among the cardiac conditions, AF was the most common etiology. Jencks et al reported that patients were more likely to get readmitted for the same medical condition they had been admitted and treated for during the index hospitalization.<sup>19</sup> So, it is not uncommon for patients with a discharge diagnosis of AF to get readmitted for the same problem. We also found that 87% of these patients with a discharge diagnosis of AF were readmitted once, whereas 11.3% and 1.3% were readmitted twice and thrice, respectively (Figure 4). In fact, many of the patients with AF have a chronic underlying disease that is often unrecognized, and the multiple coexisting comorbidities could trigger AF requiring subsequent hospital admissions. For example, Scardi et al studied the characteristics of first detected lone AF at a single center in Italy, and found that 55% of the patients had paroxysmal AF whereas the rest had chronic AF at the time of diagnosis.<sup>21</sup> Furthermore, Lubitz et al evaluated the patterns of AF in Framingham study participants and reported that it is uncommon to find AF without recurrence in a community during a follow-up period of 1 year.<sup>22</sup> They found that only 6% of their study population had not had AF during a follow-up of 1 year. The long-term recurrence rates of AF have been estimated at 22% to 49% within the first 3 years of detection<sup>23–25</sup> and nearly 60% during a follow-up of 5 years.<sup>26</sup> The wide variation in recurrence rates can be attributed to the heterogeneity of the study samples and variations in the

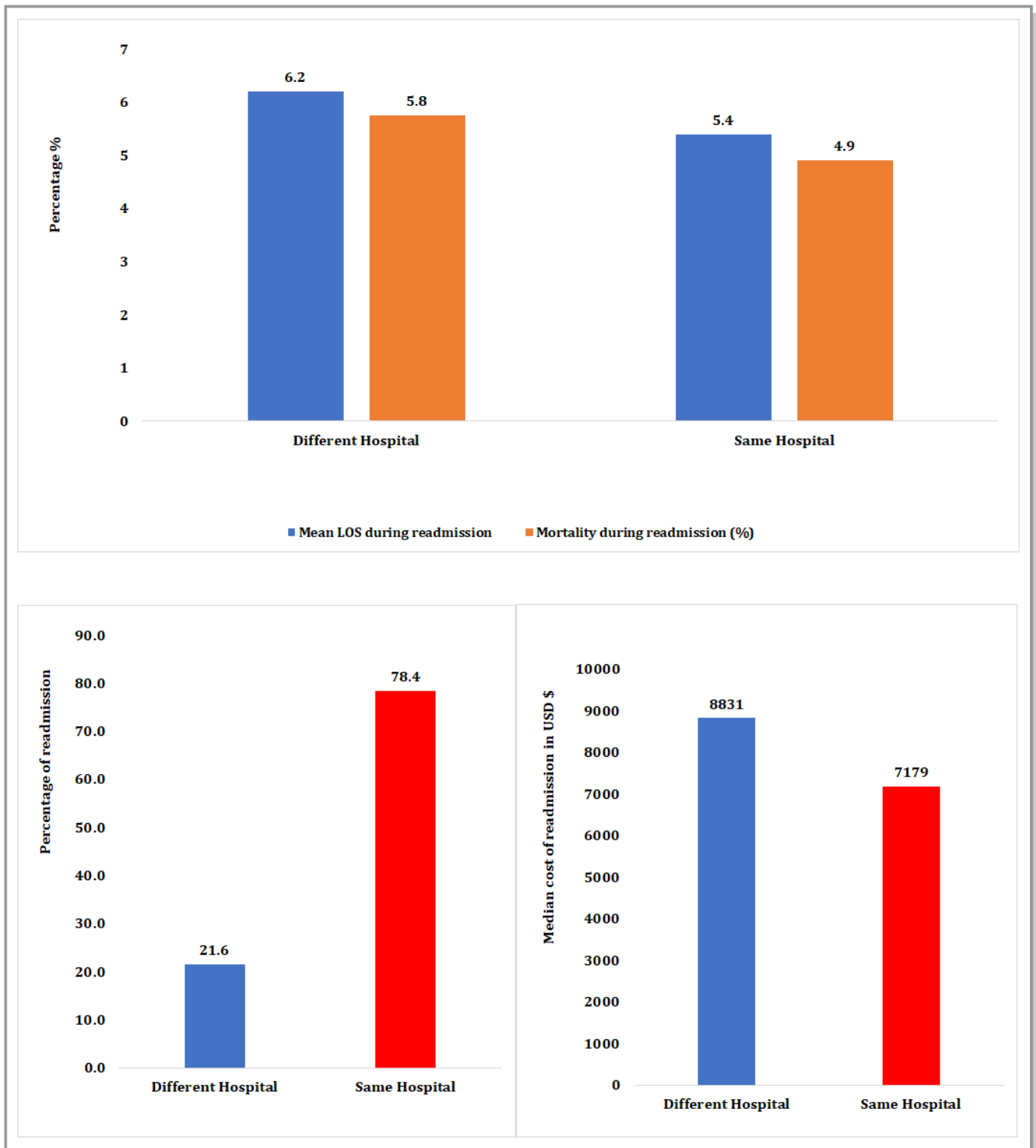


**Figure 2.** A, Yearly trends in 30-day readmission following atrial fibrillation-related hospitalization. B, Trends of readmission per day postdischarge from index hospitalization with atrial fibrillation.

frequency of rhythm assessment in these studies. A previous study by Munir et al reported heart failure as the most common cause for 30-day readmissions.<sup>8</sup> However, their study period was limited to only 1 year, which resulted in a smaller sample size. In contrast, we included 1.7 million of

AF-related hospitalization records spanning over a period of 5 years.

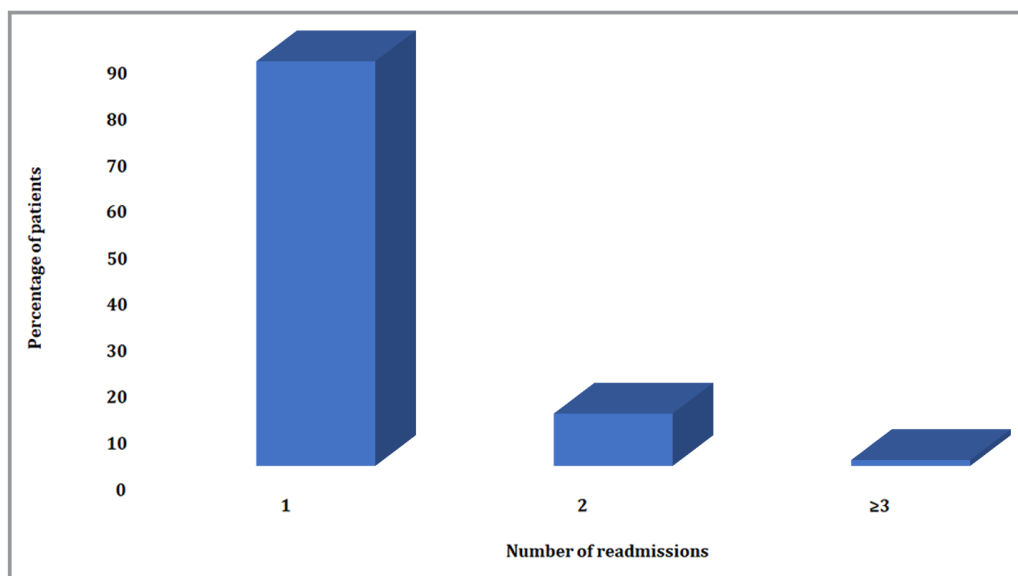
In our previous study, we analyzed the utilization of CHADS<sub>2</sub> and CHA<sub>2</sub>DS<sub>2</sub>-VASc scores as surrogate markers for predicting mortality and 30-day readmission risk.<sup>27</sup> We found



**Figure 3.** Outcomes related to same vs different hospital admission after index atrial fibrillation hospitalization. LOS indicates length of stay; USD, US dollars.

that chances of getting readmitted within 30 days increased with an increment in the risk profile of the patient. In the current study, we extend our previous work by studying other

predictors of 30-day readmission and cost of care. Advancing age was associated with increased risk of 30-day readmissions. This can be explained by the increasing burden of



**Figure 4.** Frequency of 30-day readmissions.

comorbidities and limited hemodynamic reserve in the elderly patient population resulting in a poor prognosis. Females were at higher odds of readmission compared with males after AF-related hospitalization. This can be attributed to the sex disparity in the treatment utilization as reported previously.<sup>28–30</sup> This provides an opportunity to focus attention on underlying biological and sociocultural mechanisms responsible for sex-specific differences and also identifies barriers in the delivery of effective treatment for AF.

Another important finding that merits discussion is the progressive decline in 30-day readmission rates during our study period. This observation is comparable with the previous study done by Freeman et al, who also reported a progressive decline in 30-day readmission rates of AF.<sup>7</sup> It may be related to the remarkable advances made in the treatment of AF. Particularly, electrical cardioversion and catheter ablation in AF have improved symptom burden and quality of life and also reduced the incidence of stroke and mortality.<sup>31,32</sup> There has been an increase in the utilization of antiarrhythmic drugs, changes in prescription pattern of anticoagulants with increased use of novel oral anticoagulants, and improvements in cardiac resynchronization therapy and permanent pacemakers.<sup>17,33,34</sup> All of these practices might have contributed to the declining rates of rehospitalization.

To our knowledge, this is the first study to explore the cost burden of AF-related readmissions from a national database. We noted a declining cost of care during our study period, which largely results from reduction in readmissions, attributable to increasing utilization and universal availability of effective treatment strategies.<sup>35</sup> Through our analysis, we noted a 3% increase in cost with readmission. An interesting finding of our study was the lower cost of care in the elderly

population (age  $\geq 80$  years), female patients, and weekend admissions. Underutilization of AF treatment modalities among these subgroups, as reported previously,<sup>36–39</sup> appears to be the principle reason behind lower cost of care noted in these patients. This study provides vital data and prediction modeling to identify a high-risk AF population that can be further targeted to implement customized transitional care and reduce preventable readmissions.

We noted improved outcomes when electrical cardioversion and catheter ablation were performed for AF during the index hospitalization. We believe that an early rhythm control strategy with these tools is underutilized. Our findings call for more-frequent implementation of electrical cardioversion and catheter ablation, especially in subpopulations with worse outcomes (ie, females, elderly patients).

Disparity in outcomes was also noted when patients were readmitted in hospitals other than the hospital of index hospitalization. Our findings are consistent with those noted by Lahewala et al.<sup>40</sup> Familiarity with the patient, smooth posthospitalization, and avoidance of unnecessary investigations appear to be driving factors for improved outcomes with the same hospital readmissions.

Finally, our results support the need for development of readmission prediction models that can identify patients at increased risk. Future prospective studies should investigate the preventability of 30-day readmissions after the index hospitalization for AF.

## Limitations

The findings of our study should be viewed in the context of the following limitations. The use of an administrative

database like the NRD is associated with risk of errors attributable to variations in coding practices. Only data related to readmission within 30 days after an index hospitalization are available. Information related to longitudinal follow-up of these patients are not available. Information related to race, ethnicity, and hospital regions are not reported in the NRD. The NRD does not include causes of death. Individual operator- and procedure-level data are not available. This study exclusively involves a US patient population; thus, results may not be applicable to other countries. The NRD does not include deaths out of the hospital or in the emergency room. Other factors that can affect a patient's prognosis, such as drugs, are not included in the database as well. The large sample size included in our study can partially offset some of these limitations, and the real-world clinical experience can add to the current existing literature.

## Conclusions

In this large, nationally representative study,  $\approx 1$  in 7 patients were readmitted within 30 days after the index hospitalization for AF. Cardiac conditions were the most common causes for readmission, and AF was the most common cardiac culprit. Our study demonstrated declining readmission rates and cost of care during the study period, possibly attributable to wide availability and utilization of effective treatment options. We propose a predictive model to identify the patients at high risk of 30-day readmission and high cost of care.

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The authors are solely responsible for the study design, conduct and analyses, drafting and editing of the manuscript, and its final contents. All authors had access to the data and a role in writing the manuscript.

## Disclosures

None.

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# SUPPLEMENTAL MATERIAL

**Table S1. Description of etiologies for 30-day readmission.**

<b>Causes of Readmission</b>	<b>Results</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>
<b>Total Readmission</b>				
<b>Cardiac causes/complication</b>	<b>52.60%</b>	<b>1</b>		
Heart failure	12.03%		A	
Arrhythmia			B	
<i>Atrial Fibrillation</i>	24.10%			I
<i>Atrial Flutter</i>	1.90%			III
<i>Heart block excluding 1st degree block</i>	0.13%			II
<i>Others</i>	4.34%			IV
Ischemic heart disease	3.21%		C	
Heart Valve disease	1.24%		D	
Hypertension	0.30%		E	
Hypotension/dizziness/syncope	1.76%		F	
Pericardial complications	0.59%		G	
Other cardiac complication	3.00%		H	
<b>Overall Vascular causes/complications</b>	<b>1.08%</b>	<b>2</b>		
<b>Infections</b>	<b>5.61%</b>	<b>3</b>		
Septicemia	3.20%		A	
<b>Pulmonary causes/complications</b>	<b>9.75%</b>	<b>4</b>		
Respiratory Failure	1.45%		A	
Chronic obstructive lung diseases	2.83%		B	
Pneumonia	3.95%		C	
Other respiratory causes/complications	1.52%		D	
<b>GI causes/complication</b>	<b>4.35%</b>	<b>5</b>		
<b>Neurological complications</b>	<b>3.87%</b>	<b>6</b>		
Ischemic Stroke/TIA	2.45%		A	
Other Neurological causes/complications	1.42%		B	
<b>Kidney or Urinary causes/complications</b>	<b>5.45%</b>	<b>7</b>		
Electrolyte imbalance	0.85%		A	
Acute/Acute on chronic kidney failure	2.29%		B	
Other kidney/urinary tract etiology/complication	2.31%		C	
<b>Hematology</b>	<b>1.53%</b>	<b>8</b>		
Anemia	0.80%		A	
Others	0.73%		B	
<b>Trauma/Fracture/poisoning</b>	<b>2.10%</b>	<b>9</b>		
<b>Endocrine causes</b>	<b>1.08%</b>	<b>10</b>		
Diabetes mellitus	0.74%		A	
Others	0.34%		B	
<b>Malignancy</b>	<b>1.94%</b>	<b>11</b>		
<b>Bleeding complications</b>	<b>4.10%</b>	<b>12</b>		
Gastrointestinal bleed	2.71%		A	
Intracranial bleed			B	
<i>Intracranial bleed without trauma</i>	0.22%			I
<i>Intracranial bleed with trauma</i>	0.22%			II
Other bleeding complications	0.95%		C	
<b>Psychiatry causes</b>	<b>1.52%</b>	<b>13</b>		
<b>Pulmonary Embolism (PE)/Deep Venous Thrombosis (DVT)</b>	<b>1.00%</b>	<b>14</b>		
<b>Others</b>	<b>4.14%</b>	<b>15</b>		

**Table S2. Description of ICD 9 CM codes for etiologies of 30-day readmission.**

DX1	COUNT	PERCENT	D	E	F	G
39891	34	0.03007572	Rheumatic heart failure (congestive)	1	A	
40201	25	0.0221145	Malignant hypertensive heart disease with heart failure	1	A	
40211	10	0.0088458	Benign hypertensive heart disease with heart failure	1	A	
40291	259	0.22910622	Unspecified hypertensive heart disease with heart failure	1	A	
40401	24	0.02122992	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	1	A	
40403	8	0.00707664	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease	1	A	
40411	10	0.0088458	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	1	A	
40413	6	0.00530748	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease	1	A	
40491	386	0.34144788	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	1	A	
40493	62	0.05484396	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease	1	A	
4280	3087	2.73069846	Congestive heart failure, unspecified	1	A	
4281	16	0.01415328	Left heart failure	1	A	
42820	129	0.11411082	Systolic heart failure, unspecified	1	A	
42821	586	0.51836388	Acute systolic heart failure	1	A	
42822	169	0.14949402	Chronic systolic heart failure	1	A	
42823	3225	2.8527705	Acute on chronic systolic heart failure	1	A	
42830	312	0.27598896	Diastolic heart failure, unspecified	1	A	
42831	830	0.7342014	Acute diastolic heart failure	1	A	
42832	126	0.11145708	Chronic diastolic heart failure	1	A	
42833	3183	2.81561814	Acute on chronic diastolic heart failure	1	A	
42840	43	0.03803694	Combined systolic and diastolic heart failure, unspecified	1	A	
42841	98	0.08668884	Acute combined systolic and diastolic heart failure	1	A	
42842	33	0.02919114	Chronic combined systolic and diastolic heart failure	1	A	
42843	935	0.8270823	Acute on chronic combined systolic and diastolic heart failure	1	A	
4289	4	0.00353832	Heart failure, unspecified	1	A	
42731	27245	24.1003821	Atrial fibrillation	1	B	I
4260	103	0.09111174	Atrioventricular block, complete	1	B	II
42610	10	0.0088458	Atrioventricular block, unspecified	1	B	II
42612	6	0.00530748	Mobitz (type) II atrioventricular block	1	B	II

42613	22	0.01946076	Other second degree atrioventricular block	1	B	II
4263	1	0.00088458	Other left bundle branch block	1	B	II
42652	1	0.00088458	Right bundle branch block and left anterior fascicular block	1	B	II
42653	2	0.00176916	Other bilateral bundle branch block	1	B	II
42654	2	0.00176916	Trifascicular block	1	B	II
4266	4	0.00353832	Other heart block	1	B	II
42732	2146	1.90	Atrial flutter	1	B	III
42611	6	0.00530748	First degree atrioventricular block	1	B	IV
4267	19	0.01680702	Anomalous atrioventricular excitation	1	B	IV
42681	2	0.00176916	Lown-Ganong-Levine syndrome	1	B	IV
42682	4	0.00353832	Long QT syndrome	1	B	IV
42689	6	0.00530748	Other specified conduction disorders	1	B	IV
4269	1	0.00088458	Conduction disorder, unspecified	1	B	IV
4270	232	0.20522256	Paroxysmal supraventricular tachycardia	1	B	IV
4271	585	0.5174793	Paroxysmal ventricular tachycardia	1	B	IV
4272	5	0.0044229	Paroxysmal tachycardia, unspecified	1	B	IV
42741	69	0.06103602	Ventricular fibrillation	1	B	IV
4275	8	0.00707664	Cardiac arrest	1	B	IV
42761	11	0.00973038	Supraventricular premature beats	1	B	IV
42769	22	0.01946076	Other premature beats	1	B	IV
42781	2450	2.167221	Sinoatrial node dysfunction	1	B	IV
42789	1463	1.29414054	Other specified cardiac dysrhythmias	1	B	IV
4279	21	0.01857618	Cardiac dysrhythmia, unspecified	1	B	IV
41001	11	0.00973038	Acute myocardial infarction of anterolateral wall, initial episode of care	1	C	
41011	42	0.03715236	Acute myocardial infarction of other anterior wall, initial episode of care	1	C	
41021	16	0.01415328	Acute myocardial infarction of inferolateral wall, initial episode of care	1	C	
41031	3	0.00265374	Acute myocardial infarction of inferoposterior wall, initial episode of care	1	C	
41040	1	0.00088458	Acute myocardial infarction of other inferior wall, episode of care unspecified	1	C	
41041	72	0.06368976	Acute myocardial infarction of other inferior wall, initial episode of care	1	C	
41042	1	0.00088458	Acute myocardial infarction of other inferior wall, subsequent episode of care	1	C	
41051	9	0.00796122	Acute myocardial infarction of other lateral wall, initial episode of care	1	C	
41061	1	0.00088458	True posterior wall infarction, initial episode of care	1	C	
41070	5	0.0044229	Subendocardial infarction, episode of care unspecified	1	C	
41071	1168	1.03318944	Subendocardial infarction, initial episode of care	1	C	
41072	11	0.00973038	Subendocardial infarction, subsequent episode of care	1	C	

41081	3	0.00265374	Acute myocardial infarction of other specified sites, initial episode of care	1	C
41090	2	0.00176916	Acute myocardial infarction of unspecified site, episode of care unspecified	1	C
41091	63	0.05572854	Acute myocardial infarction of unspecified site, initial episode of care	1	C
41092	1	0.00088458	Acute myocardial infarction of unspecified site, subsequent episode of care	1	C
4110	10	0.0088458	Postmyocardial infarction syndrome	1	C
4111	82	0.07253556	Intermediate coronary syndrome	1	C
41181	2	0.00176916	Acute coronary occlusion without myocardial infarction	1	C
41189	12	0.01061496	Other acute and subacute forms of ischemic heart disease, other	1	C
4131	7	0.00619206	Prinzmetal angina	1	C
4139	30	0.0265374	Other and unspecified angina pectoris	1	C
41400	145	0.1282641	Coronary atherosclerosis of unspecified type of vessel, native or graft	1	C
41401	1797	1.58959026	Coronary atherosclerosis of native coronary artery	1	C
41402	53	0.04688274	Coronary atherosclerosis of autologous vein bypass graft	1	C
41404	5	0.0044229	Coronary atherosclerosis of artery bypass graft	1	C
41405	5	0.0044229	Coronary atherosclerosis of unspecified bypass graft	1	C
41410	2	0.00176916	Aneurysm of heart (wall)	1	C
4148	63	0.05572854	Other specified forms of chronic ischemic heart disease	1	C
4149	4	0.00353832	Chronic ischemic heart disease, unspecified	1	C
3940	37	0.03272946	Mitral stenosis	1	D
3941	24	0.02122992	Rheumatic mitral insufficiency	1	D
3942	39	0.03449862	Mitral stenosis with insufficiency	1	D
3949	1	0.00088458	Other and unspecified mitral valve diseases	1	D
3959	1	0.00088458	Other and unspecified rheumatic aortic diseases	1	D
3960	19	0.01680702	Mitral valve stenosis and aortic valve stenosis	1	D
3961	7	0.00619206	Mitral valve stenosis and aortic valve insufficiency	1	D
3962	92	0.08138136	Mitral valve insufficiency and aortic valve stenosis	1	D
3963	70	0.0619206	Mitral valve insufficiency and aortic valve insufficiency	1	D
3968	32	0.02830656	Multiple involvement of mitral and aortic valves	1	D
3969	2	0.00176916	Mitral and aortic valve diseases, unspecified	1	D
3970	11	0.00973038	Diseases of tricuspid valve	1	D
4240	602	0.53251716	Mitral valve disorders	1	D
4241	450	0.398061	Aortic valve disorders	1	D
4242	1	0.00088458	Tricuspid valve disorders, specified as nonrheumatic	1	D
4243	1	0.00088458	Pulmonary valve disorders	1	D
42490	7	0.00619206	Endocarditis, valve unspecified, unspecified cause	1	D

7461	1	0.00088458	Tricuspid atresia and stenosis, congenital	1	D
7463	2	0.00176916	Congenital stenosis of aortic valve	1	D
7464	6	0.00530748	Congenital insufficiency of aortic valve	1	D
4010	113	0.09995754	Malignant essential hypertension	1	E
4011	4	0.00353832	Benign essential hypertension	1	E
4019	196	0.17337768	Unspecified essential hypertension	1	E
40200	7	0.00619206	Malignant hypertensive heart disease without heart failure	1	E
40210	1	0.00088458	Benign hypertensive heart disease without heart failure	1	E
40290	7	0.00619206	Unspecified hypertensive heart disease without heart failure	1	E
40501	1	0.00088458	Malignant renovascular hypertension	1	E
40591	2	0.00176916	Unspecified renovascular hypertension	1	E
4580	463	0.40956054	Orthostatic hypotension	1	F
4581	7	0.00619206	Chronic hypotension	1	F
45821	32	0.02830656	Hypotension of hemodialysis	1	F
45829	203	0.17956974	Other iatrogenic hypotension	1	F
4588	33	0.02919114	Other specified hypotension	1	F
4589	308	0.27245064	Hypotension, unspecified	1	F
7802	788	0.69704904	Syncope and collapse	1	F
7804	155	0.1371099	Dizziness and giddiness	1	F
3910	1	0.00088458	Acute rheumatic pericarditis	1	G
393	1	0.00088458	Chronic rheumatic pericarditis	1	G
42090	119	0.10526502	Acute pericarditis, unspecified	1	G
42091	48	0.04245984	Acute idiopathic pericarditis	1	G
42099	30	0.0265374	Other acute pericarditis	1	G
4230	57	0.05042106	Hemopericardium	1	G
4231	5	0.0044229	Adhesive pericarditis	1	G
4232	19	0.01680702	Constrictive pericarditis	1	G
4238	31	0.02742198	Other specified diseases of pericardium	1	G
4239	353	0.31225674	Unspecified disease of pericardium	1	G
390	2	0.00176916	Rheumatic fever without mention of heart involvement	1	H
3911	2	0.00176916	Acute rheumatic endocarditis	1	H
39890	1	0.00088458	Rheumatic heart disease, unspecified	1	H
4168	79	0.06988182	Other chronic pulmonary heart diseases	1	H
4169	9	0.00796122	Chronic pulmonary heart disease, unspecified	1	H
4210	53	0.04688274	Acute and subacute bacterial endocarditis	1	H

4219	1	0.00088458	Acute endocarditis, unspecified	1	H
42291	1	0.00088458	Idiopathic myocarditis	1	H
4233	4	0.00353832	Cardiac tamponade	1	H
4251	7	0.00619206	Hypertrophic cardiomyopathy	1	H
42511	20	0.0176916	Hypertrophic obstructive cardiomyopathy	1	H
42518	3	0.00265374	Other hypertrophic cardiomyopathy	1	H
4253	2	0.00176916	Endocardial fibroelastosis	1	H
4254	132	0.11676456	Other primary cardiomyopathies	1	H
4255	8	0.00707664	Alcoholic cardiomyopathy	1	H
4259	3	0.00265374	Secondary cardiomyopathy, unspecified	1	H
4290	1	0.00088458	Myocarditis, unspecified	1	H
4293	2	0.00176916	Cardiomegaly	1	H
4294	39	0.03449862	Functional disturbances following cardiac surgery	1	H
42979	2	0.00176916	Certain sequelae of myocardial infarction, not elsewhere classified, other	1	H
42983	25	0.0221145	Takotsubo syndrome	1	H
42989	18	0.01592244	Other ill-defined heart diseases	1	H
4299	1	0.00088458	Heart disease, unspecified	1	H
4599	1	0.00088458	Unspecified circulatory system disorder	1	H
7454	2	0.00176916	Ventricular septal defect	1	H
7455	11	0.00973038	Ostium secundum type atrial septal defect	1	H
74561	1	0.00088458	Ostium primum defect	1	H
74569	1	0.00088458	Other endocardial cushion defects	1	H
7458	2	0.00176916	Other bulbus cordis anomalies and anomalies of cardiac septal closure	1	H
7462	1	0.00088458	Ebstein's anomaly	1	H
74685	2	0.00176916	Coronary artery anomaly	1	H
74687	1	0.00088458	Malposition of heart and cardiac apex	1	H
74689	2	0.00176916	Other specified congenital anomalies of heart	1	H
7469	1	0.00088458	Unspecified congenital anomaly of heart	1	H
74742	1	0.00088458	Total anomalous pulmonary venous connection	1	H
7850	20	0.0176916	Tachycardia, unspecified	1	H
7851	77	0.06811266	Palpitations	1	H
78551	5	0.0044229	Cardiogenic shock	1	H
78650	606	0.53605548	Chest pain, unspecified	1	H
78651	44	0.03892152	Precordial pain	1	H
78659	1472	1.30210176	Other chest pain	1	H

79431	7	0.00619206	Nonspecific abnormal electrocardiogram [ECG] [EKG]	1	H	
79439	4	0.00353832	Other nonspecific abnormal results of function study of cardiovascular system	1	H	
7963	3	0.00265374	Nonspecific low blood pressure reading	1	H	
99600	1	0.00088458	Mechanical complication of unspecified cardiac device, implant, and graft	1	H	
99601	129	0.11411082	Mechanical complication due to cardiac pacemaker (electrode)	1	H	
99602	24	0.02122992	Mechanical complication due to heart valve prosthesis	1	H	
99604	96	0.08491968	Mechanical complication of automatic implantable cardiac defibrillator	1	H	
99609	7	0.00619206	Other mechanical complication of cardiac device, implant, and graft	1	H	
99661	139	0.12295662	Infection and inflammatory reaction due to cardiac device, implant, and graft	1	H	
99671	24	0.02122992	Other complications due to heart valve prosthesis	1	H	
99672	147	0.13003326	Other complications due to other cardiac device, implant, and graft	1	H	
99683	11	0.00973038	Complications of transplanted heart	1	H	
9971	133	0.11764914	Cardiac complications, not elsewhere classified	1	H	
4400	1	0.00088458	Atherosclerosis of aorta	2		
4401	15	0.0132687	Atherosclerosis of renal artery	2		
44020	32	0.02830656	Atherosclerosis of native arteries of the extremities, unspecified	2		
44021	33	0.02919114	Atherosclerosis of native arteries of the extremities with intermittent claudication	2		
44022	18	0.01592244	Atherosclerosis of native arteries of the extremities with rest pain	2		
44023	47	0.04157526	Atherosclerosis of native arteries of the extremities with ulceration	2		
44024	87	0.07695846	Atherosclerosis of native arteries of the extremities with gangrene	2		
44029	10	0.0088458	Other atherosclerosis of native arteries of the extremities	2		
44030	5	0.0044229	Atherosclerosis of unspecified bypass graft of the extremities	2		
44031	9	0.00796122	Atherosclerosis of autologous vein bypass graft of the extremities	2		
4408	4	0.00353832	Atherosclerosis of other specified arteries	2		
44100	1	0.00088458	Dissection of aorta, unspecified site	2		
44101	19	0.01680702	Dissection of aorta, thoracic	2		
44102	4	0.00353832	Dissection of aorta, abdominal	2		
44103	4	0.00353832	Dissection of aorta, thoracoabdominal	2		
4412	28	0.02476824	Thoracic aneurysm without mention of rupture	2		
4413	10	0.0088458	Abdominal aneurysm, ruptured	2		
4414	61	0.05395938	Abdominal aneurysm without mention of rupture	2		
4417	3	0.00265374	Thoracoabdominal aneurysm, without mention of rupture	2		
4419	1	0.00088458	Aortic aneurysm of unspecified site without mention of rupture	2		
4420	1	0.00088458	Aneurysm of artery of upper extremity	2		
4421	1	0.00088458	Aneurysm of renal artery	2		

4422	9	0.00796122	Aneurysm of iliac artery	2		
4423	32	0.02830656	Aneurysm of artery of lower extremity	2		
44284	3	0.00265374	Aneurysm of other visceral artery	2		
44289	2	0.00176916	Aneurysm of other specified artery	2		
4429	1	0.00088458	Aneurysm of unspecified site	2		
4430	2	0.00176916	Raynaud's syndrome	2		
4431	1	0.00088458	Thromboangiitis obliterans [Buerger's disease]	2		
44322	1	0.00088458	Dissection of iliac artery	2		
44382	1	0.00088458	Erythromelalgia	2		
44389	3	0.00265374	Other specified peripheral vascular diseases	2		
4439	30	0.0265374	Peripheral vascular disease, unspecified	2		
4440	3	0.00265374	Embolism and thrombosis of abdominal aorta	2		
44401	1	0.00088458	Saddle embolus of abdominal aorta	2		
44409	1	0.00088458	Other arterial embolism and thrombosis of abdominal aorta	2		
44421	49	0.04334442	Arterial embolism and thrombosis of upper extremity	2		
44422	148	0.13091784	Arterial embolism and thrombosis of lower extremity	2		
44481	9	0.00796122	Embolism and thrombosis of iliac artery	2		
44489	12	0.01061496	Embolism and thrombosis of other specified artery	2		
44502	3	0.00265374	Atheroembolism of lower extremity	2		
44581	2	0.00176916	Atheroembolism of kidney	2		
4460	4	0.00353832	Polyarteritis nodosa	2		
44620	2	0.00176916	Hypersensitivity angiitis, unspecified	2		
44629	5	0.0044229	Other specified hypersensitivity angiitis	2		
4464	6	0.00530748	Wegener's granulomatosis	2		
4465	10	0.0088458	Giant cell arteritis	2		
4470	6	0.00530748	Arteriovenous fistula, acquired	2		
4471	5	0.0044229	Stricture of artery	2		
4474	4	0.00353832	Celiac artery compression syndrome	2		
4476	12	0.01061496	Arteritis, unspecified	2		
44770	1	0.00088458	Aortic ectasia, unspecified site	2		
4478	1	0.00088458	Other specified disorders of arteries and arterioles	2		
4510	2	0.00176916	Phlebitis and thrombophlebitis of superficial vessels of lower extremities	2		
45111	3	0.00265374	Phlebitis and thrombophlebitis of femoral vein (deep) (superficial)	2		
45119	1	0.00088458	Phlebitis and thrombophlebitis of deep veins of lower extremities, other	2		
4512	1	0.00088458	Phlebitis and thrombophlebitis of lower extremities, unspecified	2		

45182	12	0.01061496	Phlebitis and thrombophlebitis of superficial veins of upper extremities	2		
45183	1	0.00088458	Phlebitis and thrombophlebitis of deep veins of upper extremities	2		
45184	7	0.00619206	Phlebitis and thrombophlebitis of upper extremities, unspecified	2		
45189	1	0.00088458	Phlebitis and thrombophlebitis of other sites	2		
452	5	0.0044229	Portal vein thrombosis	2		
4530	1	0.00088458	Budd-chiari syndrome	2		
4536	9	0.00796122	Venous embolism and thrombosis of superficial vessels of lower extremity	2		
45381	4	0.00353832	Acute venous embolism and thrombosis of superficial veins of upper extremity	2		
4548	3	0.00265374	Varicose veins of lower extremities with other complications	2		
74749	1	0.00088458	Other anomalies of great veins	2		
74761	10	0.0088458	Gastrointestinal vessel anomaly	2		
74769	1	0.00088458	Anomalies of other specified sites of peripheral vascular system	2		
74781	1	0.00088458	Anomalies of cerebrovascular system	2		
9961	33	0.02919114	Mechanical complication of other vascular device, implant, and graft	2		
99662	98	0.08668884	Infection and inflammatory reaction due to other vascular device, implant, and graft	2		
99674	58	0.05130564	Other complications due to other vascular device, implant, and graft	2		
9972	180	0.1592244	Peripheral vascular complications, not elsewhere classified	2		
99772	2	0.00176916	Vascular complications of renal artery	2		
99779	3	0.00265374	Vascular complications of other vessels	2		
9992	20	0.0176916	Other vascular complications of medical care, not elsewhere classified	2		
0030	4	0.00353832	Salmonella gastroenteritis	3		
0031	2	0.00176916	Salmonella septicemia	3		
0039	1	0.00088458	Salmonella infection, unspecified	3		
0049	1	0.00088458	Shigellosis, unspecified	3		
0059	11	0.00973038	Food poisoning, unspecified	3		
0071	2	0.00176916	Giardiasis	3		
0074	1	0.00088458	Intestinal trichomoniasis	3		
00841	1	0.00088458	Intestinal infection due to staphylococcus	3		
00842	5	0.0044229	Intestinal infection due to pseudomonas	3		
00843	3	0.00265374	Intestinal infection due to campylobacter	3		
00845	626	0.55374708	Intestinal infection due to Clostridium difficile	3		
00846	1	0.00088458	Intestinal infection due to other anaerobes	3		
00849	1	0.00088458	Intestinal infection due to other organisms	3		
0085	4	0.00353832	Bacterial enteritis, unspecified	3		
00861	1	0.00088458	Enteritis due to rotavirus	3		

00863	2	0.00176916	Enteritis due to norwalk virus	3		
00869	3	0.00265374	Enteritis due to other viral enteritis	3		
0088	105	0.0928809	Intestinal infection due to other organism, not elsewhere classified	3		
0090	25	0.0221145	Infectious colitis, enteritis, and gastroenteritis	3		
0091	5	0.0044229	Colitis, enteritis, and gastroenteritis of presumed infectious origin	3		
0092	5	0.0044229	Infectious diarrhea	3		
01143	1	0.00088458	Tuberculous fibrosis of lung, tubercle bacilli found (in sputum) by microscopy	3		
01154	1	0.00088458	Tuberculous bronchiectasis, tubercle bacilli not found (in sputum) by microscopy, but found by bacterial culture	3		
01180	1	0.00088458	Other specified pulmonary tuberculosis, unspecified	3		
01183	1	0.00088458	Other specified pulmonary tuberculosis, tubercle bacilli found (in sputum) by microscopy	3		
01190	2	0.00176916	Pulmonary tuberculosis, unspecified, unspecified	3		
01192	1	0.00088458	Pulmonary tuberculosis, unspecified, bacteriological or histological examination unknown (at present)	3		
01194	4	0.00353832	Pulmonary tuberculosis, unspecified, tubercle bacilli not found (in sputum) by microscopy, but found by bacterial culture	3		
01204	1	0.00088458	Tuberculous pleurisy, tubercle bacilli not found (in sputum) by microscopy, but found by bacterial culture	3		
01334	1	0.00088458	Tuberculous abscess of brain, tubercle bacilli not found (in sputum) by microscopy, but found by bacterial culture	3		
0270	4	0.00353832	Listeriosis	3		
0310	3	0.00265374	Pulmonary diseases due to other mycobacteria	3		
0312	4	0.00353832	Disseminated due to other mycobacteria	3		
0340	1	0.00088458	Streptococcal sore throat	3		
035	1	0.00088458	Erysipelas	3		
0391	6	0.00530748	Pulmonary actinomycotic infection	3		
04112	1	0.00088458	Methicillin resistant Staphylococcus aureus in conditions classified elsewhere and of unspecified site	3		
042	16	0.01415328	Human immunodeficiency virus [HIV] disease	3		
04619	3	0.00265374	Other and unspecified Creutzfeldt-Jakob disease	3		
0463	1	0.00088458	Progressive multifocal leukoencephalopathy	3		
0479	1	0.00088458	Unspecified viral meningitis	3		
0498	1	0.00088458	Other specified non-arthropod-borne viral diseases of central nervous system	3		
0499	1	0.00088458	Unspecified non-arthropod-borne viral diseases of central nervous system	3		
0521	2	0.00176916	Varicella (hemorrhagic) pneumonitis	3		
05312	2	0.00176916	Postherpetic trigeminal neuralgia	3		
05319	8	0.00707664	Herpes zoster with other nervous system complications	3		
05320	1	0.00088458	Herpes zoster dermatitis of eyelid	3		
05321	1	0.00088458	Herpes zoster keratoconjunctivitis	3		

05379	2	0.00176916	Herpes zoster with other specified complications	3		
0538	1	0.00088458	Herpes zoster with unspecified complication	3		
0539	13	0.01149954	Herpes zoster without mention of complication	3		
05410	1	0.00088458	Genital herpes, unspecified	3		
0542	1	0.00088458	Herpetic gingivostomatitis	3		
0543	1	0.00088458	Herpetic meningoencephalitis	3		
05479	2	0.00176916	Herpes simplex with other specified complications	3		
0661	3	0.00265374	Tick-borne fever	3		
06642	1	0.00088458	West Nile Fever with other neurologic manifestation	3		
07022	1	0.00088458	Chronic viral hepatitis B with hepatic coma without hepatitis delta	3		
07030	1	0.00088458	Viral hepatitis B without mention of hepatic coma, acute or unspecified, without mention of hepatitis delta	3		
07041	1	0.00088458	Acute hepatitis C with hepatic coma	3		
07044	14	0.01238412	Chronic hepatitis C with hepatic coma	3		
07054	6	0.00530748	Chronic hepatitis C without mention of hepatic coma	3		
07070	4	0.00353832	Unspecified viral hepatitis C without hepatic coma	3		
07071	21	0.01857618	Unspecified viral hepatitis C with hepatic coma	3		
07421	1	0.00088458	Coxsackie pericarditis	3		
075	1	0.00088458	Infectious mononucleosis	3		
0785	5	0.0044229	Cytomegaloviral disease	3		
07889	2	0.00176916	Other specified diseases due to viruses	3		
0793	1	0.00088458	Rhinovirus infection in conditions classified elsewhere and of unspecified site	3		
0796	3	0.00265374	Respiratory syncytial virus (RSV)	3		
07989	1	0.00088458	Other specified viral infection	3		
07999	29	0.02565282	Unspecified viral infection	3		
08240	4	0.00353832	Ehrlichiosis, unspecified	3		
08881	3	0.00265374	Lyme Disease	3		
08882	1	0.00088458	Babesiosis	3		
0940	2	0.00176916	Tabes dorsalis	3		
096	1	0.00088458	Late syphilis, latent	3		
0979	1	0.00088458	Syphilis, unspecified	3		
0993	1	0.00088458	Reiter's disease	3		
1104	1	0.00088458	Dermatophytosis of foot	3		
1120	4	0.00353832	Candidiasis of mouth	3		
1121	1	0.00088458	Candidiasis of vulva and vagina	3		
1122	39	0.03449862	Candidiasis of other urogenital sites	3		

1123	1	0.00088458	Candidiasis of skin and nails	3		
1124	9	0.00796122	Candidiasis of lung	3		
1125	9	0.00796122	Disseminated candidiasis	3		
11284	31	0.02742198	Candidal esophagitis	3		
11285	2	0.00176916	Candidal enteritis	3		
1140	4	0.00353832	Primary coccidioidomycosis (pulmonary)	3		
11590	1	0.00088458	Histoplasmosis, unspecified, without mention of manifestation	3		
1173	12	0.01061496	Aspergillosis	3		
1175	3	0.00265374	Cryptococcosis	3		
1179	6	0.00530748	Other and unspecified mycoses	3		
1239	1	0.00088458	Cestode infection, unspecified	3		
1272	1	0.00088458	Anisakiasis	3		
1330	2	0.00176916	Scabies	3		
1340	1	0.00088458	Myiasis	3		
1363	5	0.0044229	Pneumocystosis	3		
1369	2	0.00176916	Unspecified infectious and parasitic diseases	3		
138	1	0.00088458	Late effects of acute poliomyelitis	3		
3202	1	0.00088458	Streptococcal meningitis	3		
3229	2	0.00176916	Meningitis, unspecified	3		
3240	3	0.00265374	Intracranial abscess	3		
3241	5	0.0044229	Intraspinal abscess	3		
36230	2	0.00176916	Retinal vascular occlusion, unspecified	3		
36231	2	0.00176916	Central retinal artery occlusion	3		
36232	1	0.00088458	Retinal arterial branch occlusion	3		
36234	1	0.00088458	Transient retinal arterial occlusion	3		
36235	1	0.00088458	Central retinal vein occlusion	3		
37313	2	0.00176916	Abscess of eyelid	3		
47821	1	0.00088458	Cellulitis of pharynx or nasopharynx	3		
47822	1	0.00088458	Parapharyngeal abscess	3		
47824	2	0.00176916	Retropharyngeal abscess	3		
4870	29	0.02565282	Influenza with pneumonia	3		
4871	26	0.02299908	Influenza with other respiratory manifestations	3		
4878	1	0.00088458	Influenza with other manifestations	3		
48882	7	0.00619206	Influenza due to identified novel influenza A virus with other respiratory manifestations	3		
48889	1	0.00088458	Influenza due to identified novel influenza A virus with other manifestations	3		

6012	1	0.00088458	Abscess of prostate	3		
68100	5	0.0044229	Cellulitis and abscess of finger, unspecified	3		
68110	12	0.01061496	Cellulitis and abscess of toe, unspecified	3		
6820	18	0.01592244	Cellulitis and abscess of face	3		
6821	3	0.00265374	Cellulitis and abscess of neck	3		
6822	64	0.05661312	Cellulitis and abscess of trunk	3		
6823	75	0.0663435	Cellulitis and abscess of upper arm and forearm	3		
6824	37	0.03272946	Cellulitis and abscess of hand, except fingers and thumb	3		
6825	17	0.01503786	Cellulitis and abscess of buttock	3		
6826	606	0.53605548	Cellulitis and abscess of leg, except foot	3		
6827	87	0.07695846	Cellulitis and abscess of foot, except toes	3		
6828	5	0.0044229	Cellulitis and abscess of other specified sites	3		
6829	3	0.00265374	Cellulitis and abscess of unspecified sites	3		
73004	2	0.00176916	Acute osteomyelitis, hand	3		
73005	2	0.00176916	Acute osteomyelitis, pelvic region and thigh	3		
73007	1	0.00088458	Acute osteomyelitis, ankle and foot	3		
73008	4	0.00353832	Acute osteomyelitis, other specified sites	3		
73015	2	0.00176916	Chronic osteomyelitis, pelvic region and thigh	3		
73016	5	0.0044229	Chronic osteomyelitis, lower leg	3		
73017	6	0.00530748	Chronic osteomyelitis, ankle and foot	3		
73018	1	0.00088458	Chronic osteomyelitis, other specified sites	3		
73021	2	0.00176916	Unspecified osteomyelitis, shoulder region	3		
73023	1	0.00088458	Unspecified osteomyelitis, forearm	3		
73025	4	0.00353832	Unspecified osteomyelitis, pelvic region and thigh	3		
73026	3	0.00265374	Unspecified osteomyelitis, lower leg	3		
73027	29	0.02565282	Unspecified osteomyelitis, ankle and foot	3		
73028	10	0.0088458	Unspecified osteomyelitis, other specified sites	3		
7907	78	0.06899724	Bacteremia	3		
99590	3	0.00265374	Systemic inflammatory response syndrome, unspecified	3		
99593	1	0.00088458	Systemic inflammatory response syndrome due to noninfectious process without acute organ dysfunction	3		
99762	19	0.01680702	Infection (chronic) of amputation stump	3		
99859	270	0.2388366	Other postoperative infection	3		
99931	60	0.0530748	Other and unspecified infection due to central venous catheter	3		
99932	55	0.0486519	Bloodstream infection due to central venous catheter	3		
99933	9	0.00796122	Local infection due to central venous catheter	3		

99939	35	0.0309603	Infection following other infusion, injection, transfusion, or vaccination	3		
0380	143	0.12649494	Streptococcal septicemia	3	A	
03810	13	0.01149954	Staphylococcal septicemia, unspecified	3	A	
03811	70	0.0619206	Methicillin susceptible Staphylococcus aureus septicemia	3	A	
03812	96	0.08491968	Methicillin resistant Staphylococcus aureus septicemia	3	A	
03819	37	0.03272946	Other staphylococcal septicemia	3	A	
0382	19	0.01680702	Pneumococcal septicemia [Streptococcus pneumoniae septicemia]	3	A	
0383	34	0.03007572	Septicemia due to anaerobes	3	A	
03840	25	0.0221145	Septicemia due to gram-negative organism, unspecified	3	A	
03841	4	0.00353832	Septicemia due to hemophilus influenzae [H. influenzae]	3	A	
03842	251	0.22202958	Septicemia due to escherichia coli [E. coli]	3	A	
03843	46	0.04069068	Septicemia due to pseudomonas	3	A	
03844	6	0.00530748	Septicemia due to serratia	3	A	
03849	144	0.12737952	Other septicemia due to gram-negative organisms	3	A	
0388	48	0.04245984	Other specified septicemias	3	A	
0389	2646	2.34059868	Unspecified septicemia	3	A	
99592	1	0.00088458	Severe sepsis	3	A	
51851	9	0.00796122	Acute respiratory failure following trauma and surgery	4	A	
51881	990	0.8757342	Acute respiratory failure	4	A	
51882	6	0.00530748	Other pulmonary insufficiency, not elsewhere classified	4	A	
51883	15	0.0132687	Chronic respiratory failure	4	A	
51884	624	0.55197792	Acute and chronic respiratory failure	4	A	
4660	162	0.14330196	Acute bronchitis	4	B	
490	62	0.05484396	Bronchitis, not specified as acute or chronic	4	B	
4911	2	0.00176916	Mucopurulent chronic bronchitis	4	B	
49120	23	0.02034534	Obstructive chronic bronchitis without exacerbation	4	B	
49121	2014	1.78154412	Obstructive chronic bronchitis with (acute) exacerbation	4	B	
49122	390	0.3449862	Obstructive chronic bronchitis with acute bronchitis	4	B	
4918	1	0.00088458	Other chronic bronchitis	4	B	
4920	2	0.00176916	Emphysematous bleb	4	B	
4928	16	0.01415328	Other emphysema	4	B	
49302	2	0.00176916	Extrinsic asthma with (acute) exacerbation	4	B	
49312	1	0.00088458	Intrinsic asthma with (acute) exacerbation	4	B	
49320	23	0.02034534	Chronic obstructive asthma, unspecified	4	B	
49321	1	0.00088458	Chronic obstructive asthma with status asthmaticus	4	B	

49322	358	0.31667964	Chronic obstructive asthma with (acute) exacerbation	4	B
49390	17	0.01503786	Asthma, unspecified type, unspecified	4	B
49391	2	0.00176916	Asthma, unspecified type, with status asthmaticus	4	B
49392	87	0.07695846	Asthma, unspecified type, with (acute) exacerbation	4	B
4940	5	0.0044229	Bronchiectasis without acute exacerbation	4	B
4941	29	0.02565282	Bronchiectasis with acute exacerbation	4	B
5181	2	0.00176916	Interstitial emphysema	4	B
4801	5	0.0044229	Pneumonia due to respiratory syncytial virus	4	C
4802	2	0.00176916	Pneumonia due to parainfluenza virus	4	C
4808	7	0.00619206	Pneumonia due to other virus not elsewhere classified	4	C
4809	16	0.01415328	Viral pneumonia, unspecified	4	C
481	33	0.02919114	Pneumococcal pneumonia [Streptococcus pneumoniae pneumonia]	4	C
4820	15	0.0132687	Pneumonia due to Klebsiella pneumoniae	4	C
4821	54	0.04776732	Pneumonia due to Pseudomonas	4	C
4822	5	0.0044229	Pneumonia due to Hemophilus influenzae [H. influenzae]	4	C
48230	11	0.00973038	Pneumonia due to Streptococcus, unspecified	4	C
48232	1	0.00088458	Pneumonia due to Streptococcus, group B	4	C
48239	1	0.00088458	Pneumonia due to other Streptococcus	4	C
48240	3	0.00265374	Pneumonia due to Staphylococcus, unspecified	4	C
48241	14	0.01238412	Methicillin susceptible pneumonia due to Staphylococcus aureus	4	C
48242	94	0.08315052	Methicillin resistant pneumonia due to Staphylococcus aureus	4	C
48249	2	0.00176916	Other Staphylococcus pneumonia	4	C
48281	1	0.00088458	Pneumonia due to anaerobes	4	C
48282	9	0.00796122	Pneumonia due to escherichia coli [E. coli]	4	C
48283	91	0.08049678	Pneumonia due to other gram-negative bacteria	4	C
48284	1	0.00088458	Pneumonia due to Legionnaires' disease	4	C
48289	8	0.00707664	Pneumonia due to other specified bacteria	4	C
4829	86	0.07607388	Bacterial pneumonia, unspecified	4	C
4830	10	0.0088458	Pneumonia due to mycoplasma pneumoniae	4	C
4831	1	0.00088458	Pneumonia due to chlamydia	4	C
4838	3	0.00265374	Pneumonia due to other specified organism	4	C
485	25	0.0221145	Bronchopneumonia, organism unspecified	4	C
486	3181	2.81384898	Pneumonia, organism unspecified	4	C
48801	1	0.00088458	Influenza due to identified avian influenza virus with pneumonia	4	C
48811	2	0.00176916	Influenza due to identified 2009 H1N1 influenza virus with pneumonia	4	C

48881	1	0.00088458	Influenza due to identified novel influenza A virus with pneumonia	4	C
4958	3	0.00265374	Other specified allergic alveolitis and pneumonitis	4	C
4959	9	0.00796122	Unspecified allergic alveolitis and pneumonitis	4	C
5070	767	0.67847286	Pneumonitis due to inhalation of food or vomitus	4	C
5078	2	0.00176916	Pneumonitis due to other solids and liquids	4	C
51633	4	0.00353832	Acute interstitial pneumonitis	4	C
27803	11	0.00973038	Obesity hypoventilation syndrome	4	D
32723	17	0.01503786	Obstructive sleep apnea (adult)(pediatric)	4	D
32724	1	0.00088458	Idiopathic sleep related non-obstructive alveolar hypoventilation	4	D
4150	19	0.01680702	Acute cor pulmonale	4	D
4160	8	0.00707664	Primary pulmonary hypertension	4	D
4610	1	0.00088458	Acute maxillary sinusitis	4	D
4611	1	0.00088458	Acute frontal sinusitis	4	D
4618	1	0.00088458	Other acute sinusitis	4	D
4619	1	0.00088458	Acute sinusitis, unspecified	4	D
463	1	0.00088458	Acute tonsillitis	4	D
46400	1	0.00088458	Acute laryngitis without mention of obstruction	4	D
46410	1	0.00088458	Acute tracheitis without mention of obstruction	4	D
46430	1	0.00088458	Acute epiglottitis without mention of obstruction	4	D
4659	23	0.02034534	Acute upper respiratory infections of unspecified site	4	D
46619	7	0.00619206	Acute bronchiolitis due to other infectious organisms	4	D
4730	4	0.00353832	Chronic maxillary sinusitis	4	D
4731	1	0.00088458	Chronic frontal sinusitis	4	D
4739	1	0.00088458	Unspecified sinusitis (chronic)	4	D
47400	1	0.00088458	Chronic tonsillitis	4	D
496	84	0.07430472	Chronic airway obstruction, not elsewhere classified	4	D
501	1	0.00088458	Asbestosis	4	D
502	1	0.00088458	Pneumoconiosis due to other silica or silicates	4	D
5060	2	0.00176916	Bronchitis and pneumonitis due to fumes and vapors	4	D
5063	2	0.00176916	Other acute and subacute respiratory conditions due to fumes and vapors	4	D
5080	16	0.01415328	Acute pulmonary manifestations due to radiation	4	D
5081	1	0.00088458	Chronic and other pulmonary manifestations due to radiation	4	D
5082	1	0.00088458	Respiratory conditions due to smoke inhalation	4	D
5100	1	0.00088458	Empyema with fistula	4	D
5109	30	0.0265374	Empyema without mention of fistula	4	D

5110	12	0.01061496	Pleurisy without mention of effusion or current tuberculosis	4	D	
5111	4	0.00353832	Pleurisy with effusion, with mention of a bacterial cause other than tuberculosis	4	D	
51181	72	0.06368976	Malignant pleural effusion	4	D	
51189	63	0.05572854	Other specified forms of effusion, except tuberculous	4	D	
5119	541	0.47855778	Unspecified pleural effusion	4	D	
5120	3	0.00265374	Spontaneous tension pneumothorax	4	D	
5121	47	0.04157526	Iatrogenic pneumothorax	4	D	
5122	1	0.00088458	Postoperative air leak	4	D	
5128	12	0.01061496	Oth pneumothorax and air leak	4	D	
51281	1	0.00088458	Primary spontaneous pneumothorax	4	D	
51284	1	0.00088458	Other air leak	4	D	
51289	22	0.01946076	Other pneumothorax	4	D	
5130	14	0.01238412	Abscess of lung	4	D	
514	63	0.05572854	Pulmonary congestion and hypostasis	4	D	
515	111	0.09818838	Postinflammatory pulmonary fibrosis	4	D	
5163	6	0.00530748	Idiopathic interstitial pneumonia	4	D	
51630	2	0.00176916	Idiopathic interstitial pneumonia, not otherwise specified	4	D	
51631	11	0.00973038	Idiopathic pulmonary fibrosis	4	D	
51636	4	0.00353832	Cryptogenic organizing pneumonia	4	D	
5168	21	0.01857618	Other specified alveolar and parietoalveolar pneumonopathies	4	D	
5180	24	0.02122992	Pulmonary collapse	4	D	
5183	6	0.00530748	Pulmonary eosinophilia	4	D	
5184	46	0.04069068	Acute edema of lung, unspecified	4	D	
51852	2	0.00176916	Other pulmonary insufficiency, not elsewhere classified, following trauma and surgery	4	D	
5186	3	0.00265374	Allergic bronchopulmonary aspergillosis	4	D	
51889	23	0.02034534	Other diseases of lung, not elsewhere classified	4	D	
51902	4	0.00353832	Mechanical complication of tracheostomy	4	D	
51909	7	0.00619206	Other tracheostomy complications	4	D	
51911	5	0.0044229	Acute bronchospasm	4	D	
51919	7	0.00619206	Other diseases of trachea and bronchus	4	D	
5192	2	0.00176916	Mediastinitis	4	D	
5193	1	0.00088458	Other diseases of mediastinum, not elsewhere classified	4	D	
5194	5	0.0044229	Disorders of diaphragm	4	D	
5198	3	0.00265374	Other diseases of respiratory system, not elsewhere classified	4	D	
5225	4	0.00353832	Periapical abscess without sinus	4	D	

74860	1	0.00088458	Anomaly of lung, unspecified	4	D	
78053	1	0.00088458	Hypersomnia with sleep apnea, unspecified	4	D	
78057	1	0.00088458	Unspecified sleep apnea	4	D	
78605	116	0.10261128	Shortness of breath	4	D	
78609	87	0.07695846	Other respiratory abnormalities	4	D	
7862	7	0.00619206	Cough	4	D	
78652	52	0.04599816	Painful respiration	4	D	
7869	1	0.00088458	Other symptoms involving respiratory system and chest	4	D	
7931	1	0.00088458	Nonspecific (abnormal) findings on radiological and other examination of lung field	4	D	
79311	1	0.00088458	Solitary pulmonary nodule	4	D	
79319	2	0.00176916	Other nonspecific abnormal finding of lung field	4	D	
79902	37	0.03272946	Hypoxemia	4	D	
94115	1	0.00088458	Erythema [first degree] of nose (septum)	4	D	
99684	10	0.0088458	Complications of transplanted lung	4	D	
4550	1	0.00088458	Internal hemorrhoids without mention of complication	5		
4551	2	0.00176916	Internal thrombosed hemorrhoids	5		
4552	103	0.09111174	Internal hemorrhoids with other complication	5		
4554	1	0.00088458	External thrombosed hemorrhoids	5		
4555	14	0.01238412	External hemorrhoids with other complication	5		
4558	46	0.04069068	Unspecified hemorrhoids with other complication	5		
4561	1	0.00088458	Esophageal varices without mention of bleeding	5		
5300	9	0.00796122	Achalasia and cardiospasm	5		
53010	17	0.01503786	Esophagitis, unspecified	5		
53011	17	0.01503786	Reflux esophagitis	5		
53012	8	0.00707664	Acute esophagitis	5		
53013	1	0.00088458	Eosinophilic esophagitis	5		
53019	55	0.0486519	Other esophagitis	5		
53020	25	0.0221145	Ulcer of esophagus without bleeding	5		
5303	39	0.03449862	Stricture and stenosis of esophagus	5		
5304	3	0.00265374	Perforation of esophagus	5		
5305	16	0.01415328	Dyskinesia of esophagus	5		
5306	9	0.00796122	Diverticulum of esophagus, acquired	5		
53081	148	0.13091784	Esophageal reflux	5		
53084	3	0.00265374	Tracheoesophageal fistula	5		
53085	9	0.00796122	Barrett's esophagus	5		

53089	7	0.00619206	Other specified disorders of esophagus	5		
53130	3	0.00265374	Acute gastric ulcer without mention of hemorrhage or perforation, without mention of obstruction	5		
53150	7	0.00619206	Chronic or unspecified gastric ulcer with perforation, without mention of obstruction	5		
53160	1	0.00088458	Chronic or unspecified gastric ulcer with hemorrhage and perforation, without mention of obstruction	5		
53190	32	0.02830656	Gastric ulcer, unspecified as acute or chronic, without mention of hemorrhage or perforation, without mention of obstruction	5		
53191	2	0.00176916	Gastric ulcer, unspecified as acute or chronic, without mention of hemorrhage or perforation, with obstruction	5		
53210	2	0.00176916	Acute duodenal ulcer with perforation, without mention of obstruction	5		
53220	1	0.00088458	Acute duodenal ulcer with hemorrhage and perforation, without mention of obstruction	5		
53250	7	0.00619206	Chronic or unspecified duodenal ulcer with perforation, without mention of obstruction	5		
53290	18	0.01592244	Duodenal ulcer, unspecified as acute or chronic, without hemorrhage or perforation, without mention of obstruction	5		
53291	2	0.00176916	Duodenal ulcer, unspecified as acute or chronic, without mention of hemorrhage or perforation, with obstruction	5		
53390	6	0.00530748	Peptic ulcer of unspecified site, unspecified as acute or chronic, without mention of hemorrhage or perforation, without mention of obstruction	5		
53490	1	0.00088458	Gastrojejunal ulcer, unspecified as acute or chronic, without mention of hemorrhage or perforation, without mention of obstruction	5		
53500	27	0.02388366	Acute gastritis, without mention of hemorrhage	5		
53510	18	0.01592244	Atrophic gastritis, without mention of hemorrhage	5		
53530	11	0.00973038	Alcoholic gastritis, without mention of hemorrhage	5		
53540	55	0.0486519	Other specified gastritis, without mention of hemorrhage	5		
53550	94	0.08315052	Unspecified gastritis and gastroduodenitis, without mention of hemorrhage	5		
53560	9	0.00796122	Duodenitis, without mention of hemorrhage	5		
5362	40	0.0353832	Persistent vomiting	5		
5363	37	0.03272946	Gastroparesis	5		
53640	1	0.00088458	Gastrostomy complication, unspecified	5		
53641	20	0.0176916	Infection of gastrostomy	5		
53642	16	0.01415328	Mechanical complication of gastrostomy	5		
53649	24	0.02122992	Other gastrostomy complications	5		
5368	7	0.00619206	Dyspepsia and other specified disorders of function of stomach	5		
5369	2	0.00176916	Unspecified functional disorder of stomach	5		
5370	10	0.0088458	Acquired hypertrophic pyloric stenosis	5		
5371	1	0.00088458	Gastric diverticulum	5		
5373	3	0.00265374	Other obstruction of duodenum	5		
5374	2	0.00176916	Fistula of stomach or duodenum	5		
53782	7	0.00619206	Angiodysplasia of stomach and duodenum without mention of hemorrhage	5		

53789	4	0.00353832	Other specified disorders of stomach and duodenum	5		
5379	6	0.00530748	Unspecified disorder of stomach and duodenum	5		
53901	1	0.00088458	Infection due to gastric band procedure	5		
53909	3	0.00265374	Other complications of gastric band procedure	5		
53989	4	0.00353832	Other complications of other bariatric procedure	5		
5400	10	0.0088458	Acute appendicitis with generalized peritonitis	5		
5401	9	0.00796122	Acute appendicitis with peritoneal abscess	5		
5409	19	0.01680702	Acute appendicitis without mention of peritonitis	5		
5439	1	0.00088458	Other and unspecified diseases of appendix	5		
5550	11	0.00973038	Regional enteritis of small intestine	5		
5551	8	0.00707664	Regional enteritis of large intestine	5		
5552	2	0.00176916	Regional enteritis of small intestine with large intestine	5		
5559	14	0.01238412	Regional enteritis of unspecified site	5		
5560	1	0.00088458	Ulcerative (chronic) enterocolitis	5		
5562	6	0.00530748	Ulcerative (chronic) proctitis	5		
5563	1	0.00088458	Ulcerative (chronic) proctosigmoiditis	5		
5565	1	0.00088458	Left-sided ulcerative (chronic) colitis	5		
5566	9	0.00796122	Universal ulcerative (chronic) colitis	5		
5568	4	0.00353832	Other ulcerative colitis	5		
5569	30	0.0265374	Ulcerative colitis, unspecified	5		
5570	69	0.06103602	Acute vascular insufficiency of intestine	5		
5571	22	0.01946076	Chronic vascular insufficiency of intestine	5		
5579	94	0.08315052	Unspecified vascular insufficiency of intestine	5		
5581	9	0.00796122	Gastroenteritis and colitis due to radiation	5		
5582	5	0.0044229	Toxic gastroenteritis and colitis	5		
5589	253	0.22379874	Other and unspecified noninfectious gastroenteritis and colitis	5		
5600	1	0.00088458	Intussusception	5		
5601	121	0.10703418	Paralytic ileus	5		
5602	11	0.00973038	Volvulus	5		
56031	1	0.00088458	Gallstone ileus	5		
56032	42	0.03715236	Fecal impaction	5		
56039	14	0.01238412	Other impaction of intestine	5		
56081	79	0.06988182	Intestinal or peritoneal adhesions with obstruction (postoperative) (postinfection)	5		
56089	49	0.04334442	Other specified intestinal obstruction	5		
5609	246	0.21760668	Unspecified intestinal obstruction	5		

56201	1	0.00088458	Diverticulitis of small intestine (without mention of hemorrhage)	5		
56202	2	0.00176916	Diverticulosis of small intestine with hemorrhage	5		
56210	16	0.01415328	Diverticulosis of colon (without mention of hemorrhage)	5		
56211	306	0.27068148	Diverticulitis of colon (without mention of hemorrhage)	5		
56400	96	0.08491968	Constipation, unspecified	5		
56401	2	0.00176916	Slow transit constipation	5		
56409	35	0.0309603	Other constipation	5		
5641	16	0.01415328	Irritable bowel syndrome	5		
5642	1	0.00088458	Postgastric surgery syndromes	5		
5643	1	0.00088458	Vomiting following gastrointestinal surgery	5		
5647	2	0.00176916	Megacolon, other than Hirschsprung's	5		
56489	4	0.00353832	Other functional disorders of intestine	5		
5649	1	0.00088458	Unspecified functional disorder of intestine	5		
5650	6	0.00530748	Anal fissure	5		
5651	3	0.00265374	Anal fistula	5		
566	19	0.01680702	Abscess of anal and rectal regions	5		
56721	2	0.00176916	Peritonitis (acute) generalized	5		
56722	20	0.0176916	Peritoneal abscess	5		
56723	21	0.01857618	Spontaneous bacterial peritonitis	5		
56729	1	0.00088458	Other suppurative peritonitis	5		
56731	4	0.00353832	Psoas muscle abscess	5		
56738	1	0.00088458	Other retroperitoneal abscess	5		
56782	1	0.00088458	Sclerosing mesenteritis	5		
56789	1	0.00088458	Other specified peritonitis	5		
5679	4	0.00353832	Unspecified peritonitis	5		
5680	3	0.00265374	Peritoneal adhesions (postoperative) (postinfection)	5		
56889	1	0.00088458	Other specified disorders of peritoneum	5		
5689	1	0.00088458	Unspecified disorder of peritoneum	5		
5690	4	0.00353832	Anal and rectal polyp	5		
5691	12	0.01061496	Rectal prolapse	5		
5692	2	0.00176916	Stenosis of rectum and anus	5		
56941	25	0.0221145	Ulcer of anus and rectum	5		
56942	2	0.00176916	Anal or rectal pain	5		
56949	18	0.01592244	Other specified disorders of rectum and anus	5		
5695	6	0.00530748	Abscess of intestine	5		

56961	5	0.0044229	Infection of colostomy or enterostomy	5		
56962	2	0.00176916	Mechanical complication of colostomy and enterostomy	5		
56969	19	0.01680702	Other colostomy and enterostomy complication	5		
56981	7	0.00619206	Fistula of intestine, excluding rectum and anus	5		
56982	23	0.02034534	Ulceration of intestine	5		
56983	19	0.01680702	Perforation of intestine	5		
56984	4	0.00353832	Angiodysplasia of intestine (without mention of hemorrhage)	5		
56989	7	0.00619206	Other specified disorders of intestine	5		
5699	3	0.00265374	Unspecified disorder of intestine	5		
570	25	0.0221145	Acute and subacute necrosis of liver	5		
5710	1	0.00088458	Alcoholic fatty liver	5		
5711	10	0.0088458	Acute alcoholic hepatitis	5		
5712	62	0.05484396	Alcoholic cirrhosis of liver	5		
5713	3	0.00265374	Alcoholic liver damage, unspecified	5		
57142	2	0.00176916	Autoimmune hepatitis	5		
5715	62	0.05484396	Cirrhosis of liver without mention of alcohol	5		
5716	2	0.00176916	Biliary cirrhosis	5		
5718	4	0.00353832	Other chronic nonalcoholic liver disease	5		
5720	8	0.00707664	Abscess of liver	5		
5722	98	0.08668884	Hepatic encephalopathy	5		
5723	10	0.0088458	Portal hypertension	5		
5724	5	0.0044229	Hepatorenal syndrome	5		
5728	6	0.00530748	Other sequelae of chronic liver disease	5		
5730	2	0.00176916	Chronic passive congestion of liver	5		
5733	23	0.02034534	Hepatitis, unspecified	5		
5738	8	0.00707664	Other specified disorders of liver	5		
57400	155	0.1371099	Calculus of gallbladder with acute cholecystitis, without mention of obstruction	5		
57401	7	0.00619206	Calculus of gallbladder with acute cholecystitis, with obstruction	5		
57410	76	0.06722808	Calculus of gallbladder with other cholecystitis, without mention of obstruction	5		
57411	3	0.00265374	Calculus of gallbladder with other cholecystitis, with obstruction	5		
57420	63	0.05572854	Calculus of gallbladder without mention of cholecystitis, without mention of obstruction	5		
57421	2	0.00176916	Calculus of gallbladder without mention of cholecystitis, with obstruction	5		
57430	10	0.0088458	Calculus of bile duct with acute cholecystitis, without mention of obstruction	5		
57431	2	0.00176916	Calculus of bile duct with acute cholecystitis, with obstruction	5		
57440	5	0.0044229	Calculus of bile duct with other cholecystitis, without mention of obstruction	5		

57441	3	0.00265374	Calculus of bile duct with other cholecystitis, with obstruction	5		
57450	15	0.0132687	Calculus of bile duct without mention of cholecystitis, without mention of obstruction	5		
57451	19	0.01680702	Calculus of bile duct without mention of cholecystitis, with obstruction	5		
57460	9	0.00796122	Calculus of gallbladder and bile duct with acute cholecystitis, without mention of obstruction	5		
57461	7	0.00619206	Calculus of gallbladder and bile duct with acute cholecystitis, with obstruction	5		
57470	10	0.0088458	Calculus of gallbladder and bile duct with other cholecystitis, without mention of obstruction	5		
57471	4	0.00353832	Calculus of gallbladder and bile duct with other cholecystitis, with obstruction	5		
57480	12	0.01061496	Calculus of gallbladder and bile duct with acute and chronic cholecystitis, without mention of obstruction	5		
57481	3	0.00265374	Calculus of gallbladder and bile duct with acute and chronic cholecystitis, with obstruction	5		
57490	6	0.00530748	Calculus of gallbladder and bile duct without cholecystitis, without mention of obstruction	5		
57491	2	0.00176916	Calculus of gallbladder and bile duct without cholecystitis, with obstruction	5		
5750	85	0.0751893	Acute cholecystitis	5		
57510	2	0.00176916	Cholecystitis, unspecified	5		
57511	20	0.0176916	Chronic cholecystitis	5		
57512	13	0.01149954	Acute and chronic cholecystitis	5		
5754	3	0.00265374	Perforation of gallbladder	5		
5758	8	0.00707664	Other specified disorders of gallbladder	5		
5759	2	0.00176916	Unspecified disorder of gallbladder	5		
5761	12	0.01061496	Cholangitis	5		
5762	23	0.02034534	Obstruction of bile duct	5		
5768	8	0.00707664	Other specified disorders of biliary tract	5		
5770	252	0.22291416	Acute pancreatitis	5		
5771	13	0.01149954	Chronic pancreatitis	5		
5772	14	0.01238412	Cyst and pseudocyst of pancreas	5		
5778	4	0.00353832	Other specified diseases of pancreas	5		
5779	6	0.00530748	Unspecified disease of pancreas	5		
5793	1	0.00088458	Other and unspecified postsurgical nonabsorption	5		
5799	1	0.00088458	Unspecified intestinal malabsorption	5		
7503	1	0.00088458	Tracheoesophageal fistula, esophageal atresia and stenosis	5		
75162	1	0.00088458	Congenital cystic disease of liver	5		
75169	1	0.00088458	Other anomalies of gallbladder, bile ducts, and liver	5		
7824	3	0.00265374	Jaundice, unspecified, not of newborn	5		
78701	222	0.19637676	Nausea with vomiting	5		
78702	32	0.02830656	Nausea alone	5		

78703	7	0.00619206	Vomiting alone	5		
78720	35	0.0309603	Dysphagia, unspecified	5		
78722	7	0.00619206	Dysphagia, oropharyngeal phase	5		
78724	1	0.00088458	Dysphagia, pharyngoesophageal phase	5		
78729	7	0.00619206	Other dysphagia	5		
7873	2	0.00176916	Flatulence, eructation, and gas pain	5		
78760	1	0.00088458	Full incontinence of feces	5		
78791	110	0.0973038	Diarrhea	5		
78799	2	0.00176916	Other symptoms involving digestive system	5		
78900	108	0.09553464	Abdominal pain, unspecified site	5		
78901	23	0.02034534	Abdominal pain, right upper quadrant	5		
78902	5	0.0044229	Abdominal pain, left upper quadrant	5		
78903	12	0.01061496	Abdominal pain, right lower quadrant	5		
78904	13	0.01149954	Abdominal pain, left lower quadrant	5		
78905	4	0.00353832	Abdominal pain, periumbilic	5		
78906	64	0.05661312	Abdominal pain, epigastric	5		
78907	13	0.01149954	Abdominal pain, generalized	5		
78909	50	0.044229	Abdominal pain, other specified site	5		
7892	1	0.00088458	Splenomegaly	5		
78930	2	0.00176916	Abdominal or pelvic swelling, mass, or lump, unspecified site	5		
78939	4	0.00353832	Abdominal or pelvic swelling, mass, or lump, other specified site	5		
78951	1	0.00088458	Malignant ascites	5		
78959	16	0.01415328	Other ascites	5		
7904	3	0.00265374	Nonspecific elevation of levels of transaminase or lactic acid dehydrogenase [LDH]	5		
7921	3	0.00265374	Nonspecific abnormal findings in stool contents	5		
99682	15	0.0132687	Complications of transplanted liver	5		
9974	19	0.01680702	Digestive system complications not elsewhere classified	5		
99741	1	0.00088458	Retained cholelithiasis following cholecystectomy	5		
99749	30	0.0265374	Other digestive system complications	5		
43300	2	0.00176916	Occlusion and stenosis of basilar artery without mention of cerebral infarction	6	A	
43301	5	0.0044229	Occlusion and stenosis of basilar artery with cerebral infarction	6	A	
43310	162	0.14330196	Occlusion and stenosis of carotid artery without mention of cerebral infarction	6	A	
43311	57	0.05042106	Occlusion and stenosis of carotid artery with cerebral infarction	6	A	
43320	4	0.00353832	Occlusion and stenosis of vertebral artery without mention of cerebral infarction	6	A	
43321	1	0.00088458	Occlusion and stenosis of vertebral artery with cerebral infarction	6	A	

43330	3	0.00265374	Occlusion and stenosis of multiple and bilateral precerebral arteries without mention of cerebral infarction	6	A	
43331	5	0.0044229	Occlusion and stenosis of multiple and bilateral precerebral arteries with cerebral infarction	6	A	
43380	2	0.00176916	Occlusion and stenosis of other specified precerebral artery without mention of cerebral infarction	6	A	
43381	3	0.00265374	Occlusion and stenosis of other specified precerebral artery with cerebral infarction	6	A	
43400	2	0.00176916	Cerebral thrombosis without mention of cerebral infarction	6	A	
43401	44	0.03892152	Cerebral thrombosis with cerebral infarction	6	A	
43410	6	0.00530748	Cerebral embolism without mention of cerebral infarction	6	A	
43411	785	0.6943953	Cerebral embolism with cerebral infarction	6	A	
43490	2	0.00176916	Cerebral artery occlusion, unspecified without mention of cerebral infarction	6	A	
43491	1135	1.0039983	Cerebral artery occlusion, unspecified with cerebral infarction	6	A	
4353	2	0.00176916	Vertebrobasilar artery syndrome	6	A	
4358	22	0.01946076	Other specified transient cerebral ischemias	6	A	
4359	516	0.45644328	Unspecified transient cerebral ischemia	6	A	
436	1	0.00088458	Acute, but ill-defined, cerebrovascular disease	6	A	
4370	6	0.00530748	Cerebral atherosclerosis	6	A	
4371	1	0.00088458	Other generalized ischemic cerebrovascular disease	6	A	
32381	1	0.00088458	Other causes of encephalitis and encephalomyelitis	6	B	
32382	1	0.00088458	Other causes of myelitis	6	B	
3239	5	0.0044229	Unspecified causes of encephalitis, myelitis, and encephalomyelitis	6	B	
325	1	0.00088458	Phlebitis and thrombophlebitis of intracranial venous sinuses	6	B	
3310	135	0.1194183	Alzheimer's disease	6	B	
33111	1	0.00088458	Pick's disease	6	B	
33119	4	0.00353832	Other frontotemporal dementia	6	B	
3313	2	0.00176916	Communicating hydrocephalus	6	B	
3314	4	0.00353832	Obstructive hydrocephalus	6	B	
3315	14	0.01238412	Idiopathic normal pressure hydrocephalus (INPH)	6	B	
33182	18	0.01592244	Dementia with lewy bodies	6	B	
33189	1	0.00088458	Other cerebral degeneration	6	B	
3319	2	0.00176916	Cerebral degeneration, unspecified	6	B	
3320	28	0.02476824	Paralysis agitans	6	B	
3321	1	0.00088458	Secondary parkinsonism	6	B	
3330	24	0.02122992	Other degenerative diseases of the basal ganglia	6	B	
3331	5	0.0044229	Essential and other specified forms of tremor	6	B	
3332	13	0.01149954	Myoclonus	6	B	

3335	6	0.00530748	Other choreas	6	B
33399	1	0.00088458	Other extrapyramidal diseases and abnormal movement disorders	6	B
3349	1	0.00088458	Spinocerebellar disease, unspecified	6	B
33520	2	0.00176916	Amyotrophic lateral sclerosis	6	B
3361	3	0.00265374	Vascular myelopathies	6	B
3369	1	0.00088458	Unspecified disease of spinal cord	6	B
33701	1	0.00088458	Carotid sinus syndrome	6	B
3373	1	0.00088458	Autonomic dysreflexia	6	B
3379	12	0.01061496	Unspecified disorder of autonomic nervous system	6	B
33811	2	0.00176916	Acute pain due to trauma	6	B
33812	2	0.00176916	Acute post-thoracotomy pain	6	B
33818	18	0.01592244	Other acute postoperative pain	6	B
33819	10	0.0088458	Other acute pain	6	B
33822	1	0.00088458	Chronic post-thoracotomy pain	6	B
33828	1	0.00088458	Other chronic postoperative pain	6	B
33829	5	0.0044229	Other chronic pain	6	B
3383	44	0.03892152	Neoplasm related pain (acute) (chronic)	6	B
3384	8	0.00707664	Chronic pain syndrome	6	B
33920	1	0.00088458	Post-traumatic headache, unspecified	6	B
3393	1	0.00088458	Drug induced headache, not elsewhere classified	6	B
340	6	0.00530748	Multiple sclerosis	6	B
34290	1	0.00088458	Hemiplegia, unspecified, affecting unspecified side	6	B
3441	1	0.00088458	Paraplegia	6	B
34460	1	0.00088458	Cauda equina syndrome without mention of neurogenic bladder	6	B
34481	1	0.00088458	Locked-in state	6	B
34500	1	0.00088458	Generalized nonconvulsive epilepsy, without mention of intractable epilepsy	6	B
34510	21	0.01857618	Generalized convulsive epilepsy, without mention of intractable epilepsy	6	B
3453	18	0.01592244	Grand mal status	6	B
34540	10	0.0088458	Localization-related (focal) (partial) epilepsy and epileptic syndromes with complex partial seizures, without mention of intractable epilepsy	6	B
34550	13	0.01149954	Localization-related (focal) (partial) epilepsy and epileptic syndromes with simple partial seizures, without mention of intractable epilepsy	6	B
34570	4	0.00353832	Epilepsia partialis continua, without mention of intractable epilepsy	6	B
34580	13	0.01149954	Other forms of epilepsy and recurrent seizures, without mention of intractable epilepsy	6	B
34581	1	0.00088458	Other forms of epilepsy and recurrent seizures, with intractable epilepsy	6	B
34590	78	0.06899724	Epilepsy, unspecified, without mention of intractable epilepsy	6	B
34591	1	0.00088458	Epilepsy, unspecified, with intractable epilepsy	6	B

34600	3	0.00265374	Migraine with aura, without mention of intractable migraine without mention of status migrainosus	6	B	
34630	1	0.00088458	Hemiplegic migraine, without mention of intractable migraine without mention of status migrainosus	6	B	
34670	1	0.00088458	Chronic migraine without aura, without mention of intractable migraine without mention of status migrainosus	6	B	
34680	8	0.00707664	Other forms of migraine, without mention of intractable migraine without mention of status migrainosus	6	B	
34690	12	0.01061496	Migraine, unspecified, without mention of intractable migraine without mention of status migrainosus	6	B	
34691	2	0.00176916	Migraine, unspecified, with intractable migraine, so stated, without mention of status migrainosus	6	B	
34692	2	0.00176916	Migraine, unspecified, without mention of intractable migraine with status migrainosus	6	B	
34700	1	0.00088458	Narcolepsy, without cataplexy	6	B	
3480	2	0.00176916	Cerebral cysts	6	B	
3481	6	0.00530748	Anoxic brain damage	6	B	
34830	82	0.07253556	Encephalopathy, unspecified	6	B	
34831	88	0.07784304	Metabolic encephalopathy	6	B	
34839	47	0.04157526	Other encephalopathy	6	B	
3485	1	0.00088458	Cerebral edema	6	B	
34889	4	0.00353832	Other conditions of brain	6	B	
3489	5	0.0044229	Unspecified condition of brain	6	B	
34982	99	0.08757342	Toxic encephalopathy	6	B	
34989	1	0.00088458	Other specified disorders of nervous system	6	B	
3501	4	0.00353832	Trigeminal neuralgia	6	B	
3510	3	0.00265374	Bell's palsy	6	B	
3522	1	0.00088458	Other disorders of glossopharyngeal [9th] nerve	6	B	
3523	1	0.00088458	Disorders of pneumogastric [10th] nerve	6	B	
3532	1	0.00088458	Cervical root lesions, not elsewhere classified	6	B	
3536	1	0.00088458	Phantom limb (syndrome)	6	B	
3538	1	0.00088458	Other nerve root and plexus disorders	6	B	
3539	1	0.00088458	Unspecified nerve root and plexus disorder	6	B	
3543	3	0.00265374	Lesion of radial nerve	6	B	
3548	3	0.00265374	Other mononeuritis of upper limb	6	B	
3549	1	0.00088458	Mononeuritis of upper limb, unspecified	6	B	
3553	1	0.00088458	Lesion of lateral popliteal nerve	6	B	
3558	3	0.00265374	Mononeuritis of lower limb, unspecified	6	B	
3559	2	0.00176916	Mononeuritis of unspecified site	6	B	
3568	1	0.00088458	Other specified idiopathic peripheral neuropathy	6	B	

3569	5	0.0044229	Unspecified hereditary and idiopathic peripheral neuropathy	6	B
3570	7	0.00619206	Acute infective polyneuritis	6	B
3575	4	0.00353832	Alcoholic polyneuropathy	6	B
3576	3	0.00265374	Polyneuropathy due to drugs	6	B
35781	4	0.00353832	Chronic inflammatory demyelinating polyneuritis	6	B
35782	2	0.00176916	Critical illness polyneuropathy	6	B
35789	2	0.00176916	Other inflammatory and toxic neuropathy	6	B
35800	7	0.00619206	Myasthenia gravis without (acute) exacerbation	6	B
35801	9	0.00796122	Myasthenia gravis with (acute) exacerbation	6	B
3589	1	0.00088458	Myoneural disorders, unspecified	6	B
4372	14	0.01238412	Hypertensive encephalopathy	6	B
4373	12	0.01061496	Cerebral aneurysm, nonruptured	6	B
4374	1	0.00088458	Cerebral arteritis	6	B
4377	5	0.0044229	Transient global amnesia	6	B
4378	2	0.00176916	Other ill-defined cerebrovascular disease	6	B
4379	2	0.00176916	Unspecified cerebrovascular disease	6	B
4380	1	0.00088458	Late effects of cerebrovascular disease, cognitive deficits	6	B
43811	1	0.00088458	Late effects of cerebrovascular disease, aphasia	6	B
43813	2	0.00176916	Late effects of cerebrovascular disease, dysarthria	6	B
43820	4	0.00353832	Late effects of cerebrovascular disease, hemiplegia affecting unspecified side	6	B
4386	4	0.00353832	Late effects of cerebrovascular disease, alterations of sensations	6	B
43882	4	0.00353832	Other late effects of cerebrovascular disease, dysphagia	6	B
43884	1	0.00088458	Other late effects of cerebrovascular disease, ataxia	6	B
43885	1	0.00088458	Other late effects of cerebrovascular disease, vertigo	6	B
43889	40	0.0353832	Other late effects of cerebrovascular disease	6	B
4389	2	0.00176916	Unspecified late effects of cerebrovascular disease	6	B
78002	3	0.00265374	Transient alteration of awareness	6	B
78009	65	0.0574977	Other alteration of consciousness	6	B
78039	77	0.06811266	Other convulsions	6	B
78096	2	0.00176916	Generalized pain	6	B
78097	229	0.20256882	Altered mental status	6	B
7810	12	0.01061496	Abnormal involuntary movements	6	B
7811	1	0.00088458	Disturbances of sensation of smell and taste	6	B
7812	27	0.02388366	Abnormality of gait	6	B
7813	17	0.01503786	Lack of coordination	6	B

78194	1	0.00088458	Facial weakness	6	B
78199	2	0.00176916	Other symptoms involving nervous and musculoskeletal systems	6	B
7820	15	0.0132687	Disturbance of skin sensation	6	B
7840	34	0.03007572	Headache	6	B
7843	4	0.00353832	Aphasia	6	B
78442	1	0.00088458	Dysphonia	6	B
78451	8	0.00707664	Dysarthria	6	B
78459	11	0.00973038	Other speech disturbance	6	B
78469	2	0.00176916	Other symbolic dysfunction	6	B
78492	1	0.00088458	Jaw pain	6	B
99663	2	0.00176916	Infection and inflammatory reaction due to nervous system device, implant, and graft	6	B
99701	3	0.00265374	Central nervous system complication	6	B
99702	9	0.00796122	Iatrogenic cerebrovascular infarction or hemorrhage	6	B
99709	1	0.00088458	Other nervous system complications	6	B
2752	16	0.01415328	Disorders of magnesium metabolism	7	A
2753	5	0.0044229	Disorders of phosphorus metabolism	7	A
27541	7	0.00619206	Hypocalcemia	7	A
27542	33	0.02919114	Hypercalcemia	7	A
27549	15	0.0132687	Other disorders of calcium metabolism	7	A
2760	42	0.03715236	Hyperosmolality and/or hypernatremia	7	A
2761	525	0.4644045	Hyposmolality and/or hyponatremia	7	A
2762	14	0.01238412	Acidosis	7	A
2763	2	0.00176916	Alkalosis	7	A
2767	193	0.17072394	Hyperpotassemia	7	A
2768	107	0.09465006	Hypopotassemia	7	A
2769	4	0.00353832	Electrolyte and fluid disorders not elsewhere classified	7	A
58881	1	0.00088458	Secondary hyperparathyroidism (of renal origin)	7	A
40300	40	0.0353832	Hypertensive chronic kidney disease, malignant, with chronic kidney disease stage I through stage IV, or unspecified	7	B
40301	22	0.01946076	Hypertensive chronic kidney disease, malignant, with chronic kidney disease stage V or end stage renal disease	7	B
40310	1	0.00088458	Hypertensive chronic kidney disease, benign, with chronic kidney disease stage I through stage IV, or unspecified	7	B
40311	6	0.00530748	Hypertensive chronic kidney disease, benign, with chronic kidney disease stage V or end stage renal disease	7	B
40390	54	0.04776732	Hypertensive chronic kidney disease, unspecified, with chronic kidney disease stage I through stage IV, or unspecified	7	B
40391	158	0.13976364	Hypertensive chronic kidney disease, unspecified, with chronic kidney disease stage V or end stage renal disease	7	B

40400	1	0.00088458	Hypertensive heart and chronic kidney disease, malignant, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	7	B	
40402	2	0.00176916	Hypertensive heart and chronic kidney disease, malignant, without heart failure and with chronic kidney disease stage V or end stage renal disease	7	B	
40492	6	0.00530748	Hypertensive heart and chronic kidney disease, unspecified, without heart failure and with chronic kidney disease stage V or end stage renal disease	7	B	
5845	148	0.13091784	Acute kidney failure with lesion of tubular necrosis	7	B	
5848	2	0.00176916	Acute kidney failure with other specified pathological lesion in kidney	7	B	
5849	2097	1.85496426	Acute kidney failure, unspecified	7	B	
5854	3	0.00265374	Chronic kidney disease, Stage IV (severe)	7	B	
5856	41	0.03626778	End stage renal disease	7	B	
5859	1	0.00088458	Chronic kidney disease, unspecified	7	B	
586	2	0.00176916	Renal failure, unspecified	7	B	
5804	2	0.00176916	Acute glomerulonephritis with lesion of rapidly progressive glomerulonephritis	7	C	
58089	7	0.00619206	Acute glomerulonephritis with other specified pathological lesion in kidney	7	C	
5811	1	0.00088458	Nephrotic syndrome with lesion of membranous glomerulonephritis	7	C	
5819	1	0.00088458	Nephrotic syndrome with unspecified pathological lesion in kidney	7	C	
5839	2	0.00176916	Nephritis and nephropathy, not specified as acute or chronic, with unspecified pathological lesion in kidney	7	C	
58889	1	0.00088458	Other specified disorders resulting from impaired renal function	7	C	
59000	2	0.00176916	Chronic pyelonephritis without lesion of renal medullary necrosis	7	C	
59010	48	0.04245984	Acute pyelonephritis without lesion of renal medullary necrosis	7	C	
5902	1	0.00088458	Renal and perinephric abscess	7	C	
59080	48	0.04245984	Pyelonephritis, unspecified	7	C	
591	10	0.0088458	Hydronephrosis	7	C	
5920	34	0.03007572	Calculus of kidney	7	C	
5921	81	0.07165098	Calculus of ureter	7	C	
5932	2	0.00176916	Cyst of kidney, acquired	7	C	
5933	1	0.00088458	Stricture or kinking of ureter	7	C	
5934	11	0.00973038	Other ureteric obstruction	7	C	
59381	45	0.0398061	Vascular disorders of kidney	7	C	
59389	1	0.00088458	Other specified disorders of kidney and ureter	7	C	
5939	27	0.02388366	Unspecified disorder of kidney and ureter	7	C	
5941	8	0.00707664	Other calculus in bladder	7	C	
5950	19	0.01680702	Acute cystitis	7	C	
5951	1	0.00088458	Chronic interstitial cystitis	7	C	
5952	5	0.0044229	Other chronic cystitis	7	C	
59581	1	0.00088458	Cystitis cystica	7	C	

59582	9	0.00796122	Irradiation cystitis	7	C
59589	2	0.00176916	Other specified types of cystitis	7	C
5959	30	0.0265374	Cystitis, unspecified	7	C
5960	11	0.00973038	Bladder neck obstruction	7	C
5961	9	0.00796122	Intestinovesical fistula	7	C
5963	2	0.00176916	Diverticulum of bladder	7	C
5968	1	0.00088458	Other specified disorders of bladder	7	C
59681	2	0.00176916	Infection of cystostomy	7	C
59689	6	0.00530748	Other specified disorders of bladder	7	C
5969	2	0.00176916	Unspecified disorder of bladder	7	C
59780	1	0.00088458	Urethritis, unspecified	7	C
59789	1	0.00088458	Other urethritis	7	C
5989	2	0.00176916	Urethral stricture, unspecified	7	C
5990	1479	1.30829382	Urinary tract infection, site not specified	7	C
5991	1	0.00088458	Urethral fistula	7	C
5995	1	0.00088458	Prolapsed urethral mucosa	7	C
59960	9	0.00796122	Urinary obstruction, unspecified	7	C
59969	2	0.00176916	Urinary obstruction, not elsewhere classified	7	C
59984	1	0.00088458	Other specified disorders of urethra	7	C
60000	11	0.00973038	Hypertrophy (benign) of prostate without urinary obstruction and other lower urinary tract symptom (LUTS)	7	C
60001	114	0.10084212	Hypertrophy (benign) of prostate with urinary obstruction and other lower urinary tract symptoms (LUTS)	7	C
60091	5	0.0044229	Hyperplasia of prostate, unspecified, with urinary obstruction and other lower urinary symptoms (LUTS)	7	C
6010	7	0.00619206	Acute prostatitis	7	C
6019	5	0.0044229	Prostatitis, unspecified	7	C
6020	1	0.00088458	Calculus of prostate	7	C
6028	1	0.00088458	Other specified disorders of prostate	7	C
60490	4	0.00353832	Orchitis and epididymitis, unspecified	7	C
60499	2	0.00176916	Other orchitis, epididymitis, and epididymo-orchitis, without mention of abscess	7	C
605	2	0.00176916	Redundant prepuce and phimosis	7	C
6072	1	0.00088458	Other inflammatory disorders of penis	7	C
60784	1	0.00088458	Impotence of organic origin	7	C
60820	1	0.00088458	Torsion of testis, unspecified	7	C
6084	11	0.00973038	Other inflammatory disorders of male genital organs	7	C
60883	3	0.00265374	Vascular disorders of male genital organs	7	C

60886	3	0.00265374	Edema of male genital organs	7	C
6089	1	0.00088458	Unspecified disorder of male genital organs	7	C
75312	2	0.00176916	Polycystic kidney, unspecified type	7	C
7880	1	0.00088458	Renal colic	7	C
78820	16	0.01415328	Retention of urine, unspecified	7	C
78829	2	0.00176916	Other specified retention of urine	7	C
78832	1	0.00088458	Stress incontinence, male	7	C
78899	2	0.00176916	Other symptoms involving urinary system	7	C
7919	1	0.00088458	Other nonspecific findings on examination of urine	7	C
99631	11	0.00973038	Mechanical complication due to urethral (indwelling) catheter	7	C
99639	6	0.00530748	Other mechanical complication of genitourinary device, implant, and graft	7	C
99656	5	0.0044229	Mechanical complication due to peritoneal dialysis catheter	7	C
99664	149	0.13180242	Infection and inflammatory reaction due to indwelling urinary catheter	7	C
99665	15	0.0132687	Infection and inflammatory reaction due to other genitourinary device, implant, and graft	7	C
99668	16	0.01415328	Infection and inflammatory reaction due to peritoneal dialysis catheter	7	C
99673	113	0.09995754	Other complications due to renal dialysis device, implant, and graft	7	C
99676	27	0.02388366	Other complications due to genitourinary device, implant, and graft	7	C
99681	43	0.03803694	Complications of transplanted kidney	7	C
99731	5	0.0044229	Ventilator associated pneumonia	7	C
99732	7	0.00619206	Postprocedural aspiration pneumonia	7	C
99739	64	0.05661312	Other respiratory complications	7	C
9975	20	0.0176916	Urinary complications, not elsewhere classified	7	C
7944	1	0.00088458	Nonspecific abnormal results of function study of kidney	7	C
2800	88	0.07784304	Iron deficiency anemia secondary to blood loss (chronic)	8	A
2801	1	0.00088458	Iron deficiency anemia secondary to inadequate dietary iron intake	8	A
2808	2	0.00176916	Other specified iron deficiency anemias	8	A
2809	71	0.06280518	Iron deficiency anemia, unspecified	8	A
2810	2	0.00176916	Pernicious anemia	8	A
2812	2	0.00176916	Folate-deficiency anemia	8	A
2819	9	0.00796122	Unspecified deficiency anemia	8	A
2822	1	0.00088458	Anemias due to disorders of glutathione metabolism	8	A
2830	15	0.0132687	Autoimmune hemolytic anemias	8	A
28319	3	0.00265374	Other non-autoimmune hemolytic anemias	8	A
2839	12	0.01061496	Acquired hemolytic anemia, unspecified	8	A
28489	29	0.02565282	Other specified aplastic anemias	8	A

2849	1	0.00088458	Aplastic anemia, unspecified	8	A
2850	1	0.00088458	Sideroblastic anemia	8	A
2851	245	0.2167221	Acute posthemorrhagic anemia	8	A
28521	61	0.05395938	Anemia in chronic kidney disease	8	A
28522	39	0.03449862	Anemia in neoplastic disease	8	A
28529	53	0.04688274	Anemia of other chronic disease	8	A
2853	19	0.01680702	Antineoplastic chemotherapy induced anemia	8	A
2858	11	0.00973038	Other specified anemias	8	A
2859	216	0.19106928	Anemia, unspecified	8	A
28242	3	0.00265374	Sickle-cell thalassemia with crisis	8	B
28243	1	0.00088458	Alpha thalassemia	8	B
28244	1	0.00088458	Beta thalassemia	8	B
28262	16	0.01415328	Hb-SS disease with crisis	8	B
2841	13	0.01149954	Pancytopenia	8	B
28411	32	0.02830656	Antineoplastic chemotherapy induced pancytopenia	8	B
28412	1	0.00088458	Other drug-induced pancytopenia	8	B
28419	27	0.02388366	Other pancytopenia	8	B
2863	1	0.00088458	Congenital deficiency of other clotting factors	8	B
2865	6	0.00530748	Hemorrhagic disorder due to intrinsic circulating anticoagulants	8	B
28659	12	0.01061496	Other hemorrhagic disorder due to intrinsic circulating anticoagulants, antibodies, or inhibitors	8	B
2866	5	0.0044229	Defibrination syndrome	8	B
2867	16	0.01415328	Acquired coagulation factor deficiency	8	B
2869	35	0.0309603	Other and unspecified coagulation defects	8	B
2870	3	0.00265374	Allergic purpura	8	B
2871	1	0.00088458	Qualitative platelet defects	8	B
28730	2	0.00176916	Primary thrombocytopenia,unspecified	8	B
28731	24	0.02122992	Immune thrombocytopenic purpura	8	B
28732	1	0.00088458	Evans' syndrome	8	B
2874	4	0.00353832	Secondary thrombocytopenia	8	B
28749	7	0.00619206	Other secondary thrombocytopenia	8	B
2875	17	0.01503786	Thrombocytopenia, unspecified	8	B
2879	1	0.00088458	Unspecified hemorrhagic conditions	8	B
28800	73	0.06457434	Neutropenia, unspecified	8	B
28803	39	0.03449862	Drug induced neutropenia	8	B
28804	1	0.00088458	Neutropenia due to infection	8	B

28809	3	0.00265374	Other neutropenia	8	B	
2883	2	0.00176916	Eosinophilia	8	B	
28850	5	0.0044229	Leukocytopenia, unspecified	8	B	
28860	30	0.0265374	Leukocytosis, unspecified	8	B	
28866	2	0.00176916	Bandemia	8	B	
2888	3	0.00265374	Other specified disease of white blood cells	8	B	
2893	3	0.00265374	Lymphadenitis, unspecified, except mesenteric	8	B	
28959	17	0.01503786	Other diseases of spleen	8	B	
28981	8	0.00707664	Primary hypercoagulable state	8	B	
28982	5	0.0044229	Secondary hypercoagulable state	8	B	
28984	7	0.00619206	Heparin-induced thrombocytopenia (HIT)	8	B	
28989	1	0.00088458	Other specified diseases of blood and blood-forming organs	8	B	
79092	423	0.37417734	Abnormal coagulation profile	8	B	
79099	1	0.00088458	Other nonspecific findings on examination of blood	8	B	
99985	1	0.00088458	Delayed hemolytic transfusion reaction, incompatibility unspecified	8	B	
99989	1	0.00088458	Other transfusion reaction	8	B	
73310	1	0.00088458	Pathologic fracture, unspecified site	9		
73311	5	0.0044229	Pathologic fracture of humerus	9		
73313	108	0.09553464	Pathologic fracture of vertebrae	9		
73314	12	0.01061496	Pathologic fracture of neck of femur	9		
73315	5	0.0044229	Pathologic fracture of other specified part of femur	9		
73319	4	0.00353832	Pathologic fracture of other specified site	9		
73381	2	0.00176916	Malunion of fracture	9		
73382	8	0.00707664	Nonunion of fracture	9		
73394	1	0.00088458	Stress fracture of the metatarsals	9		
7960	23	0.02034534	Nonspecific abnormal toxicological findings	9		
80001	2	0.00176916	Closed fracture of vault of skull without mention of intracranial injury, with no loss of consciousness	9		
80020	1	0.00088458	Closed fracture of vault of skull with subarachnoid, subdural, and extradural hemorrhage, unspecified state of consciousness	9		
80051	1	0.00088458	Open fracture of vault of skull without mention of intracranial injury, with no loss of consciousness	9		
80100	2	0.00176916	Closed fracture of base of skull without mention of intra cranial injury, unspecified state of consciousness	9		
80101	5	0.0044229	Closed fracture of base of skull without mention of intra cranial injury, with no loss of consciousness	9		
80109	1	0.00088458	Closed fracture of base of skull without mention of intra cranial injury, with concussion, unspecified	9		

80112	1	0.00088458	Closed fracture of base of skull with cerebral laceration and contusion, with brief [less than one hour] loss of consciousness	9		
8020	4	0.00353832	Closed fracture of nasal bones	9		
80221	1	0.00088458	Closed fracture of mandible, condylar process	9		
8024	6	0.00530748	Closed fracture of malar and maxillary bones	9		
8028	3	0.00265374	Closed fracture of other facial bones	9		
80501	13	0.01149954	Closed fracture of first cervical vertebra	9		
80502	20	0.0176916	Closed fracture of second cervical vertebra	9		
80504	4	0.00353832	Closed fracture of fourth cervical vertebra	9		
80505	2	0.00176916	Closed fracture of fifth cervical vertebra	9		
80506	1	0.00088458	Closed fracture of sixth cervical vertebra	9		
80507	2	0.00176916	Closed fracture of seventh cervical vertebra	9		
8052	51	0.04511358	Closed fracture of dorsal [thoracic] vertebra without mention of spinal cord injury	9		
8054	89	0.07872762	Closed fracture of lumbar vertebra without mention of spinal cord injury	9		
8056	11	0.00973038	Closed fracture of sacrum and coccyx without mention of spinal cord injury	9		
80600	2	0.00176916	Closed fracture of C1-C4 level with unspecified spinal cord injury	9		
80604	1	0.00088458	Closed fracture of C1-C4 level with other specified spinal cord injury	9		
80625	2	0.00176916	Closed fracture of T7-T12 level with unspecified spinal cord injury	9		
8064	1	0.00088458	Closed fracture of lumbar spine with spinal cord injury	9		
80700	2	0.00176916	Closed fracture of rib(s), unspecified	9		
80701	9	0.00796122	Closed fracture of one rib	9		
80702	15	0.0132687	Closed fracture of two ribs	9		
80703	18	0.01592244	Closed fracture of three ribs	9		
80704	9	0.00796122	Closed fracture of four ribs	9		
80705	6	0.00530748	Closed fracture of five ribs	9		
80706	2	0.00176916	Closed fracture of six ribs	9		
80707	1	0.00088458	Closed fracture of seven ribs	9		
80708	3	0.00265374	Closed fracture of eight or more ribs	9		
80709	3	0.00265374	Closed fracture of multiple ribs, unspecified	9		
8072	5	0.0044229	Closed fracture of sternum	9		
8080	13	0.01149954	Closed fracture of acetabulum	9		
8082	54	0.04776732	Closed fracture of pubis	9		
80841	2	0.00176916	Closed fracture of ilium	9		
80842	2	0.00176916	Closed fracture of ischium	9		
80843	1	0.00088458	Multiple closed pelvic fractures with disruption of pelvic circle	9		
8088	6	0.00530748	Closed unspecified fracture of pelvis	9		

81000	2	0.00176916	Closed fracture of clavicle, unspecified part	9		
81002	2	0.00176916	Closed fracture of shaft of clavicle	9		
81101	1	0.00088458	Closed fracture of acromial process of scapula	9		
81103	1	0.00088458	Closed fracture of glenoid cavity and neck of scapula	9		
81200	27	0.02388366	Closed fracture of unspecified part of upper end of humerus	9		
81201	23	0.02034534	Closed fracture of surgical neck of humerus	9		
81202	2	0.00176916	Closed fracture of anatomical neck of humerus	9		
81203	4	0.00353832	Closed fracture of greater tuberosity of humerus	9		
81209	17	0.01503786	Other closed fracture of upper end of humerus	9		
81211	1	0.00088458	Open fracture of surgical neck of humerus	9		
81220	2	0.00176916	Closed fracture of unspecified part of humerus	9		
81221	9	0.00796122	Closed fracture of shaft of humerus	9		
81240	4	0.00353832	Closed fracture of unspecified part of lower end of humerus	9		
81241	6	0.00530748	Closed supracondylar fracture of humerus	9		
81242	1	0.00088458	Closed supracondylar fracture of humerus	9		
81301	4	0.00353832	Closed fracture of olecranon process of ulna	9		
81306	2	0.00176916	Closed fracture of neck of radius	9		
81308	1	0.00088458	Closed fracture of radius with ulna, upper end [any part]	9		
81341	10	0.0088458	Closed Colles' fracture	9		
81342	13	0.01149954	Other closed fractures of distal end of radius (alone)	9		
81343	1	0.00088458	Closed fracture of distal end of ulna (alone)	9		
81344	9	0.00796122	Closed fracture of lower end of radius with ulna	9		
81351	1	0.00088458	Open Colles' fracture	9		
81354	4	0.00353832	Open fracture of lower end of radius with ulna	9		
81383	1	0.00088458	Closed fracture of unspecified part of radius with ulna	9		
81401	1	0.00088458	Closed fracture of navicular [scaphoid] bone of wrist	9		
81611	1	0.00088458	Open fracture of middle or proximal phalanx or phalanges of hand	9		
8171	1	0.00088458	Multiple open fractures of hand bones	9		
82000	8	0.00707664	Closed fracture of intracapsular section of neck of femur, unspecified	9		
82002	8	0.00707664	Closed fracture of midcervical section of neck of femur	9		
82003	11	0.00973038	Closed fracture of base of neck of femur	9		
82009	137	0.12118746	Other closed transcervical fracture of neck of femur	9		
82020	15	0.0132687	Closed fracture of trochanteric section of neck of femur	9		
82021	247	0.21849126	Closed fracture of intertrochanteric section of neck of femur	9		
82022	9	0.00796122	Closed fracture of subtrochanteric section of neck of femur	9		

8208	136	0.12030288	Closed fracture of unspecified part of neck of femur	9		
82100	2	0.00176916	Closed fracture of unspecified part of femur	9		
82101	19	0.01680702	Closed fracture of shaft of femur	9		
82120	6	0.00530748	Closed fracture of lower end of femur, unspecified part	9		
82123	12	0.01061496	Closed supracondylar fracture of femur	9		
82129	4	0.00353832	Other closed fracture of lower end of femur	9		
82130	1	0.00088458	Open fracture of lower end of femur, unspecified part	9		
8220	10	0.0088458	Closed fracture of patella	9		
82300	16	0.01415328	Closed fracture of upper end of tibia alone	9		
82301	4	0.00353832	Closed fracture of upper end of fibula alone	9		
82302	3	0.00265374	Closed fracture of upper end of fibula with tibia	9		
82320	2	0.00176916	Closed fracture of shaft of tibia alone	9		
82322	4	0.00353832	Closed fracture of shaft of fibula with tibia	9		
82332	2	0.00176916	Open fracture of shaft of fibula with tibia	9		
82380	3	0.00265374	Closed fracture of unspecified part of tibia alone	9		
82381	1	0.00088458	Closed fracture of unspecified part of fibula alone	9		
82382	5	0.0044229	Closed fracture of unspecified part of fibula with tibia	9		
82392	2	0.00176916	Open fracture of unspecified part of fibula with tibia	9		
8240	6	0.00530748	Fracture of medial malleolus, closed	9		
8241	1	0.00088458	Fracture of medial malleolus, open	9		
8242	4	0.00353832	Fracture of lateral malleolus, closed	9		
8244	39	0.03449862	Bimalleolar fracture, closed	9		
8245	2	0.00176916	Bimalleolar fracture, open	9		
8246	16	0.01415328	Trimalleolar fracture, closed	9		
8247	1	0.00088458	Trimalleolar fracture, open	9		
8248	10	0.0088458	Unspecified fracture of ankle, closed	9		
8250	3	0.00265374	Fracture of calcaneus, closed	9		
82521	1	0.00088458	Closed fracture of astragalus	9		
82525	4	0.00353832	Closed fracture of metatarsal bone(s)	9		
82535	1	0.00088458	Open fracture of metatarsal bone(s)	9		
8260	2	0.00176916	Closed fracture of one or more phalanges of foot	9		
8300	1	0.00088458	Closed dislocation of jaw	9		
83100	3	0.00265374	Closed dislocation of shoulder, unspecified	9		
83101	2	0.00176916	Closed anterior dislocation of humerus	9		
83500	2	0.00176916	Closed dislocation of hip, unspecified site	9		

8360	1	0.00088458	Tear of medial cartilage or meniscus of knee, current	9		
83650	1	0.00088458	Dislocation of knee, unspecified, closed	9		
83902	2	0.00176916	Closed dislocation, second cervical vertebra	9		
83905	1	0.00088458	Closed dislocation, fifth cervical vertebra	9		
83906	1	0.00088458	Closed dislocation, sixth cervical vertebra	9		
8404	4	0.00353832	Rotator cuff (capsule) sprain	9		
8408	1	0.00088458	Sprains and strains of other specified sites of shoulder and upper arm	9		
84209	1	0.00088458	Other sprains and strains of wrist	9		
8438	1	0.00088458	Sprains and strains of other specified sites of hip and thigh	9		
8439	3	0.00265374	Sprains and strains of unspecified site of hip and thigh	9		
8448	9	0.00796122	Sprains and strains of other specified sites of knee and leg	9		
8449	4	0.00353832	Sprains and strains of unspecified site of knee and leg	9		
84500	1	0.00088458	Sprain of ankle, unspecified site	9		
8460	1	0.00088458	Sprain of lumbosacral (joint) (ligament)	9		
8470	1	0.00088458	Sprain of neck	9		
8472	1	0.00088458	Sprain of lumbar	9		
8479	1	0.00088458	Sprain of unspecified site of back	9		
8488	4	0.00353832	Other specified sites of sprains and strains	9		
8489	1	0.00088458	Unspecified site of sprain and strain	9		
8500	9	0.00796122	Concussion with no loss of consciousness	9		
85011	4	0.00353832	Concussion, with loss of consciousness of 30 minutes or less	9		
8505	3	0.00265374	Concussion with loss of consciousness of unspecified duration	9		
8509	5	0.0044229	Concussion, unspecified	9		
85100	1	0.00088458	Cortex (cerebral) contusion without mention of open intracranial wound, unspecified state of consciousness	9		
85101	4	0.00353832	Cortex (cerebral) contusion without mention of open intracranial wound, with no loss of consciousness	9		
85140	1	0.00088458	Cerebellar or brain stem contusion without mention of open intracranial wound, unspecified state of consciousness	9		
85141	1	0.00088458	Cerebellar or brain stem contusion without mention of open intracranial wound, with no loss of consciousness	9		
85180	6	0.00530748	Other and unspecified cerebral laceration and contusion, without mention of open intracranial wound, unspecified state of consciousness	9		
85181	6	0.00530748	Other and unspecified cerebral laceration and contusion, without mention of open intracranial wound, with no loss of consciousness	9		
85182	1	0.00088458	Other and unspecified cerebral laceration and contusion, without mention of open intracranial wound, with brief [less than one hour] loss of consciousness	9		
85186	2	0.00176916	Other and unspecified cerebral laceration and contusion, without mention of open intracranial wound, with loss of consciousness of unspecified duration	9		
85400	1	0.00088458	Intracranial injury of other and unspecified nature without mention of open intracranial wound, unspecified state of consciousness	9		

8600	5	0.0044229	Traumatic pneumothorax without mention of open wound into thorax	9		
8602	13	0.01149954	Traumatic hemothorax without mention of open wound into thorax	9		
8604	8	0.00707664	Traumatic pneumohemothorax without mention of open wound into thorax	9		
86100	1	0.00088458	Unspecified injury of heart without mention of open wound into thorax	9		
86101	1	0.00088458	Contusion of heart without mention of open wound into thorax	9		
86121	3	0.00265374	Contusion of lung without mention of open wound into thorax	9		
86229	3	0.00265374	Injury to other specified intrathoracic organs without mention of open wound into cavity	9		
86389	2	0.00176916	Injury to other gastrointestinal sites, without mention of open wound into cavity	9		
86401	1	0.00088458	Injury to liver without mention of open wound into cavity, hematoma and contusion	9		
86402	1	0.00088458	Injury to liver without mention of open wound into cavity, laceration, minor	9		
86403	1	0.00088458	Injury to liver without mention of open wound into cavity, laceration, moderate	9		
86409	1	0.00088458	Other injury to liver without mention of open wound into cavity	9		
86412	1	0.00088458	Injury to liver with open wound into cavity, laceration, minor	9		
86500	2	0.00176916	Injury to spleen without mention of open wound into cavity, unspecified injury	9		
86501	2	0.00176916	Injury to spleen without mention of open wound into cavity, hematoma without rupture of capsule	9		
86503	1	0.00088458	Injury to spleen without mention of open wound into cavity, laceration extending into parenchyma	9		
86509	2	0.00176916	Other injury into spleen without mention of open wound into cavity	9		
86513	1	0.00088458	Injury to spleen with open wound into cavity, laceration extending into parenchyma	9		
86601	2	0.00176916	Injury to kidney without mention of open wound into cavity, hematoma without rupture of capsule	9		
8670	30	0.0265374	Injury to bladder and urethra, without mention of open wound into cavity	9		
8671	1	0.00088458	Injury to bladder and urethra, with open wound into cavity	9		
86800	1	0.00088458	Injury to other intra-abdominal organs without mention of open wound into cavity, unspecified intra-abdominal organ	9		
86803	1	0.00088458	Injury to other intra-abdominal organs without mention of open wound into cavity, peritoneum	9		
86804	8	0.00707664	Injury to other intra-abdominal organs without mention of open wound into cavity, retroperitoneum	9		
86813	1	0.00088458	Injury to spleen with open wound into cavity, laceration extending into parenchyma	9		
8690	1	0.00088458	Internal injury to unspecified or ill-defined organs without mention of open wound into cavity	9		
8700	1	0.00088458	Laceration of skin of eyelid and periocular area	9		
8712	1	0.00088458	Rupture of eye with partial loss of intraocular tissue	9		
87210	1	0.00088458	Open wound of external ear, unspecified site, complicated	9		
8730	12	0.01061496	Open wound of scalp, without mention of complication	9		
8731	1	0.00088458	Open wound of scalp, complicated	9		
87342	8	0.00707664	Open wound of forehead, without mention of complication	9		

87343	2	0.00176916	Open wound of lip, without mention of complication	9		
87364	2	0.00176916	Open wound of tongue and floor of mouth, without mention of complication	9		
87374	1	0.00088458	Open wound of tongue and floor of mouth, complicated	9		
87400	1	0.00088458	Open wound of larynx with trachea, without mention of complication	9		
8749	1	0.00088458	Open wound of other and unspecified parts of neck, complicated	9		
8750	1	0.00088458	Open wound of chest (wall), without mention of complication	9		
8780	1	0.00088458	Open wound of penis, without mention of complication	9		
8792	1	0.00088458	Open wound of abdominal wall, anterior, without mention of complication	9		
8793	1	0.00088458	Open wound of abdominal wall, anterior, complicated	9		
88100	1	0.00088458	Open wound of forearm, without mention of complication	9		
88101	3	0.00265374	Open wound of elbow, without mention of complication	9		
8820	3	0.00265374	Open wound of hand except finger(s) alone, without mention of complication	9		
8850	1	0.00088458	Traumatic amputation of thumb (complete)(partial), without mention of complication	9		
8900	1	0.00088458	Open wound of hip and thigh, without mention of complication	9		
8901	2	0.00176916	Open wound of hip and thigh, complicated	9		
8910	4	0.00353832	Open wound of knee, leg [except thigh], and ankle, without mention of complication	9		
8911	9	0.00796122	Open wound of knee, leg [except thigh], and ankle, complicated	9		
8912	1	0.00088458	Open wound of knee, leg [except thigh], and ankle, with tendon involvement	9		
8920	1	0.00088458	Open wound of foot except toe(s) alone, without mention of complication	9		
8921	3	0.00265374	Open wound of foot except toe(s) alone, complicated	9		
8941	1	0.00088458	Multiple and unspecified open wound of lower limb, complicated	9		
9031	1	0.00088458	Injury to brachial blood vessels	9		
9047	1	0.00088458	Injury to other specified blood vessels of lower extremity	9		
9051	1	0.00088458	Late effect of fracture of spine and trunk without mention of spinal cord lesion	9		
9100	3	0.00265374	Abrasion or friction burn of face, neck, and scalp except eye, without mention of infection	9		
9108	1	0.00088458	Other and unspecified superficial injury of face, neck, and scalp, without mention of infection	9		
9110	1	0.00088458	Abrasion or friction burn of trunk, without mention of infection	9		
9160	1	0.00088458	Abrasion or friction burn of hip, thigh, leg, and ankle, without mention of infection	9		
9189	1	0.00088458	Other and unspecified superficial injuries of eye	9		
920	32	0.02830656	Contusion of face, scalp, and neck except eye(s)	9		
9211	2	0.00176916	Contusion of eyelids and periocular area	9		
9212	1	0.00088458	Contusion of orbital tissues	9		
9221	11	0.00973038	Contusion of chest wall	9		
9222	17	0.01503786	Contusion of abdominal wall	9		
92232	6	0.00530748	Contusion of buttock	9		

92300	1	0.00088458	Contusion of shoulder region	9		
92303	2	0.00176916	Contusion of upper arm	9		
92310	2	0.00176916	Contusion of forearm	9		
9239	2	0.00176916	Contusion of unspecified part of upper limb	9		
92400	7	0.00619206	Contusion of thigh	9		
92401	15	0.0132687	Contusion of hip	9		
92410	10	0.0088458	Contusion of lower leg	9		
92411	7	0.00619206	Contusion of knee	9		
92420	1	0.00088458	Contusion of foot	9		
92421	2	0.00176916	Contusion of ankle	9		
9244	1	0.00088458	Contusion of multiple sites of lower limb	9		
9245	4	0.00353832	Contusion of unspecified part of lower limb	9		
9248	3	0.00265374	Contusion of multiple sites, not elsewhere classified	9		
95200	1	0.00088458	C1-C4 level with unspecified spinal cord injury	9		
95205	1	0.00088458	C5-C7 level with unspecified spinal cord injury	9		
9522	1	0.00088458	Lumbar spinal cord injury without evidence of spinal bone injury	9		
9551	1	0.00088458	Injury to median nerve	9		
9553	1	0.00088458	Injury to radial nerve	9		
9571	1	0.00088458	Injury to other specified nerve(s)	9		
9587	2	0.00176916	Traumatic subcutaneous emphysema	9		
95891	1	0.00088458	Traumatic compartment syndrome of upper extremity	9		
95892	2	0.00176916	Traumatic compartment syndrome of lower extremity	9		
95901	20	0.0176916	Head injury, unspecified	9		
95909	1	0.00088458	Injury of face and neck	9		
95911	3	0.00265374	Other injury of chest wall	9		
95912	1	0.00088458	Other injury of abdomen	9		
9593	1	0.00088458	Elbow, forearm, and wrist injury	9		
9596	1	0.00088458	Hip and thigh injury	9		
9598	2	0.00176916	Other specified sites, including multiple injury	9		
9623	31	0.02742198	Poisoning by insulins and antidiabetic agents	9		
9627	4	0.00353832	Poisoning by thyroid and thyroid derivatives	9		
9630	2	0.00176916	Poisoning by antiallergic and antiemetic drugs	9		
9642	64	0.05661312	Poisoning by anticoagulants	9		
9648	3	0.00265374	Poisoning by other specified agents affecting blood constituents	9		
96500	13	0.01149954	Poisoning by opium (alkaloids), unspecified	9		

96501	1	0.00088458	Poisoning by heroin	9		
96502	9	0.00796122	Poisoning by methadone	9		
96509	23	0.02034534	Poisoning by other opiates and related narcotics	9		
9651	1	0.00088458	Poisoning by salicylates	9		
9654	8	0.00707664	Poisoning by aromatic analgesics, not elsewhere classified	9		
96561	1	0.00088458	Poisoning by propionic acid derivatives	9		
9658	3	0.00265374	Poisoning by other specified analgesics and antipyretics	9		
9659	1	0.00088458	Poisoning by unspecified analgesic and antipyretic	9		
9661	4	0.00353832	Poisoning by hydantoin derivatives	9		
9663	4	0.00353832	Poisoning by other and unspecified anticonvulsants	9		
9678	13	0.01149954	Poisoning by other sedatives and hypnotics	9		
9679	12	0.01061496	Poisoning by unspecified sedative or hypnotic	9		
9680	2	0.00176916	Poisoning by central nervous system muscle-tone depressants	9		
96909	5	0.0044229	Poisoning by other antidepressants	9		
9691	1	0.00088458	Poisoning by phenothiazine-based tranquilizers	9		
9692	1	0.00088458	Poisoning by butyrophenone-based tranquilizers	9		
9693	3	0.00265374	Poisoning by other antipsychotics, neuroleptics, and major tranquilizers	9		
9694	28	0.02476824	Poisoning by benzodiazepine-based tranquilizers	9		
96972	6	0.00530748	Poisoning by amphetamines	9		
9698	1	0.00088458	Poisoning by other specified psychotropic agents	9		
9701	3	0.00265374	Poisoning by opiate antagonists	9		
9708	6	0.00530748	Poisoning by other specified central nervous system stimulants	9		
97081	23	0.02034534	Poisoning by cocaine	9		
9710	1	0.00088458	Poisoning by parasympathomimetics (cholinergics)	9		
9711	1	0.00088458	Poisoning by parasympatholytics (anticholinergics and antimuscarinics) and spasmolytics	9		
9713	18	0.01592244	Poisoning by sympatholytics [antiadrenergics]	9		
9720	12	0.01061496	Poisoning by cardiac rhythm regulators	9		
9721	37	0.03272946	Poisoning by cardiotonic glycosides and drugs of similar action	9		
9724	13	0.01149954	Poisoning by coronary vasodilators	9		
9726	33	0.02919114	Poisoning by other antihypertensive agents	9		
9729	15	0.0132687	Poisoning by other and unspecified agents primarily affecting the cardiovascular system	9		
9733	1	0.00088458	Poisoning by other cathartics, including intestinal atonia	9		
9743	4	0.00353832	Poisoning by saluretics	9		
9744	6	0.00530748	Poisoning by other diuretics	9		
9745	1	0.00088458	Poisoning by electrolytic, caloric, and water-balance agents	9		

9747	1	0.00088458	Poisoning by uric acid metabolism drugs	9		
9752	4	0.00353832	Poisoning by skeletal muscle relaxants	9		
9763	1	0.00088458	Poisoning by emollients, demulcents, and protectants	9		
9778	3	0.00265374	Poisoning by other specified drugs and medicinal substances	9		
9779	9	0.00796122	Poisoning by unspecified drug or medicinal substance	9		
9800	6	0.00530748	Toxic effect of ethyl alcohol	9		
9802	1	0.00088458	Toxic effect of isopropyl alcohol	9		
9828	1	0.00088458	Toxic effect of other nonpetroleum-based solvents	9		
986	1	0.00088458	Toxic effect of carbon monoxide	9		
9878	2	0.00176916	Toxic effect of other specified gases, fumes, or vapors	9		
99644	8	0.00707664	Peri-prosthetic fracture around prosthetic joint	9		
99833	1	0.00088458	Disruption of traumatic injury wound repair	9		
24900	2	0.00176916	Secondary diabetes mellitus without mention of complication, not stated as uncontrolled, or unspecified	10	A	
24901	1	0.00088458	Secondary diabetes mellitus without mention of complication, uncontrolled	10	A	
24921	1	0.00088458	Secondary diabetes mellitus with hyperosmolarity, uncontrolled	10	A	
24980	3	0.00265374	Secondary diabetes mellitus with other specified manifestations, not stated as uncontrolled, or unspecified	10	A	
24981	1	0.00088458	Secondary diabetes mellitus with other specified manifestations, uncontrolled	10	A	
25000	9	0.00796122	Diabetes mellitus without mention of complication, type II or unspecified type, not stated as uncontrolled	10	A	
25002	63	0.05572854	Diabetes mellitus without mention of complication, type II or unspecified type, uncontrolled	10	A	
25003	2	0.00176916	Diabetes mellitus without mention of complication, type I [juvenile type], uncontrolled	10	A	
25012	28	0.02476824	Diabetes with ketoacidosis, type II or unspecified type, uncontrolled	10	A	
25013	28	0.02476824	Diabetes with ketoacidosis, type I [juvenile type], uncontrolled	10	A	
25020	11	0.00973038	Diabetes with hyperosmolarity, type II or unspecified type, not stated as uncontrolled	10	A	
25022	12	0.01061496	Diabetes with hyperosmolarity, type II or unspecified type, uncontrolled	10	A	
25030	10	0.0088458	Diabetes with other coma, type II or unspecified type, not stated as uncontrolled	10	A	
25032	6	0.00530748	Diabetes with other coma, type II or unspecified type, uncontrolled	10	A	
25033	1	0.00088458	Diabetes with other coma, type I [juvenile type], uncontrolled	10	A	
25040	21	0.01857618	Diabetes with renal manifestations, type II or unspecified type, not stated as uncontrolled	10	A	
25041	2	0.00176916	Diabetes with renal manifestations, type I [juvenile type], not stated as uncontrolled	10	A	
25042	6	0.00530748	Diabetes with renal manifestations, type II or unspecified type, uncontrolled	10	A	
25052	1	0.00088458	Diabetes with ophthalmic manifestations, type II or unspecified type, uncontrolled	10	A	
25060	87	0.07695846	Diabetes with neurological manifestations, type II or unspecified type, not stated as uncontrolled	10	A	
25061	4	0.00353832	Diabetes with neurological manifestations, type I [juvenile type], not stated as uncontrolled	10	A	

25062	32	0.02830656	Diabetes with neurological manifestations, type II or unspecified type, uncontrolled	10	A	
25063	2	0.00176916	Diabetes with neurological manifestations, type I [juvenile type], uncontrolled	10	A	
25070	55	0.0486519	Diabetes with peripheral circulatory disorders, type II or unspecified type, not stated as uncontrolled	10	A	
25071	1	0.00088458	Diabetes with peripheral circulatory disorders, type I [juvenile type], not stated as uncontrolled	10	A	
25072	11	0.00973038	Diabetes with peripheral circulatory disorders, type II or unspecified type, uncontrolled	10	A	
25073	2	0.00176916	Diabetes with peripheral circulatory disorders, type I [juvenile type], uncontrolled	10	A	
25080	352	0.31137216	Diabetes with other specified manifestations, type II or unspecified type, not stated as uncontrolled	10	A	
25081	6	0.00530748	Diabetes with other specified manifestations, type I [juvenile type], not stated as uncontrolled	10	A	
25082	63	0.05572854	Diabetes with other specified manifestations, type II or unspecified type, uncontrolled	10	A	
25083	4	0.00353832	Diabetes with other specified manifestations, type I [juvenile type], uncontrolled	10	A	
25090	1	0.00088458	Diabetes with unspecified complication, type II or unspecified type, not stated as uncontrolled	10	A	
25092	3	0.00265374	Diabetes with unspecified complication, type II or unspecified type, uncontrolled	10	A	
2409	1	0.00088458	Goiter, unspecified	10	B	
2410	2	0.00176916	Nontoxic uninodular goiter	10	B	
2411	5	0.0044229	Nontoxic multinodular goiter	10	B	
24200	25	0.0221145	Toxic diffuse goiter without mention of thyrotoxic crisis or storm	10	B	
24201	7	0.00619206	Toxic diffuse goiter with mention of thyrotoxic crisis or storm	10	B	
24210	3	0.00265374	Toxic uninodular goiter without mention of thyrotoxic crisis or storm	10	B	
24220	10	0.0088458	Toxic multinodular goiter without mention of thyrotoxic crisis or storm	10	B	
24221	3	0.00265374	Toxic multinodular goiter with mention of thyrotoxic crisis or storm	10	B	
24280	14	0.01238412	Thyrotoxicosis of other specified origin without mention of thyrotoxic crisis or storm	10	B	
24281	2	0.00176916	Thyrotoxicosis of other specified origin with mention of thyrotoxic crisis or storm	10	B	
24290	44	0.03892152	Thyrotoxicosis without mention of goiter or other cause, and without mention of thyrotoxic crisis or storm	10	B	
24291	6	0.00530748	Thyrotoxicosis without mention of goiter or other cause, with mention of thyrotoxic crisis or storm	10	B	
2440	1	0.00088458	Postsurgical hypothyroidism	10	B	
2443	1	0.00088458	Other iatrogenic hypothyroidism	10	B	
2448	1	0.00088458	Other specified acquired hypothyroidism	10	B	
2449	10	0.0088458	Unspecified acquired hypothyroidism	10	B	
2452	1	0.00088458	Chronic lymphocytic thyroiditis	10	B	
2459	1	0.00088458	Thyroiditis, unspecified	10	B	
2511	8	0.00707664	Other specified hypoglycemia	10	B	
2512	21	0.01857618	Hypoglycemia, unspecified	10	B	

25200	3	0.00265374	Hyperparathyroidism, unspecified	10	B	
25201	8	0.00707664	Primary hyperparathyroidism	10	B	
25202	1	0.00088458	Secondary hyperparathyroidism, non-renal	10	B	
25208	2	0.00176916	Other hyperparathyroidism	10	B	
2521	3	0.00265374	Hypoparathyroidism	10	B	
2532	1	0.00088458	Panhypopituitarism	10	B	
2535	1	0.00088458	Diabetes insipidus	10	B	
2536	169	0.14949402	Other disorders of neurohypophysis	10	B	
2537	1	0.00088458	Iatrogenic pituitary disorders	10	B	
25510	1	0.00088458	Hyperaldosteronism, unspecified	10	B	
25541	27	0.02388366	Glucocorticoid deficiency	10	B	
25542	1	0.00088458	Mineralocorticoid deficiency	10	B	
2555	2	0.00176916	Other adrenal hypofunction	10	B	
2558	1	0.00088458	Other specified disorders of adrenal glands	10	B	
2559	1	0.00088458	Unspecified disorder of adrenal glands	10	B	
2598	1	0.00088458	Other specified endocrine disorders	10	B	
1410	2	0.00176916	Malignant neoplasm of base of tongue	11		
1412	1	0.00088458	Malignant neoplasm of tip and lateral border of tongue	11		
1419	1	0.00088458	Malignant neoplasm of tongue, unspecified	11		
1420	2	0.00176916	Malignant neoplasm of parotid gland	11		
1440	1	0.00088458	Malignant neoplasm of anterior portion of floor of mouth	11		
1449	2	0.00176916	Malignant neoplasm of floor of mouth, part unspecified	11		
1469	2	0.00176916	Malignant neoplasm of oropharynx, unspecified site	11		
1481	1	0.00088458	Malignant neoplasm of pyriform sinus	11		
1489	1	0.00088458	Malignant neoplasm of hypopharynx, unspecified site	11		
1490	1	0.00088458	Malignant neoplasm of pharynx, unspecified	11		
1500	1	0.00088458	Malignant neoplasm of cervical esophagus	11		
1503	2	0.00176916	Malignant neoplasm of upper third of esophagus	11		
1504	3	0.00265374	Malignant neoplasm of middle third of esophagus	11		
1505	6	0.00530748	Malignant neoplasm of lower third of esophagus	11		
1508	4	0.00353832	Malignant neoplasm of other specified part of esophagus	11		
1509	21	0.01857618	Malignant neoplasm of esophagus, unspecified site	11		
1510	17	0.01503786	Malignant neoplasm of cardia	11		
1512	4	0.00353832	Malignant neoplasm of pyloric antrum	11		
1513	1	0.00088458	Malignant neoplasm of fundus of stomach	11		

1514	3	0.00265374	Malignant neoplasm of body of stomach	11		
1515	1	0.00088458	Malignant neoplasm of lesser curvature of stomach, unspecified	11		
1516	1	0.00088458	Malignant neoplasm of greater curvature of stomach, unspecified	11		
1518	5	0.0044229	Malignant neoplasm of other specified sites of stomach	11		
1519	14	0.01238412	Malignant neoplasm of stomach, unspecified site	11		
1520	4	0.00353832	Malignant neoplasm of duodenum	11		
1522	1	0.00088458	Malignant neoplasm of ileum	11		
1529	1	0.00088458	Malignant neoplasm of small intestine, unspecified site	11		
1530	6	0.00530748	Malignant neoplasm of hepatic flexure	11		
1531	19	0.01680702	Malignant neoplasm of transverse colon	11		
1532	5	0.0044229	Malignant neoplasm of descending colon	11		
1533	31	0.02742198	Malignant neoplasm of sigmoid colon	11		
1534	35	0.0309603	Malignant neoplasm of cecum	11		
1536	47	0.04157526	Malignant neoplasm of ascending colon	11		
1537	3	0.00265374	Malignant neoplasm of splenic flexure	11		
1538	6	0.00530748	Malignant neoplasm of other specified sites of large intestine	11		
1539	23	0.02034534	Malignant neoplasm of colon, unspecified site	11		
1540	12	0.01061496	Malignant neoplasm of rectosigmoid junction	11		
1541	31	0.02742198	Malignant neoplasm of rectum	11		
1543	3	0.00265374	Malignant neoplasm of anus, unspecified site	11		
1548	3	0.00265374	Malignant neoplasm of other sites of rectum, rectosigmoid junction, and anus	11		
1550	30	0.0265374	Malignant neoplasm of liver, primary	11		
1551	6	0.00530748	Malignant neoplasm of intrahepatic bile ducts	11		
1560	5	0.0044229	Malignant neoplasm of gallbladder	11		
1561	6	0.00530748	Malignant neoplasm of extrahepatic bile ducts	11		
1569	2	0.00176916	Malignant neoplasm of biliary tract, part unspecified site	11		
1570	21	0.01857618	Malignant neoplasm of head of pancreas	11		
1571	2	0.00176916	Malignant neoplasm of body of pancreas	11		
1572	3	0.00265374	Malignant neoplasm of tail of pancreas	11		
1574	2	0.00176916	Malignant neoplasm of islets of langerhans	11		
1578	7	0.00619206	Malignant neoplasm of other specified sites of pancreas	11		
1579	29	0.02565282	Malignant neoplasm of pancreas, part unspecified	11		
1580	3	0.00265374	Malignant neoplasm of retroperitoneum	11		
1588	1	0.00088458	Malignant neoplasm of specified parts of peritoneum	11		
1589	1	0.00088458	Malignant neoplasm of peritoneum, unspecified	11		

1602	2	0.00176916	Malignant neoplasm of maxillary sinus	11		
1610	2	0.00176916	Malignant neoplasm of glottis	11		
1611	5	0.0044229	Malignant neoplasm of supraglottis	11		
1612	1	0.00088458	Malignant neoplasm of subglottis	11		
1619	1	0.00088458	Malignant neoplasm of larynx, unspecified	11		
1620	2	0.00176916	Malignant neoplasm of trachea	11		
1622	43	0.03803694	Malignant neoplasm of main bronchus	11		
1623	117	0.10349586	Malignant neoplasm of upper lobe, bronchus or lung	11		
1624	10	0.0088458	Malignant neoplasm of middle lobe, bronchus or lung	11		
1625	63	0.05572854	Malignant neoplasm of lower lobe, bronchus or lung	11		
1628	39	0.03449862	Malignant neoplasm of other parts of bronchus or lung	11		
1629	256	0.22645248	Malignant neoplasm of bronchus and lung, unspecified	11		
1630	1	0.00088458	Malignant neoplasm of parietal pleura	11		
1639	2	0.00176916	Malignant neoplasm of pleura, unspecified	11		
1640	4	0.00353832	Malignant neoplasm of thymus	11		
1641	1	0.00088458	Malignant neoplasm of heart	11		
1642	1	0.00088458	Malignant neoplasm of anterior mediastinum	11		
1649	3	0.00265374	Malignant neoplasm of mediastinum, part unspecified	11		
1659	1	0.00088458	Malignant neoplasm of ill-defined sites within the respiratory system	11		
1700	1	0.00088458	Malignant neoplasm of bones of skull and face, except mandible	11		
1701	1	0.00088458	Malignant neoplasm of mandible	11		
1702	1	0.00088458	Malignant neoplasm of vertebral column, excluding sacrum and coccyx	11		
1712	2	0.00176916	Malignant neoplasm of connective and other soft tissue of upper limb, including shoulder	11		
1713	4	0.00353832	Malignant neoplasm of connective and other soft tissue of lower limb, including hip	11		
1715	3	0.00265374	Malignant neoplasm of connective and other soft tissue of abdomen	11		
1716	1	0.00088458	Malignant neoplasm of connective and other soft tissue of pelvis	11		
1719	2	0.00176916	Malignant neoplasm of connective and other soft tissue, site unspecified	11		
1727	2	0.00176916	Malignant melanoma of skin of lower limb, including hip	11		
1729	1	0.00088458	Melanoma of skin, site unspecified	11		
17322	2	0.00176916	Squamous cell carcinoma of skin of ear and external auditory canal	11		
1733	1	0.00088458	Oth and unspec malignant neoplasm of skin of oth and unspec parts of face	11		
1734	1	0.00088458	Oth and unspec malignant neoplasm of scalp and skin of neck	11		
17342	2	0.00176916	Squamous cell carcinoma of scalp and skin of neck	11		
1736	1	0.00088458	Oth and unspec malignant neoplasm of skin of upper limb, including shoulder	11		
17372	1	0.00088458	Squamous cell carcinoma of skin of lower limb, including hip	11		

17379	1	0.00088458	Other specified malignant neoplasm of skin of lower limb, including hip	11		
17381	1	0.00088458	Basal cell carcinoma of other specified sites of skin	11		
1741	2	0.00176916	Malignant neoplasm of central portion of female breast	11		
1742	3	0.00265374	Malignant neoplasm of upper-inner quadrant of female breast	11		
1743	2	0.00176916	Malignant neoplasm of lower-inner quadrant of female breast	11		
1744	8	0.00707664	Malignant neoplasm of upper-outer quadrant of female breast	11		
1745	1	0.00088458	Malignant neoplasm of lower-outer quadrant of female breast	11		
1748	7	0.00619206	Malignant neoplasm of other specified sites of female breast	11		
1749	29	0.02565282	Malignant neoplasm of breast (female), unspecified	11		
179	3	0.00265374	Malignant neoplasm of uterus, part unspecified	11		
1800	1	0.00088458	Malignant neoplasm of endocervix	11		
1801	1	0.00088458	Malignant neoplasm of exocervix	11		
1808	1	0.00088458	Malignant neoplasm of other specified sites of cervix	11		
1809	5	0.0044229	Malignant neoplasm of cervix uteri, unspecified site	11		
1820	37	0.03272946	Malignant neoplasm of corpus uteri, except isthmus	11		
1830	22	0.01946076	Malignant neoplasm of ovary	11		
1832	1	0.00088458	Malignant neoplasm of fallopian tube	11		
1839	1	0.00088458	Malignant neoplasm of uterine adnexa, unspecified site	11		
1840	2	0.00176916	Malignant neoplasm of vagina	11		
1841	1	0.00088458	Malignant neoplasm of labia majora	11		
1844	2	0.00176916	Malignant neoplasm of vulva, unspecified site	11		
185	50	0.044229	Malignant neoplasm of prostate	11		
1872	1	0.00088458	Malignant neoplasm of glans penis	11		
1874	2	0.00176916	Malignant neoplasm of penis, part unspecified	11		
1878	1	0.00088458	Malignant neoplasm of other specified sites of male genital organs	11		
1880	2	0.00176916	Malignant neoplasm of trigone of urinary bladder	11		
1881	1	0.00088458	Malignant neoplasm of dome of urinary bladder	11		
1882	5	0.0044229	Malignant neoplasm of lateral wall of urinary bladder	11		
1885	2	0.00176916	Malignant neoplasm of bladder neck	11		
1886	1	0.00088458	Malignant neoplasm of ureteric orifice	11		
1887	1	0.00088458	Malignant neoplasm of urachus	11		
1888	18	0.01592244	Malignant neoplasm of other specified sites of bladder	11		
1889	28	0.02476824	Malignant neoplasm of bladder, part unspecified	11		
1890	61	0.05395938	Malignant neoplasm of kidney, except pelvis	11		
1891	4	0.00353832	Malignant neoplasm of renal pelvis	11		

1892	2	0.00176916	Malignant neoplasm of ureter	11		
1899	1	0.00088458	Malignant neoplasm of urinary organ, site unspecified	11		
1912	2	0.00176916	Malignant neoplasm of temporal lobe	11		
1913	2	0.00176916	Malignant neoplasm of parietal lobe	11		
1914	1	0.00088458	Malignant neoplasm of occipital lobe	11		
1918	1	0.00088458	Malignant neoplasm of other parts of brain	11		
1919	9	0.00796122	Malignant neoplasm of brain, unspecified	11		
193	11	0.00973038	Malignant neoplasm of thyroid gland	11		
1952	1	0.00088458	Malignant neoplasm of abdomen	11		
1953	2	0.00176916	Malignant neoplasm of pelvis	11		
1958	2	0.00176916	Malignant neoplasm of other specified sites	11		
1960	9	0.00796122	Secondary and unspecified malignant neoplasm of lymph nodes of head, face, and neck	11		
1961	5	0.0044229	Secondary and unspecified malignant neoplasm of intrathoracic lymph nodes	11		
1962	4	0.00353832	Secondary and unspecified malignant neoplasm of intra-abdominal lymph nodes	11		
1963	2	0.00176916	Secondary and unspecified malignant neoplasm of lymph nodes of axilla and upper limb	11		
1965	1	0.00088458	Secondary and unspecified malignant neoplasm of lymph nodes of inguinal region and lower limb	11		
1966	2	0.00176916	Secondary and unspecified malignant neoplasm of intrapelvic lymph nodes	11		
1970	60	0.0530748	Secondary malignant neoplasm of lung	11		
1971	4	0.00353832	Secondary malignant neoplasm of mediastinum	11		
1972	15	0.0132687	Secondary malignant neoplasm of pleura	11		
1974	6	0.00530748	Secondary malignant neoplasm of small intestine including duodenum	11		
1975	5	0.0044229	Secondary malignant neoplasm of large intestine and rectum	11		
1976	17	0.01503786	Secondary malignant neoplasm of retroperitoneum and peritoneum	11		
1977	41	0.03626778	Malignant neoplasm of liver, secondary	11		
1978	11	0.00973038	Secondary malignant neoplasm of other digestive organs and spleen	11		
1980	1	0.00088458	Secondary malignant neoplasm of kidney	11		
1981	3	0.00265374	Secondary malignant neoplasm of other urinary organs	11		
1982	3	0.00265374	Secondary malignant neoplasm of skin	11		
1983	59	0.05219022	Secondary malignant neoplasm of brain and spinal cord	11		
1984	2	0.00176916	Secondary malignant neoplasm of other parts of nervous system	11		
1985	60	0.0530748	Secondary malignant neoplasm of bone and bone marrow	11		
1987	1	0.00088458	Secondary malignant neoplasm of adrenal gland	11		
19882	3	0.00265374	Secondary malignant neoplasm of genital organs	11		
19889	22	0.01946076	Secondary malignant neoplasm of other specified sites	11		
1990	2	0.00176916	Disseminated malignant neoplasm without specification of site	11		

1991	7	0.00619206	Other malignant neoplasm without specification of site	11		
20010	1	0.00088458	Lymphosarcoma, unspecified site, extranodal and solid organ sites	11		
20020	2	0.00176916	Burkitt's tumor or lymphoma, unspecified site, extranodal and solid organ sites	11		
20028	1	0.00088458	Burkitt's tumor or lymphoma, lymph nodes of multiple sites	11		
20040	2	0.00176916	Mantle cell lymphoma, unspecified site, extranodal and solid organ sites	11		
20048	1	0.00088458	Mantle cell lymphoma, lymph nodes of multiple sites	11		
20051	1	0.00088458	Primary central nervous system lymphoma, lymph nodes of head, face, and neck	11		
20060	2	0.00176916	Anaplastic large cell lymphoma, unspecified site, extranodal and solid organ sites	11		
20065	1	0.00088458	Anaplastic large cell lymphoma, lymph nodes of inguinal region and lower limb	11		
20068	1	0.00088458	Anaplastic large cell lymphoma, lymph nodes of multiple sites	11		
20070	3	0.00265374	Large cell lymphoma, unspecified site, extranodal and solid organ sites	11		
20071	1	0.00088458	Large cell lymphoma, lymph nodes of head, face, and neck	11		
20073	1	0.00088458	Large cell lymphoma, intra-abdominal lymph nodes	11		
20074	1	0.00088458	Large cell lymphoma, lymph nodes of axilla and upper limb	11		
20080	2	0.00176916	Other named variants of lymphosarcoma and reticulosarcoma, unspecified site, extranodal and solid organ sites	11		
20150	1	0.00088458	Hodgkin's disease, nodular sclerosis, unspecified site, extranodal and solid organ sites	11		
20168	1	0.00088458	Hodgkin's disease, mixed cellularity, lymph nodes of multiple sites	11		
20190	1	0.00088458	Hodgkin's disease, unspecified type, unspecified site, extranodal and solid organ sites	11		
20191	1	0.00088458	Hodgkin's disease, unspecified type, lymph nodes of head, face, and neck	11		
20192	1	0.00088458	Hodgkin's disease, unspecified type, intrathoracic lymph nodes	11		
20194	2	0.00176916	Hodgkin's disease, unspecified type, lymph nodes of axilla and upper limb	11		
20200	2	0.00176916	Nodular lymphoma, unspecified site, extranodal and solid organ sites	11		
20210	6	0.00530748	Mycosis fungoides, unspecified site, extranodal and solid organ sites	11		
20211	1	0.00088458	Mycosis fungoides, lymph nodes of head, face, and neck	11		
20212	1	0.00088458	Mycosis fungoides, intrathoracic lymph nodes	11		
20218	2	0.00176916	Mycosis fungoides, lymph nodes of multiple sites	11		
20270	2	0.00176916	Peripheral T cell lymphoma, unspecified site, extranodal and solid organ sites	11		
20280	34	0.03007572	Other malignant lymphomas, unspecified site, extranodal and solid organ sites	11		
20281	3	0.00265374	Other malignant lymphomas, lymph nodes of head, face, and neck	11		
20282	5	0.0044229	Other malignant lymphomas, intrathoracic lymph nodes	11		
20283	10	0.0088458	Other malignant lymphomas, intra-abdominal lymph nodes	11		
20284	1	0.00088458	Other malignant lymphomas, lymph nodes of axilla and upper limb	11		
20286	3	0.00265374	Other malignant lymphomas, intrapelvic lymph nodes	11		
20288	10	0.0088458	Other malignant lymphomas, lymph nodes of multiple sites	11		
20300	40	0.0353832	Multiple myeloma, without mention of having achieved remission	11		

20301	1	0.00088458	Multiple myeloma, in remission	11		
20302	5	0.0044229	Multiple myeloma, in relapse	11		
20310	1	0.00088458	Plasma cell leukemia, without mention of having achieved remission	11		
20380	1	0.00088458	Other immunoproliferative neoplasms, without mention of having achieved remission	11		
20400	6	0.00530748	Acute lymphoid leukemia, without mention of having achieved remission	11		
20410	12	0.01061496	Chronic lymphoid leukemia, without mention of having achieved remission	11		
20411	1	0.00088458	Chronic lymphoid leukemia, in remission	11		
20412	4	0.00353832	Chronic lymphoid leukemia, in relapse	11		
20480	3	0.00265374	Other lymphoid leukemia, without mention of having achieved remission	11		
20500	25	0.0221145	Acute myeloid leukemia, without mention of having achieved remission	11		
20502	2	0.00176916	Acute myeloid leukemia, in relapse	11		
20510	7	0.00619206	Chronic myeloid leukemia, without mention of having achieved remission	11		
20530	1	0.00088458	Myeloid sarcoma, without mention of having achieved remission	11		
20610	1	0.00088458	Chronic monocytic leukemia, without mention of having achieved remission	11		
20800	5	0.0044229	Acute leukemia of unspecified cell type, without mention of having achieved remission	11		
20802	1	0.00088458	Acute leukemia of unspecified cell type, in relapse	11		
20901	1	0.00088458	Malignant carcinoid tumor of the duodenum	11		
20912	1	0.00088458	Malignant carcinoid tumor of the cecum	11		
20920	1	0.00088458	Malignant carcinoid tumor of unknown primary site	11		
20921	5	0.0044229	Malignant carcinoid tumor of the bronchus and lung	11		
20929	3	0.00265374	Malignant carcinoid tumor of other sites	11		
20940	1	0.00088458	Benign carcinoid tumor of the small intestine, unspecified portion	11		
20941	1	0.00088458	Benign carcinoid tumor of the duodenum	11		
20943	2	0.00176916	Benign carcinoid tumor of the ileum	11		
20961	1	0.00088458	Benign carcinoid tumor of the bronchus and lung	11		
20963	1	0.00088458	Benign carcinoid tumor of the stomach	11		
20971	1	0.00088458	Secondary neuroendocrine tumor of distant lymph nodes	11		
20972	2	0.00176916	Secondary neuroendocrine tumor of liver	11		
20974	1	0.00088458	Secondary neuroendocrine tumor of peritoneum	11		
2111	11	0.00973038	Benign neoplasm of stomach	11		
2112	2	0.00176916	Benign neoplasm of duodenum, jejunum, and ileum	11		
2113	33	0.02919114	Benign neoplasm of colon	11		
2114	7	0.00619206	Benign neoplasm of rectum and anal canal	11		
2115	1	0.00088458	Benign neoplasm of liver and biliary passages	11		
2116	1	0.00088458	Benign neoplasm of pancreas, except islets of Langerhans	11		

2121	1	0.00088458	Benign neoplasm of larynx	11		
2123	1	0.00088458	Benign neoplasm of bronchus and lung	11		
2124	1	0.00088458	Benign neoplasm of pleura	11		
2126	2	0.00176916	Benign neoplasm of thymus	11		
2127	12	0.01061496	Benign neoplasm of heart	11		
2143	2	0.00176916	Lipoma of intra-abdominal organs	11		
2153	1	0.00088458	Other benign neoplasm of connective and other soft tissue of lower limb, including hip	11		
2159	1	0.00088458	Other benign neoplasm of connective and other soft tissue, site unspecified	11		
2180	2	0.00176916	Submucous leiomyoma of uterus	11		
2189	5	0.0044229	Leiomyoma of uterus, unspecified	11		
220	4	0.00353832	Benign neoplasm of ovary	11		
2230	3	0.00265374	Benign neoplasm of kidney, except pelvis	11		
2231	1	0.00088458	Benign neoplasm of renal pelvis	11		
2233	1	0.00088458	Benign neoplasm of bladder	11		
2250	1	0.00088458	Benign neoplasm of brain	11		
2251	1	0.00088458	Benign neoplasm of cranial nerves	11		
2252	18	0.01592244	Benign neoplasm of cerebral meninges	11		
2254	2	0.00176916	Benign neoplasm of spinal meninges	11		
226	3	0.00265374	Benign neoplasm of thyroid glands	11		
2270	2	0.00176916	Benign neoplasm of adrenal gland	11		
2271	4	0.00353832	Benign neoplasm of parathyroid gland	11		
2273	4	0.00353832	Benign neoplasm of pituitary gland and craniopharyngeal duct	11		
22802	1	0.00088458	Hemangioma of intracranial structures	11		
22809	1	0.00088458	Hemangioma of other sites	11		
2299	1	0.00088458	Benign neoplasm of unspecified site	11		
2309	1	0.00088458	Carcinoma in situ of other and unspecified digestive organs	11		
2312	2	0.00176916	Carcinoma in situ of bronchus and lung	11		
2330	4	0.00353832	Carcinoma in situ of breast	11		
23332	2	0.00176916	Carcinoma in situ, vulva	11		
2352	4	0.00353832	Neoplasm of uncertain behavior of stomach, intestines, and rectum	11		
2354	1	0.00088458	Neoplasm of uncertain behavior of retroperitoneum and peritoneum	11		
2355	2	0.00176916	Neoplasm of uncertain behavior of other and unspecified digestive organs	11		
2357	2	0.00176916	Neoplasm of uncertain behavior of trachea, bronchus, and lung	11		
2358	1	0.00088458	Neoplasm of uncertain behavior of pleura, thymus, and mediastinum	11		
2362	3	0.00265374	Neoplasm of uncertain behavior of ovary	11		

23691	1	0.00088458	Neoplasm of uncertain behavior of kidney and ureter	11		
2372	1	0.00088458	Neoplasm of uncertain behavior of adrenal gland	11		
2375	4	0.00353832	Neoplasm of uncertain behavior of brain and spinal cord	11		
2376	1	0.00088458	Neoplasm of uncertain behavior of meninges	11		
2381	1	0.00088458	Neoplasm of uncertain behavior of connective and other soft tissue	11		
23871	1	0.00088458	Essential thrombocythemia	11		
23872	2	0.00176916	Low grade myelodysplastic syndrome lesions	11		
23873	2	0.00176916	High grade myelodysplastic syndrome lesions	11		
23875	38	0.03361404	Myelodysplastic syndrome, unspecified	11		
23876	2	0.00176916	Myelofibrosis with myeloid metaplasia	11		
23879	4	0.00353832	Other lymphatic and hematopoietic tissues	11		
2390	7	0.00619206	Neoplasm of unspecified nature of digestive system	11		
2391	3	0.00265374	Neoplasm of unspecified nature of respiratory system	11		
2392	2	0.00176916	Neoplasm of unspecified nature of bone, soft tissue, and skin	11		
2394	3	0.00265374	Neoplasm of unspecified nature of bladder	11		
2395	1	0.00088458	Neoplasm of unspecified nature of other genitourinary organs	11		
2396	3	0.00265374	Neoplasm of unspecified nature of brain	11		
2397	4	0.00353832	Neoplasm of unspecified nature of endocrine glands and other parts of nervous system	11		
4560	5	0.0044229	Esophageal varices with bleeding	12	A	
53021	40	0.0353832	Ulcer of esophagus with bleeding	12	A	
5307	39	0.03449862	Gastroesophageal laceration-hemorrhage syndrome	12	A	
53082	11	0.00973038	Esophageal hemorrhage	12	A	
53100	31	0.02742198	Acute gastric ulcer with hemorrhage, without mention of obstruction	12	A	
53140	206	0.18222348	Chronic or unspecified gastric ulcer with hemorrhage, without mention of obstruction	12	A	
53141	1	0.00088458	Chronic or unspecified gastric ulcer with hemorrhage, with obstruction	12	A	
53161	1	0.00088458	Chronic or unspecified gastric ulcer with hemorrhage and perforation, with obstruction	12	A	
53171	1	0.00088458	Chronic gastric ulcer without mention of hemorrhage or perforation, with obstruction	12	A	
53200	30	0.0265374	Acute duodenal ulcer with hemorrhage, without mention of obstruction	12	A	
53240	207	0.18310806	Chronic or unspecified duodenal ulcer with hemorrhage, without mention of obstruction	12	A	
53241	1	0.00088458	Chronic or unspecified duodenal ulcer with hemorrhage, with obstruction	12	A	
53260	2	0.00176916	Chronic or unspecified duodenal ulcer with hemorrhage and perforation, without mention of obstruction	12	A	
53300	3	0.00265374	Acute peptic ulcer of unspecified site with hemorrhage, without mention of obstruction	12	A	
53340	14	0.01238412	Chronic or unspecified peptic ulcer of unspecified site with hemorrhage, without mention of obstruction	12	A	
53400	1	0.00088458	Acute gastrojejunal ulcer with hemorrhage, without mention of obstruction	12	A	

53440	18	0.01592244	Chronic or unspecified gastrojejunal ulcer with hemorrhage, without mention of obstruction	12	A	
53501	21	0.01857618	Acute gastritis, with hemorrhage	12	A	
53511	8	0.00707664	Atrophic gastritis, with hemorrhage	12	A	
53531	5	0.0044229	Alcoholic gastritis, with hemorrhage	12	A	
53541	90	0.0796122	Other specified gastritis, with hemorrhage	12	A	
53551	61	0.05395938	Unspecified gastritis and gastroduodenitis, with hemorrhage	12	A	
53561	7	0.00619206	Duodenitis, with hemorrhage	12	A	
53783	135	0.1194183	Angiodysplasia of stomach and duodenum with hemorrhage	12	A	
53784	36	0.03184488	Dieulafoy lesion (hemorrhagic) of stomach and duodenum	12	A	
56203	1	0.00088458	Diverticulitis of small intestine with hemorrhage	12	A	
56212	284	0.25122072	Diverticulosis of colon with hemorrhage	12	A	
56213	47	0.04157526	Diverticulitis of colon with hemorrhage	12	A	
56881	45	0.0398061	Hemoperitoneum (nontraumatic)	12	A	
5693	200	0.176916	Hemorrhage of rectum and anus	12	A	
5780	85	0.0751893	Hematemesis	12	A	
5781	353	0.31225674	Blood in stool	12	A	
5789	1076	0.95180808	Hemorrhage of gastrointestinal tract, unspecified	12	A	
430	19	0.01680702	Subarachnoid hemorrhage	12	B	I
431	119	0.10526502	Intracerebral hemorrhage	12	B	I
4320	1	0.00088458	Nontraumatic extradural hemorrhage	12	B	I
4321	67	0.05926686	Subdural hemorrhage	12	B	I
4329	18	0.01592244	Unspecified intracranial hemorrhage	12	B	I
80121	4	0.00353832	Closed fracture of base of skull with subarachnoid, subdural, and extradural hemorrhage, with no loss of consciousness	12	B	II
80126	1	0.00088458	Closed fracture of base of skull with subarachnoid, subdural, and extradural hemorrhage, with loss of consciousness of unspecified duration	12	B	II
80321	1	0.00088458	Other closed skull fracture with subarachnoid, subdural, and extradural hemorrhage, with no loss of consciousness	12	B	II
80322	1	0.00088458	Other closed skull fracture with subarachnoid, subdural, and extradural hemorrhage, with brief [less than one hour] loss of consciousness	12	B	II
80326	1	0.00088458	Other closed skull fracture with subarachnoid, subdural, and extradural hemorrhage, with loss of consciousness of unspecified duration	12	B	II
80422	1	0.00088458	Closed fractures involving skull or face with other bones with subarachnoid, subdural, and extradural hemorrhage, with brief [less than one hour] loss of consciousness	12	B	II
85200	14	0.01238412	Subarachnoid hemorrhage following injury without mention of open intracranial wound, unspecified state of consciousness	12	B	II
85201	26	0.02299908	Subarachnoid hemorrhage following injury without mention of open intracranial wound, with no loss of consciousness	12	B	II
85202	8	0.00707664	Subarachnoid hemorrhage following injury without mention of open intracranial wound, with brief [less than one hour] loss of consciousness	12	B	II

85205	1	0.00088458	Subarachnoid hemorrhage following injury without mention of open intracranial wound, with prolonged [more than 24 hours] loss of consciousness without return to pre-existing conscious level	12	B	II
85206	8	0.00707664	Subarachnoid hemorrhage following injury without mention of open intracranial wound, with loss of consciousness of unspecified duration	12	B	II
85209	2	0.00176916	Subarachnoid hemorrhage following injury without mention of open intracranial wound, with concussion, unspecified	12	B	II
85211	1	0.00088458	Subarachnoid hemorrhage following injury with open intracranial wound, with no loss of consciousness	12	B	II
85220	43	0.03803694	Subdural hemorrhage following injury without mention of open intracranial wound, unspecified state of consciousness	12	B	II
85221	65	0.0574977	Subdural hemorrhage following injury without mention of open intracranial wound, with no loss of consciousness	12	B	II
85222	5	0.0044229	Subdural hemorrhage following injury without mention of open intracranial wound, with brief [less than one hour] loss of consciousness	12	B	II
85225	1	0.00088458	Subdural hemorrhage following injury without mention of open intracranial wound, with prolonged [more than 24 hours] loss of consciousness without return to pre-existing conscious level	12	B	II
85226	11	0.00973038	Subdural hemorrhage following injury without mention of open intracranial wound, with loss of consciousness of unspecified duration	12	B	II
85229	1	0.00088458	Subdural hemorrhage following injury without mention of open intracranial wound, with concussion, unspecified	12	B	II
85230	1	0.00088458	Subdural hemorrhage following injury with open intracranial wound, unspecified state of consciousness	12	B	II
85231	1	0.00088458	Subdural hemorrhage following injury with open intracranial wound, with no loss of consciousness	12	B	II
85300	7	0.00619206	Other and unspecified intracranial hemorrhage following injury without mention of open intracranial wound, unspecified state of consciousness	12	B	II
85301	16	0.01415328	Other and unspecified intracranial hemorrhage following injury without mention of open intracranial wound, with no loss of consciousness	12	B	II
85302	4	0.00353832	Other and unspecified intracranial hemorrhage following injury without mention of open intracranial wound, with brief [less than one hour] loss of consciousness	12	B	II
85306	2	0.00176916	Other and unspecified intracranial hemorrhage following injury without mention of open intracranial wound, with loss of consciousness of unspecified duration	12	B	II
36281	1	0.00088458	Retinal hemorrhage	12	C	
37272	7	0.00619206	Conjunctival hemorrhage	12	C	
37632	1	0.00088458	Orbital hemorrhage	12	C	
37923	1	0.00088458	Vitreous hemorrhage	12	C	
4590	41	0.03626778	Hemorrhage, unspecified	12	C	
56985	131	0.11587998	Angiodysplasia of intestine with hemorrhage	12	C	
56986	4	0.00353832	Dieulafoy lesion (hemorrhagic) of intestine	12	C	
5967	7	0.00619206	Hemorrhage into bladder wall	12	C	
59970	69	0.06103602	Hematuria, unspecified	12	C	
59971	186	0.16453188	Gross hematuria	12	C	
59972	2	0.00176916	Microscopic hematuria	12	C	

6021	2	0.00176916	Congestion or hemorrhage of prostate	12	C	
6262	7	0.00619206	Excessive or frequent menstruation	12	C	
6268	2	0.00176916	Other disorders of menstruation and other abnormal bleeding from female genital tract	12	C	
6270	1	0.00088458	Premenopausal menorrhagia	12	C	
6271	15	0.0132687	Postmenopausal bleeding	12	C	
7847	142	0.12561036	Epistaxis	12	C	
7863	7	0.00619206	Hemoptysis	12	C	
78630	28	0.02476824	Hemoptysis, unspecified	12	C	
78639	13	0.01149954	Other hemoptysis	12	C	
99811	101	0.08934258	Hemorrhage complicating a procedure	12	C	
99812	307	0.27156606	Hematoma complicating a procedure	12	C	
29010	1	0.00088458	Presenile dementia, uncomplicated	13		
29011	3	0.00265374	Presenile dementia with delirium	13		
29020	5	0.0044229	Senile dementia with delusional features	13		
29021	1	0.00088458	Senile dementia with depressive features	13		
2903	12	0.01061496	Senile dementia with delirium	13		
29040	22	0.01946076	Vascular dementia, uncomplicated	13		
29041	12	0.01061496	Vascular dementia, with delirium	13		
29042	7	0.00619206	Vascular dementia, with delusions	13		
29043	2	0.00176916	Vascular dementia, with depressed mood	13		
2910	54	0.04776732	Alcohol withdrawal delirium	13		
2911	1	0.00088458	Alcohol-induced persisting amnestic disorder	13		
2912	7	0.00619206	Alcohol-induced persisting dementia	13		
2913	5	0.0044229	Alcohol-induced psychotic disorder with hallucinations	13		
29181	226	0.19991508	Alcohol withdrawal	13		
29189	11	0.00973038	Other alcohol-induced mental disorders	13		
2919	1	0.00088458	Unspecified alcohol-induced mental disorders	13		
2920	25	0.0221145	Drug withdrawal	13		
29212	8	0.00707664	Drug-induced psychotic disorder with hallucinations	13		
29281	36	0.03184488	Drug-induced delirium	13		
29282	1	0.00088458	Drug-induced persisting dementia	13		
29284	6	0.00530748	Drug-induced mood disorder	13		
29285	2	0.00176916	Drug induced sleep disorders	13		
2929	3	0.00265374	Unspecified drug-induced mental disorder	13		
2930	6	0.00530748	Delirium due to conditions classified elsewhere	13		

29381	1	0.00088458	Psychotic disorder with delusions in conditions classified elsewhere	13		
29383	2	0.00176916	Mood disorder in conditions classified elsewhere	13		
29384	1	0.00088458	Anxiety disorder in conditions classified elsewhere	13		
2939	2	0.00176916	Unspecified transient mental disorder in conditions classified elsewhere	13		
29411	1	0.00088458	Dementia in conditions classified elsewhere with behavioral disturbance	13		
29420	33	0.02919114	Dementia, unspecified, without behavioral disturbance	13		
29421	56	0.04953648	Dementia, unspecified, with behavioral disturbance	13		
2948	51	0.04511358	Other persistent mental disorders due to conditions classified elsewhere	13		
2949	4	0.00353832	Unspecified persistent mental disorders due to conditions classified elsewhere	13		
29510	1	0.00088458	Disorganized type schizophrenia, unspecified	13		
29512	1	0.00088458	Disorganized type schizophrenia, chronic	13		
29520	1	0.00088458	Catatonic type schizophrenia, unspecified	13		
29530	17	0.01503786	Paranoid type schizophrenia, unspecified	13		
29532	6	0.00530748	Paranoid type schizophrenia, chronic	13		
29533	1	0.00088458	Paranoid type schizophrenia, subchronic with acute exacerbation	13		
29534	21	0.01857618	Paranoid type schizophrenia, chronic with acute exacerbation	13		
29544	1	0.00088458	Schizophreniform disorder, chronic with acute exacerbation	13		
29560	1	0.00088458	Schizophrenic disorders, residual type, unspecified	13		
29562	1	0.00088458	Schizophrenic disorders, residual type, chronic	13		
29570	35	0.0309603	Schizoaffective disorder, unspecified	13		
29572	3	0.00265374	Schizoaffective disorder, chronic	13		
29573	3	0.00265374	Schizoaffective disorder, subchronic with acute exacerbation	13		
29574	22	0.01946076	Schizoaffective disorder, chronic with acute exacerbation	13		
29580	1	0.00088458	Other specified types of schizophrenia, unspecified	13		
29590	5	0.0044229	Unspecified schizophrenia, unspecified	13		
29594	2	0.00176916	Unspecified schizophrenia, chronic with acute exacerbation	13		
29600	1	0.00088458	Bipolar I disorder, single manic episode, unspecified	13		
29620	55	0.0486519	Major depressive affective disorder, single episode, unspecified	13		
29622	3	0.00265374	Major depressive affective disorder, single episode, moderate	13		
29623	10	0.0088458	Major depressive affective disorder, single episode, severe, without mention of psychotic behavior	13		
29624	12	0.01061496	Major depressive affective disorder, single episode, severe, specified as with psychotic behavior	13		
29625	1	0.00088458	Major depressive affective disorder, single episode, in partial or unspecified remission	13		
29630	37	0.03272946	Major depressive affective disorder, recurrent episode, unspecified	13		
29632	11	0.00973038	Major depressive affective disorder, recurrent episode, moderate	13		

29633	88	0.07784304	Major depressive affective disorder, recurrent episode, severe, without mention of psychotic behavior	13		
29634	37	0.03272946	Major depressive affective disorder, recurrent episode, severe, specified as with psychotic behavior	13		
29636	1	0.00088458	Major depressive affective disorder, recurrent episode, in full remission	13		
29640	18	0.01592244	Bipolar I disorder, most recent episode (or current) manic, unspecified	13		
29642	2	0.00176916	Bipolar I disorder, most recent episode (or current) manic, moderate	13		
29643	3	0.00265374	Bipolar I disorder, most recent episode (or current) manic, severe, without mention of psychotic behavior	13		
29644	11	0.00973038	Bipolar I disorder, most recent episode (or current) manic, severe, specified as with psychotic behavior	13		
29650	20	0.0176916	Bipolar I disorder, most recent episode (or current) depressed, unspecified	13		
29653	3	0.00265374	Bipolar I disorder, most recent episode (or current) depressed, severe, without mention of psychotic behavior	13		
29654	15	0.0132687	Bipolar I disorder, most recent episode (or current) depressed, severe, specified as with psychotic behavior	13		
29660	2	0.00176916	Bipolar I disorder, most recent episode (or current) mixed, unspecified	13		
29663	2	0.00176916	Bipolar I disorder, most recent episode (or current) mixed, severe, without mention of psychotic behavior	13		
29664	7	0.00619206	Bipolar I disorder, most recent episode (or current) mixed, severe, specified as with psychotic behavior	13		
2967	7	0.00619206	Bipolar I disorder, most recent episode (or current) unspecified	13		
29680	15	0.0132687	Bipolar disorder, unspecified	13		
29682	1	0.00088458	Atypical depressive disorder	13		
29689	7	0.00619206	Other bipolar disorders	13		
29690	31	0.02742198	Unspecified episodic mood disorder	13		
29699	2	0.00176916	Other specified episodic mood disorder	13		
2971	9	0.00796122	Delusional disorder	13		
2979	1	0.00088458	Unspecified paranoid state	13		
2980	2	0.00176916	Depressive type psychosis	13		
2989	103	0.09111174	Unspecified psychosis	13		
30000	59	0.05219022	Anxiety state, unspecified	13		
30001	21	0.01857618	Panic disorder without agoraphobia	13		
30002	7	0.00619206	Generalized anxiety disorder	13		
30011	3	0.00265374	Conversion disorder	13		
30022	1	0.00088458	Agoraphobia without mention of panic attacks	13		
3004	14	0.01238412	Dysthymic disorder	13		
30081	2	0.00176916	Somatization disorder	13		
30082	1	0.00088458	Undifferentiated somatoform disorder	13		
3009	3	0.00265374	Unspecified nonpsychotic mental disorder	13		

30151	2	0.00176916	Chronic factitious illness with physical symptoms	13		
30189	1	0.00088458	Other personality disorders	13		
30300	40	0.0353832	Acute alcoholic intoxication in alcoholism, unspecified	13		
30301	43	0.03803694	Acute alcoholic intoxication in alcoholism, continuous	13		
30390	15	0.0132687	Other and unspecified alcohol dependence, unspecified	13		
30391	66	0.05838228	Other and unspecified alcohol dependence, continuous	13		
30392	1	0.00088458	Other and unspecified alcohol dependence, episodic	13		
30393	1	0.00088458	Other and unspecified alcohol dependence, in remission	13		
30400	5	0.0044229	Opioid type dependence, unspecified	13		
30401	8	0.00707664	Opioid type dependence, continuous	13		
30411	1	0.00088458	Sedative, hypnotic or anxiolytic dependence, continuous	13		
30421	3	0.00265374	Cocaine dependence, continuous	13		
30470	2	0.00176916	Combinations of opioid type drug with any other drug dependence, unspecified	13		
30471	1	0.00088458	Combinations of opioid type drug with any other drug dependence, continuous	13		
30500	25	0.0221145	Alcohol abuse, unspecified	13		
30501	13	0.01149954	Alcohol abuse, continuous	13		
30550	1	0.00088458	Opioid abuse, unspecified	13		
30560	2	0.00176916	Cocaine abuse, unspecified	13		
30561	2	0.00176916	Cocaine abuse, continuous	13		
30590	2	0.00176916	Other, mixed, or unspecified drug abuse, unspecified	13		
30591	1	0.00088458	Other, mixed, or unspecified drug abuse, continuous	13		
3061	5	0.0044229	Respiratory malfunction arising from mental factors	13		
3062	3	0.00265374	Cardiovascular malfunction arising from mental factors	13		
30781	4	0.00353832	Tension headache	13		
3079	5	0.0044229	Other and unspecified special symptoms or syndromes, not elsewhere classified	13		
3080	4	0.00353832	Predominant disturbance of emotions	13		
3083	1	0.00088458	Other acute reactions to stress	13		
3089	1	0.00088458	Unspecified acute reaction to stress	13		
3090	9	0.00796122	Adjustment disorder with depressed mood	13		
30928	3	0.00265374	Adjustment disorder with mixed anxiety and depressed mood	13		
3093	1	0.00088458	Adjustment disorder with disturbance of conduct	13		
3094	2	0.00176916	Adjustment disorder with mixed disturbance of emotions and conduct	13		
30981	2	0.00176916	Posttraumatic stress disorder	13		
3099	4	0.00353832	Unspecified adjustment reaction	13		
3100	1	0.00088458	Frontal lobe syndrome	13		

3102	2	0.00176916	Postconcussion syndrome	13		
31089	1	0.00088458	Other specified nonpsychotic mental disorders following organic brain damage	13		
3109	1	0.00088458	Unspecified nonpsychotic mental disorder following organic brain damage	13		
311	61	0.05395938	Depressive disorder, not elsewhere classified	13		
31200	1	0.00088458	Undersocialized conduct disorder, aggressive type, unspecified	13		
31230	3	0.00265374	Impulse control disorder, unspecified	13		
31234	1	0.00088458	Intermittent explosive disorder	13		
3129	4	0.00353832	Unspecified disturbance of conduct	13		
7801	5	0.0044229	Hallucinations	13		
78052	3	0.00265374	Insomnia, unspecified	13		
V6284	1	0.00088458	Suicidal ideation	13		
41511	10	0.0088458	Iatrogenic pulmonary embolism and infarction	14		
41513	5	0.0044229	Saddle embolus of pulmonary artery	14		
41519	637	0.56347746	Other pulmonary embolism and infarction	14		
4162	8	0.00707664	Chronic pulmonary embolism	14		
4532	2	0.00176916	Other venous embolism and thrombosis of inferior vena cava	14		
45340	83	0.07342014	Acute venous embolism and thrombosis of unspecified deep vessels of lower extremity	14		
45341	214	0.18930012	Acute venous embolism and thrombosis of deep vessels of proximal lower extremity	14		
45342	60	0.0530748	Acute venous embolism and thrombosis of deep vessels of distal lower extremity	14		
45350	1	0.00088458	Chronic venous embolism and thrombosis of unspecified deep vessels of lower extremity	14		
45351	4	0.00353832	Chronic venous embolism and thrombosis of deep vessels of proximal lower extremity	14		
45352	3	0.00265374	Chronic venous embolism and thrombosis of deep vessels of distal lower extremity	14		
45372	1	0.00088458	Chronic venous embolism and thrombosis of deep veins of upper extremity	14		
45382	19	0.01680702	Acute venous embolism and thrombosis of deep veins of upper extremity	14		
45383	3	0.00265374	Acute venous embolism and thrombosis of upper extremity, unspecified	14		
45384	5	0.0044229	Acute venous embolism and thrombosis of axillary veins	14		
45385	9	0.00796122	Acute venous embolism and thrombosis of subclavian veins	14		
45386	5	0.0044229	Acute venous embolism and thrombosis of internal jugular veins	14		
45387	5	0.0044229	Acute venous embolism and thrombosis of other thoracic veins	14		
45389	1	0.00088458	Acute venous embolism and thrombosis of other specified veins	14		
4539	1	0.00088458	Other venous embolism and thrombosis of unspecified site	14		
135	9	0.00796122	Sarcoidosis	15		
261	7	0.00619206	Nutritional marasmus	15		
262	10	0.0088458	Other severe protein-calorie malnutrition	15		
2630	3	0.00265374	Malnutrition of moderate degree	15		

2631	1	0.00088458	Malnutrition of mild degree	15		
2639	8	0.00707664	Unspecified protein-calorie malnutrition	15		
2651	3	0.00265374	Other and unspecified manifestations of thiamine deficiency	15		
2689	2	0.00176916	Unspecified vitamin D deficiency	15		
2706	2	0.00176916	Disorders of urea cycle metabolism	15		
2710	1	0.00088458	Glycogenosis	15		
2713	1	0.00088458	Intestinal disaccharidase deficiencies and disaccharide malabsorption	15		
2721	1	0.00088458	Pure hyperglyceridemia	15		
2724	1	0.00088458	Other and unspecified hyperlipidemia	15		
2731	1	0.00088458	Monoclonal paraproteinemia	15		
2733	1	0.00088458	Macroglobulinemia	15		
2738	4	0.00353832	Other disorders of plasma protein metabolism	15		
27400	13	0.01149954	Gouty arthropathy, unspecified	15		
27401	51	0.04511358	Acute gouty arthropathy	15		
27403	1	0.00088458	Chronic gouty arthropathy with tophus (tophi)	15		
27482	2	0.00176916	Gouty tophi of other sites, except ear	15		
2749	8	0.00707664	Gout, unspecified	15		
27650	37	0.03272946	Volume depletion, unspecified	15		
27651	565	0.4997877	Dehydration	15		
27652	22	0.01946076	Hypovolemia	15		
2766	13	0.01149954	Fluid overload disorder	15		
27661	3	0.00265374	Transfusion associated circulatory overload	15		
27669	140	0.1238412	Other fluid overload	15		
27730	3	0.00265374	Amyloidosis, unspecified	15		
27739	14	0.01238412	Other amyloidosis	15		
27788	3	0.00265374	Tumor lysis syndrome	15		
2779	1	0.00088458	Unspecified disorder of metabolism	15		
27801	20	0.0176916	Morbid obesity	15		
2788	1	0.00088458	Other hyperalimentation	15		
27906	1	0.00088458	Common variable immunodeficiency	15		
27949	4	0.00353832	Autoimmune disease, not elsewhere classified	15		
3591	1	0.00088458	Hereditary progressive muscular dystrophy	15		
3594	7	0.00619206	Toxic myopathy	15		
3599	1	0.00088458	Myopathy, unspecified	15		
36000	3	0.00265374	Purulent endophthalmitis, unspecified	15		

36019	1	0.00088458	Other endophthalmitis	15		
36043	1	0.00088458	Hemophthalmos, except current injury	15		
36210	1	0.00088458	Background retinopathy, unspecified	15		
36284	1	0.00088458	Retinal ischemia	15		
3668	1	0.00088458	Other cataract	15		
36811	1	0.00088458	Sudden visual loss	15		
36812	2	0.00176916	Transient visual loss	15		
36816	3	0.00265374	Psychophysical visual disturbances	15		
3682	3	0.00265374	Diplopia	15		
36830	1	0.00088458	Binocular vision disorder, unspecified	15		
3688	5	0.0044229	Other specified visual disturbances	15		
3689	5	0.0044229	Unspecified visual disturbance	15		
36900	1	0.00088458	Profound impairment, both eyes, impairment level not further specified	15		
36970	1	0.00088458	Moderate or severe impairment, one eye, impairment level not further specified	15		
3699	1	0.00088458	Unspecified visual loss	15		
37515	1	0.00088458	Tear film insufficiency, unspecified	15		
37601	4	0.00353832	Orbital cellulitis	15		
37703	1	0.00088458	Papilledema associated with retinal disorder	15		
37741	1	0.00088458	Ischemic optic neuropathy	15		
37749	1	0.00088458	Other disorders of optic nerve	15		
37851	1	0.00088458	Third or oculomotor nerve palsy, partial	15		
37854	1	0.00088458	Sixth or abducens nerve palsy	15		
37855	1	0.00088458	External ophthalmoplegia	15		
37909	1	0.00088458	Other scleritis and episcleritis	15		
37941	1	0.00088458	Anisocoria	15		
38010	1	0.00088458	Infective otitis externa, unspecified	15		
38014	4	0.00353832	Malignant otitis externa	15		
3814	1	0.00088458	Nonsuppurative otitis media, not specified as acute or chronic	15		
3829	2	0.00176916	Unspecified otitis media	15		
38300	1	0.00088458	Acute mastoiditis without complications	15		
3839	1	0.00088458	Unspecified mastoiditis	15		
38531	1	0.00088458	Cholesteatoma of attic	15		
38600	3	0.00265374	Ménière's disease, unspecified	15		
38610	2	0.00176916	Peripheral vertigo, unspecified	15		
38611	36	0.03184488	Benign paroxysmal positional vertigo	15		

38612	9	0.00796122	Vestibular neuronitis	15		
38619	1	0.00088458	Other peripheral vertigo	15		
38630	2	0.00176916	Labyrinthitis, unspecified	15		
38635	1	0.00088458	Viral labyrinthitis	15		
38650	1	0.00088458	Labyrinthine dysfunction, unspecified	15		
3869	2	0.00176916	Unspecified vertiginous syndromes and labyrinthine disorders	15		
38830	1	0.00088458	Tinnitus, unspecified	15		
38869	3	0.00265374	Other otorrhea	15		
4564	2	0.00176916	Scrotal varices	15		
4568	6	0.00530748	Varices of other sites	15		
4571	5	0.0044229	Other lymphedema	15		
4578	4	0.00353832	Other noninfectious disorders of lymphatic channels	15		
4592	5	0.0044229	Compression of vein	15		
45930	1	0.00088458	Chronic venous hypertension without complications	15		
45931	1	0.00088458	Chronic venous hypertension with ulcer	15		
45981	33	0.02919114	Venous (peripheral) insufficiency, unspecified	15		
45989	10	0.0088458	Other specified disorders of circulatory system	15		
475	3	0.00265374	Peritonsillar abscess	15		
47819	2	0.00176916	Other disease of nasal cavity and sinuses	15		
47829	3	0.00265374	Other diseases of pharynx, not elsewhere classified	15		
47831	1	0.00088458	Unilateral paralysis of vocal cords or larynx, partial	15		
47832	1	0.00088458	Unilateral paralysis of vocal cords or larynx, complete	15		
47833	1	0.00088458	Bilateral paralysis of vocal cords or larynx, partial	15		
4784	1	0.00088458	Polyp of vocal cord or larynx	15		
4785	1	0.00088458	Other diseases of vocal cords	15		
4786	2	0.00176916	Edema of larynx	15		
47874	1	0.00088458	Stenosis of larynx	15		
47875	1	0.00088458	Laryngeal spasm	15		
47879	1	0.00088458	Other diseases of larynx, not elsewhere classified	15		
5238	11	0.00973038	Other specified periodontal diseases	15		
52461	1	0.00088458	Temporomandibular joint disorders, adhesions and ankylosis (bony or fibrous)	15		
5264	1	0.00088458	Inflammatory conditions of jaw	15		
5272	25	0.0221145	Sialoadenitis	15		
5273	1	0.00088458	Abscess of salivary gland	15		
5278	1	0.00088458	Other specified diseases of the salivary glands	15		

52800	2	0.00176916	Stomatitis and mucositis, unspecified	15		
52801	6	0.00530748	Mucositis (ulcerative) due to antineoplastic therapy	15		
52802	1	0.00088458	Mucositis (ulcerative) due to other drugs	15		
52809	4	0.00353832	Other stomatitis and mucositis (ulcerative)	15		
5289	4	0.00353832	Other and unspecified diseases of the oral soft tissues	15		
5290	1	0.00088458	Glossitis	15		
5298	3	0.00265374	Other specified conditions of the tongue	15		
55000	1	0.00088458	Inguinal hernia, with gangrene, unilateral or unspecified (not specified as recurrent)	15		
55010	31	0.02742198	Inguinal hernia, with obstruction, without mention of gangrene, unilateral or unspecified (not specified as recurrent)	15		
55011	3	0.00265374	Inguinal hernia, with obstruction, without mention of gangrene, unilateral or unspecified, recurrent	15		
55012	2	0.00176916	Inguinal hernia, with obstruction, without mention of gangrene, bilateral (not specified as recurrent)	15		
55090	9	0.00796122	Inguinal hernia, without mention of obstruction or gangrene, unilateral or unspecified (not specified as recurrent)	15		
55091	2	0.00176916	Inguinal hernia, without mention of obstruction or gangrene, unilateral or unspecified, recurrent	15		
55092	1	0.00088458	Inguinal hernia, without mention of obstruction or gangrene, bilateral (not specified as recurrent)	15		
55100	2	0.00176916	Femoral hernia with gangrene, unilateral or unspecified (not specified as recurrent)	15		
55102	1	0.00088458	Femoral hernia with gangrene, bilateral (not specified as recurrent)	15		
5511	1	0.00088458	Umbilical hernia with gangrene	15		
55200	14	0.01238412	Femoral hernia with obstruction, unilateral or unspecified (not specified as recurrent)	15		
5521	12	0.01061496	Umbilical hernia with obstruction	15		
55220	14	0.01238412	Ventral, unspecified, hernia with obstruction	15		
55221	26	0.02299908	Incisional ventral hernia with obstruction	15		
55229	4	0.00353832	Other ventral hernia with obstruction	15		
5523	15	0.0132687	Diaphragmatic hernia with obstruction	15		
5528	10	0.0088458	Hernia of other specified sites, with obstruction	15		
5529	3	0.00265374	Hernia of unspecified site, with obstruction	15		
5531	2	0.00176916	Umbilical hernia without mention of obstruction or gangrene	15		
55320	3	0.00265374	Ventral, unspecified, hernia without mention of obstruction or gangrene	15		
55321	18	0.01592244	Incisional hernia without mention of obstruction or gangrene	15		
55329	2	0.00176916	Other ventral hernia without mention of obstruction or gangrene	15		
5533	40	0.0353832	Diaphragmatic hernia without mention of obstruction or gangrene	15		
5538	1	0.00088458	Hernia of other specified sites without mention of obstruction or gangrene	15		
6108	1	0.00088458	Other specified benign mammary dysplasias	15		
6110	5	0.0044229	Inflammatory disease of breast	15		

61172	1	0.00088458	Lump or mass in breast	15		
61189	3	0.00265374	Other specified disorders of breast	15		
6141	1	0.00088458	Chronic salpingitis and oophoritis	15		
6142	1	0.00088458	Salpingitis and oophoritis not specified as acute, subacute, or chronic	15		
6144	1	0.00088458	Chronic or unspecified parametritis and pelvic cellulitis	15		
6150	1	0.00088458	Acute inflammatory diseases of uterus, except cervix	15		
6170	1	0.00088458	Endometriosis of uterus	15		
6179	1	0.00088458	Endometriosis, site unspecified	15		
61801	1	0.00088458	Cystocele, midline	15		
61804	1	0.00088458	Rectocele	15		
61809	1	0.00088458	Other prolapse of vaginal walls without mention of uterine prolapse	15		
6181	1	0.00088458	Uterine prolapse without mention of vaginal wall prolapse	15		
6183	4	0.00353832	Uterovaginal prolapse, complete	15		
6184	3	0.00265374	Uterovaginal prolapse, unspecified	15		
6185	2	0.00176916	Prolapse of vaginal vault after hysterectomy	15		
6186	1	0.00088458	Vaginal enterocele, congenital or acquired	15		
6191	2	0.00176916	Digestive-genital tract fistula, female	15		
6202	1	0.00088458	Other and unspecified ovarian cyst	15		
6209	1	0.00088458	Unspecified noninflammatory disorder of ovary, fallopian tube, and broad ligament	15		
6212	1	0.00088458	Hypertrophy of uterus	15		
62130	2	0.00176916	Endometrial hyperplasia, unspecified	15		
6218	2	0.00176916	Other specified disorders of uterus, not elsewhere classified	15		
6238	11	0.00973038	Other specified noninflammatory disorders of vagina	15		
6256	1	0.00088458	Stress incontinence, female	15		
6259	1	0.00088458	Unspecified symptom associated with female genital organs	15		
6273	2	0.00176916	Postmenopausal atrophic vaginitis	15		
62989	1	0.00088458	Other specified disorders of female genital organs	15		
64863	1	0.00088458	Other cardiovascular diseases of mother, antepartum condition or complication	15		
65251	1	0.00088458	High head at term, delivered, with or without mention of antepartum condition	15		
65421	1	0.00088458	Previous cesarean delivery, delivered, with or without mention of antepartum condition	15		
66411	1	0.00088458	Second-degree perineal laceration, delivered, with or without mention of antepartum condition	15		
683	1	0.00088458	Acute lymphadenitis	15		
684	1	0.00088458	Impetigo	15		
6851	1	0.00088458	Pilonidal cyst without mention of abscess	15		
68601	3	0.00265374	Pyoderma gangrenosum	15		

6869	1	0.00088458	Unspecified local infection of skin and subcutaneous tissue	15		
6923	1	0.00088458	Contact dermatitis and other eczema due to drugs and medicines in contact with skin	15		
6929	4	0.00353832	Contact dermatitis and other eczema, unspecified cause	15		
6930	66	0.05838228	Dermatitis due to drugs and medicines taken internally	15		
6931	1	0.00088458	Dermatitis due to food taken internally	15		
6945	4	0.00353832	Pemphigoid	15		
69510	1	0.00088458	Erythema multiforme, unspecified	15		
69513	5	0.0044229	Stevens-Johnson syndrome	15		
69514	1	0.00088458	Stevens-Johnson syndrome-toxic epidermal necrolysis overlap syndrome	15		
69515	1	0.00088458	Toxic epidermal necrolysis	15		
69589	1	0.00088458	Other specified erythematous conditions	15		
6959	1	0.00088458	Unspecified erythematous condition	15		
6960	2	0.00176916	Psoriatic arthropathy	15		
6961	5	0.0044229	Other psoriasis	15		
6989	3	0.00265374	Unspecified pruritic disorder	15		
70583	1	0.00088458	Hidradenitis	15		
7062	2	0.00176916	Sebaceous cyst	15		
70701	1	0.00088458	Pressure ulcer, elbow	15		
70702	1	0.00088458	Pressure ulcer, upper back	15		
70703	35	0.0309603	Pressure ulcer, lower back	15		
70704	2	0.00176916	Pressure ulcer, hip	15		
70705	7	0.00619206	Pressure ulcer, buttock	15		
70706	1	0.00088458	Pressure ulcer, ankle	15		
70707	8	0.00707664	Pressure ulcer, heel	15		
70709	3	0.00265374	Pressure ulcer, other site	15		
70710	2	0.00176916	Ulcer of lower limb, unspecified	15		
70712	2	0.00176916	Ulcer of calf	15		
70713	2	0.00176916	Ulcer of ankle	15		
70714	2	0.00176916	Ulcer of heel and midfoot	15		
70715	6	0.00530748	Ulcer of other part of foot	15		
70719	5	0.0044229	Ulcer of other part of lower limb	15		
70723	1	0.00088458	Pressure ulcer, stage III	15		
7078	7	0.00619206	Chronic ulcer of other specified sites	15		
7080	6	0.00530748	Allergic urticaria	15		
7089	1	0.00088458	Urticaria, unspecified	15		

7091	1	0.00088458	Vascular disorders of skin	15		
7092	1	0.00088458	Scar conditions and fibrosis of skin	15		
7098	5	0.0044229	Other specified disorders of skin	15		
7100	8	0.00707664	Systemic lupus erythematosus	15		
7101	5	0.0044229	Systemic sclerosis	15		
7103	1	0.00088458	Dermatomyositis	15		
7104	1	0.00088458	Polymyositis	15		
71101	6	0.00530748	Pyogenic arthritis, shoulder region	15		
71102	4	0.00353832	Pyogenic arthritis, upper arm	15		
71105	2	0.00176916	Pyogenic arthritis, pelvic region and thigh	15		
71106	20	0.0176916	Pyogenic arthritis, lower leg	15		
71107	4	0.00353832	Pyogenic arthritis, ankle and foot	15		
7140	11	0.00973038	Rheumatoid arthritis	15		
7142	1	0.00088458	Other rheumatoid arthritis with visceral or systemic involvement	15		
71481	4	0.00353832	Rheumatoid lung	15		
71489	7	0.00619206	Other specified inflammatory polyarthropathies	15		
7149	2	0.00176916	Unspecified inflammatory polyarthropathy	15		
71509	2	0.00176916	Osteoarthritis, generalized, multiple sites	15		
71511	1	0.00088458	Osteoarthritis, localized, primary, shoulder region	15		
71515	12	0.01061496	Osteoarthritis, localized, primary, pelvic region and thigh	15		
71516	19	0.01680702	Osteoarthritis, localized, primary, lower leg	15		
71525	1	0.00088458	Osteoarthritis, localized, secondary, pelvic region and thigh	15		
71526	2	0.00176916	Osteoarthritis, localized, secondary, lower leg	15		
71531	18	0.01592244	Osteoarthritis, localized, not specified whether primary or secondary, shoulder region	15		
71535	79	0.06988182	Osteoarthritis, localized, not specified whether primary or secondary, pelvic region and thigh	15		
71536	159	0.14064822	Osteoarthritis, localized, not specified whether primary or secondary, lower leg	15		
71537	2	0.00176916	Osteoarthritis, localized, not specified whether primary or secondary, ankle and foot	15		
71538	1	0.00088458	Osteoarthritis, localized, not specified whether primary or secondary, other specified sites	15		
71591	7	0.00619206	Osteoarthritis, unspecified whether generalized or localized, shoulder region	15		
71592	1	0.00088458	Osteoarthritis, unspecified whether generalized or localized, upper arm	15		
71593	2	0.00176916	Osteoarthritis, unspecified whether generalized or localized, forearm	15		
71595	25	0.0221145	Osteoarthritis, unspecified whether generalized or localized, pelvic region and thigh	15		
71596	51	0.04511358	Osteoarthritis, unspecified whether generalized or localized, lower leg	15		
71611	1	0.00088458	Traumatic arthropathy, shoulder region	15		
71615	1	0.00088458	Traumatic arthropathy, pelvic region and thigh	15		

71616	2	0.00176916	Traumatic arthropathy, lower leg	15		
71617	1	0.00088458	Traumatic arthropathy, ankle and foot	15		
71666	1	0.00088458	Unspecified monoarthritis, lower leg	15		
71685	1	0.00088458	Other specified arthropathy, pelvic region and thigh	15		
71691	4	0.00353832	Arthropathy, unspecified, shoulder region	15		
71694	2	0.00176916	Arthropathy, unspecified, hand	15		
71695	1	0.00088458	Arthropathy, unspecified, pelvic region and thigh	15		
71696	4	0.00353832	Arthropathy, unspecified, lower leg	15		
71698	1	0.00088458	Arthropathy, unspecified, other specified sites	15		
71699	2	0.00176916	Arthropathy, unspecified, multiple sites	15		
71831	3	0.00265374	Recurrent dislocation of joint, shoulder region	15		
71832	1	0.00088458	Recurrent dislocation of joint, upper arm	15		
71835	1	0.00088458	Recurrent dislocation of joint, pelvic region and thigh	15		
71897	1	0.00088458	Unspecified derangement of joint, ankle and foot	15		
71902	1	0.00088458	Effusion of joint, upper arm	15		
71905	1	0.00088458	Effusion of joint, pelvic region and thigh	15		
71906	7	0.00619206	Effusion of joint, lower leg	15		
71907	1	0.00088458	Effusion of joint, ankle and foot	15		
71911	1	0.00088458	Hemarthrosis, shoulder region	15		
71915	2	0.00176916	Hemarthrosis, pelvic region and thigh	15		
71916	19	0.01680702	Hemarthrosis, lower leg	15		
71917	1	0.00088458	Hemarthrosis, ankle and foot	15		
71941	9	0.00796122	Pain in joint, shoulder region	15		
71942	1	0.00088458	Pain in joint, upper arm	15		
71945	18	0.01592244	Pain in joint, pelvic region and thigh	15		
71946	7	0.00619206	Pain in joint, lower leg	15		
71948	1	0.00088458	Pain in joint, other specified sites	15		
71956	1	0.00088458	Stiffness of joint, not elsewhere classified, lower leg	15		
71961	1	0.00088458	Other symptoms referable to joint, shoulder region	15		
71966	1	0.00088458	Other symptoms referable to joint, lower leg	15		
7197	4	0.00353832	Difficulty in walking	15		
7210	17	0.01503786	Cervical spondylosis without myelopathy	15		
7211	22	0.01946076	Cervical spondylosis with myelopathy	15		
7213	29	0.02565282	Lumbosacral spondylosis without myelopathy	15		
72142	2	0.00176916	Spondylosis with myelopathy, lumbar region	15		

72190	2	0.00176916	Spondylosis of unspecified site, without mention of myelopathy	15		
7220	11	0.00973038	Displacement of cervical intervertebral disc without myelopathy	15		
72210	40	0.0353832	Displacement of lumbar intervertebral disc without myelopathy	15		
72211	2	0.00176916	Displacement of thoracic intervertebral disc without myelopathy	15		
72232	1	0.00088458	Schmorl's nodes, lumbar region	15		
7224	9	0.00796122	Degeneration of cervical intervertebral disc	15		
72251	1	0.00088458	Degeneration of thoracic or thoracolumbar intervertebral disc	15		
72252	36	0.03184488	Degeneration of lumbar or lumbosacral intervertebral disc	15		
7226	2	0.00176916	Degeneration of intervertebral disc, site unspecified	15		
72271	9	0.00796122	Intervertebral disc disorder with myelopathy, cervical region	15		
72273	3	0.00265374	Intervertebral disc disorder with myelopathy, lumbar region	15		
72283	1	0.00088458	Postlaminectomy syndrome, lumbar region	15		
72292	2	0.00176916	Other and unspecified disc disorder, thoracic region	15		
72293	8	0.00707664	Other and unspecified disc disorder, lumbar region	15		
7230	8	0.00707664	Spinal stenosis in cervical region	15		
7231	11	0.00973038	Cervicalgia	15		
7234	8	0.00707664	Brachial neuritis or radiculitis NOS	15		
7238	3	0.00265374	Other syndromes affecting cervical region	15		
72400	3	0.00265374	Spinal stenosis, unspecified region	15		
72401	1	0.00088458	Spinal stenosis, thoracic region	15		
72402	40	0.0353832	Spinal stenosis, lumbar region, without neurogenic claudication	15		
72403	7	0.00619206	Spinal stenosis, lumbar region, with neurogenic claudication	15		
72409	1	0.00088458	Spinal stenosis, other region	15		
7242	27	0.02388366	Lumbago	15		
7243	2	0.00176916	Sciatica	15		
7244	12	0.01061496	Thoracic or lumbosacral neuritis or radiculitis, unspecified	15		
7245	17	0.01503786	Backache, unspecified	15		
7246	2	0.00176916	Disorders of sacrum	15		
7248	1	0.00088458	Other symptoms referable to back	15		
725	14	0.01238412	Polymyalgia rheumatica	15		
7260	2	0.00176916	Adhesive capsulitis of shoulder	15		
72610	11	0.00973038	Disorders of bursae and tendons in shoulder region, unspecified	15		
72611	3	0.00265374	Calcifying tendinitis of shoulder	15		
7262	2	0.00176916	Other affections of shoulder region, not elsewhere classified	15		
72633	15	0.0132687	Olecranon bursitis	15		

7265	6	0.00530748	Enthesopathy of hip region	15		
72660	1	0.00088458	Enthesopathy of knee, unspecified	15		
72665	5	0.0044229	Prepatellar bursitis	15		
72700	1	0.00088458	Synovitis and tenosynovitis, unspecified	15		
72705	6	0.00530748	Other tenosynovitis of hand and wrist	15		
72706	2	0.00176916	Tenosynovitis of foot and ankle	15		
72751	7	0.00619206	Synovial cyst of popliteal space	15		
72761	3	0.00265374	Complete rupture of rotator cuff	15		
72782	1	0.00088458	Calcium deposits in tendon and bursa	15		
7280	3	0.00265374	Infective myositis	15		
7282	3	0.00265374	Muscular wasting and disuse atrophy, not elsewhere classified	15		
72885	4	0.00353832	Spasm of muscle	15		
72886	2	0.00176916	Necrotizing fasciitis	15		
72887	25	0.0221145	Muscle weakness (generalized)	15		
72888	50	0.044229	Rhabdomyolysis	15		
72889	8	0.00707664	Other disorders of muscle, ligament, and fascia	15		
7291	7	0.00619206	Myalgia and myositis, unspecified	15		
7292	2	0.00176916	Neuralgia, neuritis, and radiculitis, unspecified	15		
72939	1	0.00088458	Panniculitis, other site	15		
7294	1	0.00088458	Fasciitis, unspecified	15		
7295	15	0.0132687	Pain in limb	15		
72972	2	0.00176916	Nontraumatic compartment syndrome of lower extremity	15		
72981	5	0.0044229	Swelling of limb	15		
72982	1	0.00088458	Cramp of limb	15		
72989	25	0.0221145	Other musculoskeletal symptoms referable to limbs	15		
72990	1	0.00088458	Disorders of soft tissue, unspecified	15		
72992	194	0.17160852	Nontraumatic hematoma of soft tissue	15		
7324	1	0.00088458	Juvenile osteochondrosis of lower extremity, excluding foot	15		
73300	1	0.00088458	Osteoporosis, unspecified	15		
73322	1	0.00088458	Aneurysmal bone cyst	15		
73341	1	0.00088458	Aseptic necrosis of head of humerus	15		
73342	12	0.01061496	Aseptic necrosis of head and neck of femur	15		
73343	1	0.00088458	Aseptic necrosis of medial femoral condyle	15		
7336	48	0.04245984	Tietze's disease	15		
73399	2	0.00176916	Other disorders of bone and cartilage	15		

7350	2	0.00176916	Hallux valgus (acquired)	15		
7366	5	0.0044229	Other acquired deformities of knee	15		
73679	2	0.00176916	Other acquired deformities of ankle and foot	15		
73730	2	0.00176916	Scoliosis [and kyphoscoliosis], idiopathic	15		
73739	1	0.00088458	Other kyphoscoliosis and scoliosis	15		
73819	2	0.00176916	Other specified acquired deformity of head	15		
7384	9	0.00796122	Acquired spondylolisthesis	15		
75481	1	0.00088458	Pectus excavatum	15		
75612	2	0.00176916	Spondylolisthesis	15		
7592	1	0.00088458	Anomalies of other endocrine glands	15		
78001	1	0.00088458	Coma	15		
78060	115	0.1017267	Fever, unspecified	15		
78062	10	0.0088458	Postprocedural fever	15		
78063	1	0.00088458	Postvaccination fever	15		
78064	2	0.00176916	Chills (without fever)	15		
78065	2	0.00176916	Hypothermia not associated with low environmental temperature	15		
78079	214	0.18930012	Other malaise and fatigue	15		
7821	5	0.0044229	Rash and other nonspecific skin eruption	15		
7823	30	0.0265374	Edema	15		
7825	1	0.00088458	Cyanosis	15		
7827	15	0.0132687	Spontaneous ecchymoses	15		
7830	4	0.00353832	Anorexia	15		
78321	4	0.00353832	Loss of weight	15		
7837	100	0.088458	Adult failure to thrive	15		
7842	4	0.00353832	Swelling, mass, or lump in head and neck	15		
78499	2	0.00176916	Other symptoms involving head and neck	15		
7854	3	0.00265374	Gangrene	15		
78550	3	0.00265374	Shock, unspecified	15		
78559	4	0.00353832	Other shock without mention of trauma	15		
7856	5	0.0044229	Enlargement of lymph nodes	15		
7866	24	0.02122992	Swelling, mass, or lump in chest	15		
7868	1	0.00088458	Hiccough	15		
79029	1	0.00088458	Other abnormal glucose	15		
7905	8	0.00707664	Other nonspecific abnormal serum enzyme levels	15		
7906	1	0.00088458	Other abnormal blood chemistry	15		

7955	1	0.00088458	Nonspecific reaction to test for tuberculosis	15		
79551	1	0.00088458	Nonspecific reaction to tuberculin skin test without active tuberculosis	15		
7964	1	0.00088458	Other abnormal clinical findings	15		
7969	1	0.00088458	Other nonspecific abnormal findings	15		
7993	18	0.01592244	Debility, unspecified	15		
7994	1	0.00088458	Cachexia	15		
9092	1	0.00088458	Late effect of radiation	15		
9116	1	0.00088458	Superficial foreign body (splinter) of trunk, without major open wound and without mention of infection	15		
9132	1	0.00088458	Blister of elbow, forearm, and wrist, without mention of infection	15		
9173	2	0.00176916	Blister of foot and toe(s), infected	15		
9177	1	0.00088458	Superficial foreign body (splinter) of foot and toe(s), without major open wound, infected	15		
9330	1	0.00088458	Foreign body in pharynx	15		
9331	8	0.00707664	Foreign body in larynx	15		
9340	1	0.00088458	Foreign body in trachea	15		
9341	2	0.00176916	Foreign body in main bronchus	15		
9348	1	0.00088458	Foreign body in other specified parts bronchus and lung	15		
9349	2	0.00176916	Foreign body in respiratory tree, unspecified	15		
9351	11	0.00973038	Foreign body in esophagus	15		
9352	2	0.00176916	Foreign body in stomach	15		
936	1	0.00088458	Foreign body in intestine and colon	15		
94120	1	0.00088458	Blisters, epidermal loss [second degree] of face and head, unspecified site	15		
94123	1	0.00088458	Blisters, epidermal loss [second degree] of lip(s)	15		
94224	1	0.00088458	Blisters, epidermal loss [second degree] of back [any part]	15		
94232	1	0.00088458	Full-thickness skin loss [third degree, not otherwise specified] of chest wall, excluding breast and nipple	15		
94234	1	0.00088458	Full-thickness skin loss [third degree,not otherwise specified] of back [any part]	15		
94425	1	0.00088458	Blisters, epidermal loss [second degree] of palm	15		
94500	1	0.00088458	Burn of unspecified degree of lower limb [leg], unspecified site	15		
94523	1	0.00088458	Blisters, epidermal loss [second degree] of ankle	15		
94526	1	0.00088458	Blisters, epidermal loss [second degree] of thigh [any part]	15		
94534	1	0.00088458	Full-thickness skin loss [third degree nos] of lower leg	15		
94800	1	0.00088458	Burn [any degree] involving less than 10 percent of body surface with third degree burn, less than 10 percent or unspecified	15		
95203	1	0.00088458	C1-C4 level with central cord syndrome	15		
9583	2	0.00176916	Posttraumatic wound infection not elsewhere classified	15		
9584	1	0.00088458	Traumatic shock	15		

9911	1	0.00088458	Frostbite of hand	15		
9916	6	0.00530748	Hypothermia	15		
9920	1	0.00088458	Heat stroke and sunstroke	15		
9947	1	0.00088458	Asphyxiation and strangulation	15		
9949	1	0.00088458	Other effects of external causes	15		
9950	10	0.0088458	Other anaphylactic reaction	15		
9951	34	0.03007572	Angioneurotic edema, not elsewhere classified	15		
99527	3	0.00265374	Other drug allergy	15		
99529	41	0.03626778	Unspecified adverse effect of other drug, medicinal and biological substance	15		
99569	1	0.00088458	Anaphylactic reaction due to other specified food	15		
99581	2	0.00176916	Adult physical abuse	15		
99640	3	0.00265374	Unspecified mechanical complication of internal orthopedic device, implant, and graft	15		
99641	16	0.01415328	Mechanical loosening of prosthetic joint	15		
99642	46	0.04069068	Dislocation of prosthetic joint	15		
99643	2	0.00176916	Broken prosthetic joint implant	15		
99646	1	0.00088458	Articular bearing surface wear of prosthetic joint	15		
99647	8	0.00707664	Other mechanical complication of prosthetic joint implant	15		
99649	12	0.01061496	Other mechanical complication of other internal orthopedic device, implant, and graft	15		
99652	1	0.00088458	Mechanical complication due to graft of other tissue, not elsewhere classified	15		
99657	3	0.00265374	Mechanical complication due to insulin pump	15		
99659	21	0.01857618	Mechanical complication due to other implant and internal device, not elsewhere classified	15		
99666	45	0.0398061	Infection and inflammatory reaction due to internal joint prosthesis	15		
99667	7	0.00619206	Infection and inflammatory reaction due to other internal orthopedic device, implant, and graft	15		
99669	20	0.0176916	Infection and inflammatory reaction due to other internal prosthetic device, implant, and graft	15		
99670	1	0.00088458	Other complications due to unspecified device, implant, and graft	15		
99677	11	0.00973038	Other complications due to internal joint prosthesis	15		
99678	6	0.00530748	Other complications due to other internal orthopedic device, implant, and graft	15		
99679	9	0.00796122	Other complications due to other internal prosthetic device, implant, and graft	15		
99685	2	0.00176916	Complications of transplanted bone marrow	15		
99688	3	0.00265374	Complications of transplanted organ, stem cell	15		
99689	1	0.00088458	Complications of other specified transplanted organ	15		
99769	12	0.01061496	Other amputation stump complication	15		
99799	6	0.00530748	Complications affecting other specified body systems, not elsewhere classified	15		
9980	1	0.00088458	Postoperative shock not elsewhere classified	15		
99809	3	0.00265374	Postoperative shock, other	15		

99813	15	0.0132687	Seroma complicating a procedure	15		
9982	24	0.02122992	Accidental puncture or laceration during a procedure, not elsewhere classified	15		
99830	7	0.00619206	Disruption of wound, unspecified	15		
99831	14	0.01238412	Disruption of internal operation (surgical) wound	15		
99832	13	0.01149954	Disruption of external operation (surgical) wound	15		
99851	14	0.01238412	Infected postoperative seroma	15		
9986	19	0.01680702	Persistent postoperative fistula	15		
99881	1	0.00088458	Emphysema (subcutaneous) (surgical) resulting from procedure	15		
99883	12	0.01061496	Non-healing surgical wound	15		
99889	21	0.01857618	Other specified complications of procedures not elsewhere classified	15		
9999	1	0.00088458	Other and unspecified complications of medical care, not elsewhere classified	15		
V0382	3	0.00265374	Other specified vaccinations against streptococcus pneumoniae [pneumococcus]	15		
V0481	4	0.00353832	Need for prophylactic vaccination and inoculation against influenza	15		
V066	2	0.00176916	Need for prophylactic vaccination and inoculation against streptococcus pneumoniae [pneumococcus] and influenza	15		
V078	1	0.00088458	Other specified prophylactic or treatment measure	15		
V528	1	0.00088458	Fitting and adjustment of other specified prosthetic device	15		
V5331	11	0.00973038	Fitting and adjustment of cardiac pacemaker	15		
V5332	10	0.0088458	Fitting and adjustment of automatic implantable cardiac defibrillator	15		
V5413	1	0.00088458	Aftercare for healing traumatic fracture of hip	15		
V5415	1	0.00088458	Aftercare for healing traumatic fracture of upper leg	15		
V5416	1	0.00088458	Aftercare for healing traumatic fracture of lower leg	15		
V5417	1	0.00088458	Aftercare for healing traumatic fracture of vertebrae	15		
V5419	1	0.00088458	Aftercare for healing traumatic fracture of other bone	15		
V5482	1	0.00088458	Aftercare following explantation of joint prosthesis	15		
V5489	1	0.00088458	Other orthopedic aftercare	15		
V551	18	0.01592244	Attention to gastrostomy	15		
V552	7	0.00619206	Attention to ileostomy	15		
V553	3	0.00265374	Attention to colostomy	15		
V554	3	0.00265374	Attention to other artificial opening of digestive tract	15		
V556	2	0.00176916	Attention to other artificial opening of urinary tract	15		
V560	11	0.00973038	Encounter for extracorporeal dialysis	15		
V561	1	0.00088458	Fitting and adjustment of extracorporeal dialysis catheter	15		
V568	1	0.00088458	Encounter for other dialysis	15		
V571	9	0.00796122	Care involving other physical therapy	15		
V5721	1	0.00088458	Encounter for occupational therapy	15		

V5789	110	0.0973038	Care involving other specified rehabilitation procedure	15		
V580	4	0.00353832	Encounter for radiotherapy	15		
V5811	175	0.1548015	Encounter for antineoplastic chemotherapy	15		
V5812	4	0.00353832	Encounter for antineoplastic immunotherapy	15		
V5841	1	0.00088458	Encounter for planned post-operative wound closure	15		
V5844	1	0.00088458	Aftercare following organ transplant	15		
V5849	1	0.00088458	Other specified aftercare following surgery	15		
V5881	2	0.00176916	Fitting and adjustment of vascular catheter	15		
V5882	1	0.00088458	Fitting and adjustment of nonvascular catheter, NEC	15		
V5883	17	0.01503786	Encounter for therapeutic drug monitoring	15		
V5889	4	0.00353832	Other specified aftercare	15		
V632	1	0.00088458	Person awaiting admission to adequate facility elsewhere	15		
V638	1	0.00088458	Other specified reasons for unavailability of medical facilities	15		
V643	1	0.00088458	Procedure not carried out for other reasons	15		
V652	1	0.00088458	Person feigning illness	15		
V667	3	0.00265374	Encounter for palliative care	15		
V712	1	0.00088458	Observation for suspected tuberculosis	15		
V714	5	0.0044229	Observation following other accident	15		
V717	3	0.00265374	Observation for suspected cardiovascular disease	15		
V7189	6	0.00530748	Observation and evaluation for other specified suspected conditions	15		
47820	1	0.00088458	Unspecified disease of pharynx	15		

**Table S3. International Classification of Disease, Ninth Edition, Clinical Modification (ICD-9-CM) for Comorbidities.**

<b>Comorbidities</b>	<b>ICD codes</b>
Prior MI	412
Prior CABG	V45.81
Prior TIA/stroke	V12.54, 438.x
Atrial fibrillation	427.31
Congestive Heart Failure	402.x1, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 418
Electrical cardioversion	Procedure codes 99.61, 99.62 ,99.69 as the principal procedure
Pacemaker and implantable cardioverter defibrillator	37.80, 37.81, 37.82, 37.83, 00.50, 37.94, 00.51
Catheter ablation	37.34

**Table S4. Deyo's modification of Charlson Comorbidity Index.**

Reported ICD-9 CM codes	Condition	Charlson's Score
410 - 410.9	Myocardial infarction	1
428 - 428.9	Congestive heart failure	1
433.9, 441-441.9, 785.4, V43.4	Peripheral Vascular disease	1
430 - 438	Cerebrovascular disease	1
290 - 290.9	Dementia	1
490 - 496, 500 - 505, 506.4	Chronic pulmonary disease	1
710, 710.1, 714, 714.2	Rheumatological disease	1
714.81, 725, 531 - 531.49	Peptic ulcer disease	1
571.2, 571.5, 571.6, 571.4-571.49	Mild liver disease	1
250-250.3, 250.7	Diabetes	1
250.4 - 250.6	Diabetes with chronic complications	2
344.1, 342 - 342.9	Hemiplegia or paraplegia	2
582 - 582.9	Renal disease	2
588 - 588.9, 140 - 172.9, 174 - 195.8, 200 - 208.9	Any malignancy including leukemia and lymphoma	2
572.3 - 572.8	Moderate or severe liver disease	3
196 - 199.1	Metastatic solid tumor	6
042 - 044.9	AIDS	6

**Table S5. Subgroup analysis of 30-day Readmissions.**

<b>Patient level variables</b>	<b>Hospital Readmission within 30 days</b>
<b>Age</b>	
18-49	8.02%
50-64	11.84%
65-79	14.67%
>=80	17.90%
<b>Sex</b>	
Male	13.11%
Female	15.74%
<b>Primary Payer</b>	
Medicare/Medicaid	16.52%
Private including HMO	8.88%
Self-pay/no charge/other	10.08%
<b>Hospital bed size</b>	
Small	14.36%
Medium	14.58%
Large	14.45%
<b>Teaching Status</b>	
Non-Teaching	14.50%
Teaching	14.43%
<b>Admission type</b>	
Non-Elective	14.99%
Elective	11.03%
<b>Admission Day</b>	
Weekdays	14.36%
Weekend	14.90%
<b>Disposition</b>	
Home	13.40%
Facility/others	22.53%

**Figure S1. Overflow diagram depicting patient selection algorithm.**

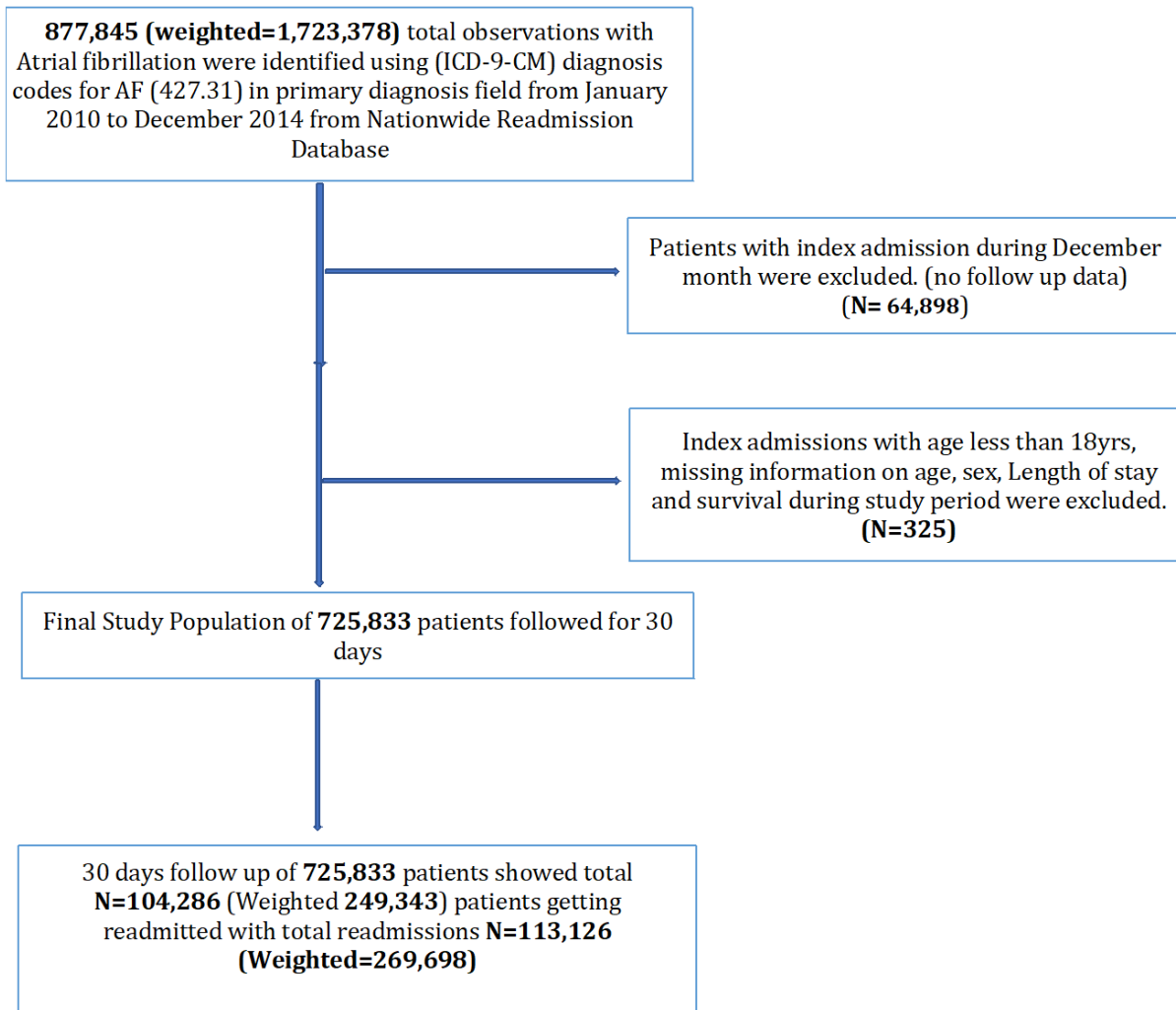
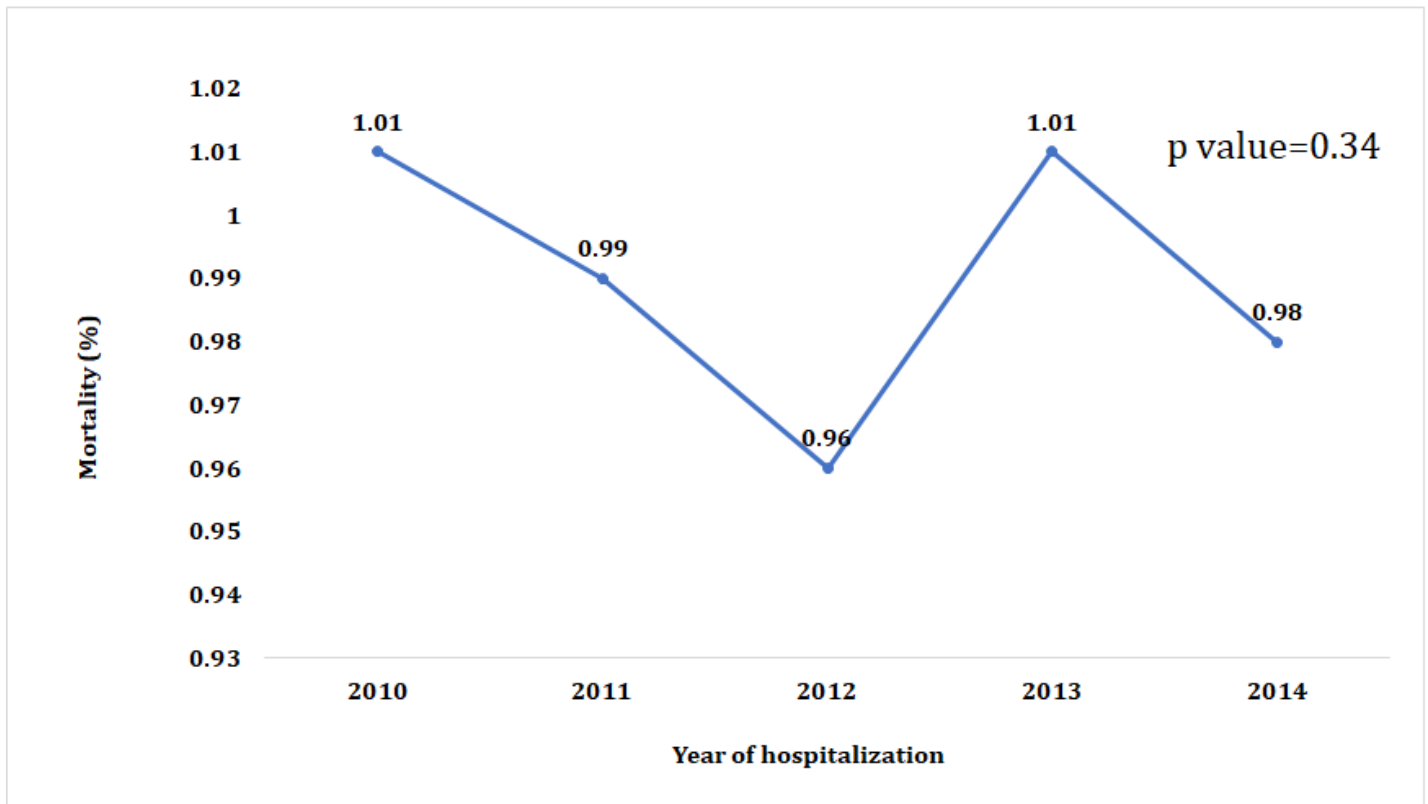


Figure S2. Yearly trend of in-hospital mortality following Atrial fibrillation hospitalization.

### Trend of mortality during index hospitalization



### Trend of mortality during rehospitalization

