

Replication of the RECOVER-II Anticoagulant Trial in Healthcare Claims

Data NCT04735523

January 25, 2021

## 1. RCT Details

This section provides a high-level overview of a **published** RCT that the described real-world evidence study is trying to replicate as closely as possible given the remaining limitations inherent in the healthcare databases.

### 1.1 Title

**Treatment of Acute Venous Thromboembolism with Dabigatran or Warfarin ([RECOVER II](#))**

### 1.2 Intended aim(s)

To compare the risk of symptomatic, recurrent venous thromboembolism (VTE) in patients with symptomatic deep vein thrombosis (DVT) or pulmonary embolism (PE) for dabigatran 150 mg versus warfarin.

### 1.3 Primary endpoint for replication

The primary outcome of the study was symptomatic, recurrent VTE or death related to VTE

### 1.4 Required power for primary endpoint and noninferiority margin (if applicable)

Assuming a primary event rate of 2% at 6 months follow-up and with a noninferiority margin of 2.75, it was determined that 2,550 patients would be needed to capture at least 46 events and achieve 90% power to conclude noninferiority of dabigatran over standard therapy at one-sided alpha level of 0.025.

### 1.5 Secondary endpoint for replication (assay sensitivity) and RCT finding

Major bleeding; RR= 0.69 (95% CI 0.36–1.32)

### 1.6 Trial estimate

RR = 1.08 (95% CI 0.64-1.80) comparing dabigatran vs warfarin (Schulman et al., 2014)

## 2. Person responsible for implementation of replication in Aetion

Dureshahwar Jawaid, MPH implemented the study design in the Aetion Evidence Platform. She is not responsible for the validity of the design and analytic choices. All implementation steps are recorded and the implementation history is archived in the platform.

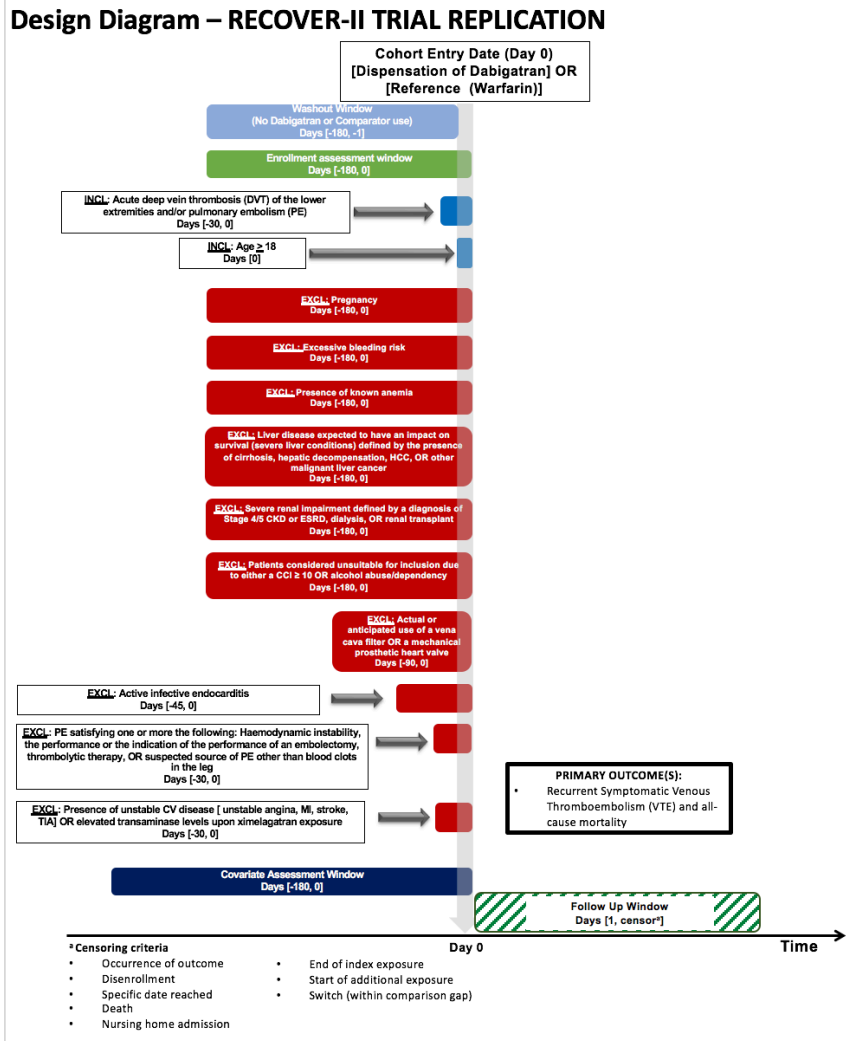
## 3. Data Source(s)

Optum, MarketScan, Medicare

4. Study Design Diagram

The study design diagram visualizes key aspects of the longitudinal study design for expedited review.

Figure 1.



## 5. Cohort Identification

### 5.1 Cohort Summary

This study will involve a new user, parallel group, propensity score-matched, retrospective cohort study design comparing dabigatran to warfarin users. The patients will be required to have continuous enrollment during a baseline period of 180 days before initiation of dabigatran to warfarin (index date). We will restrict the analyses to patients with a diagnosis of proximal DVT or PE.

### 5.2 Important steps for cohort formation

New use of dabigatran, exposure, and warfarin, comparator, is defined as no use in 180 days prior to index date.

#### 5.2.1 Eligible cohort entry dates

Market availability of dabigatran in the U.S. for treatment of deep vein thrombosis and pulmonary embolism started on April 7, 2014

- For Medicare: April 7, 2014 – December 31, 2017 (end of available data)
- For Marketscan: April 7, 2014 – December 31, 2018 (end of available data)
- For Optum: April 7, 2014 – March 31, 2020 (end of available data)

#### 5.2.2 Specify inclusion/exclusion criteria for cohort entry and define the index date.

Inclusion and exclusion criteria were adapted from the trial as closely as possible. Definitions for all inclusion/exclusion are provided in **Appendix A** and are summarized in the flowcharts below.

### 5.3 Flowchart of the study cohort assembly

	Optum		Truven		Medicare	
	Less Excluded Patients	Remaining Patients	Less Excluded Patients	Remaining Patients	Less Excluded Patients	Remaining Patients
All patients		77,673,639		200,203,908		6,886,908
Did not meet cohort entry criteria	- 77,124,704	548,935	- 199,725,626	478,282	-4,396,002	2,490,906

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Excluded due to insufficient enrollment	-67,201	481,734	-36,281	442,001	-52,122	2,438,784
Excluded due to prior use of referent	-378,710	103,024	-331,731	110,270	-1,924,222	514,562
Excluded due to prior use of exposure	-30,781	72,243	-35,333	74,937	-163,530	351,032
Excluded because patient qualified in >1 exposure category	-3	72,240	-1	74,936	-9	351,023
Excluded based on Age (<65 - Medicare only)	-	-	-	-	-36484	314,539
Excluded based on Age (Missing)	0	72,240	0	74,936	-105	314,434
Excluded based on Gender	0	72,240	0	74,936	0	314,434
Excluded based on Use of other NOACs ( Rivaroxaban, Apixaban, edoxaban)	-4,797	67,443	-3163	71,773	-17983	296,451
Excluded based on Inclusion # 1 - Age <= 18	-41	67,402	-76	71,697	0	296,451
Excluded based on Inclusion # 2 - VTE	-49,506	17,896	-48,049	23,648	-211,430	85,021
Excluded based on Exclusion # 2	-618	17,278	-389	23,259	-2,123	82,898
Excluded based on Exclusion # 3 - caval filter	-257	17,021	-294	22,965	-971	81,927
Excluded based on Exclusion # 4 - major bleeding	-1,096	15,925	-836	22,129	-3836	78,091
Excluded based on Exclusion # 5 - Anemia	-886	15,039	-952	21,177	-4,786	73,305
Excluded based on Exclusion # 7 - unstable CVD	-385	14,654	-221	20,956	-1,015	72,290
Excluded based on Exclusion # 9 - End-stage liver disease	-370	14,284	-315	20,641	-1,037	71,253
Excluded based on Exclusion # 10 - Severe renal impairment	-1,088	13,196	-741	19,900	-3,745	67,508
Excluded based on Exclusion # 11d - Active infective endocarditis	-2	13,194	-1	19,899	-4	67,504
Excluded based on Exclusion # 11e - Heart valve	-17	13,177	-78	19,821	-202	67,302
Excluded based on Exclusion # 12 - Pregnancy	-32	13,145	-58	19,763	-2	67,300
Excluded based on Exclusion # 13 - drug induced liver disease	0	13,145	0	19,763	0	67,300
Excluded based on Exclusion # 14a - alcohol/drug abuse	-138	13,007	-113	19,650	-198	67,102
Excluded based on CCI (180 days)- ICD9 and ICD10 v2	-41	12,966	-23	19,627	-73	67,029
<b>Final cohort</b>		<b>12,966</b>		<b>19,627</b>		<b>67,029</b>

## 6. Variables

### 6.1 Exposure-related variables:

#### Study drug:

The study exposure of interest is initiation of dabigatran. New initiation will be defined by no use of dabigatran or warfarin in the prior 6 months before treatment initiation (washout period).

#### Comparator:

New initiators of warfarin, defined by no use of dabigatran or warfarin in the prior 6 months.

### 6.2 Covariates:

- Age
- Sex
- Combined Comorbidity Index (CCI), measured over the baseline covariate assessment period, defined as 180 days prior to and including index date

Covariates listed above represent only a small subset of covariates that will ultimately be controlled for in the design and analysis. We use the covariates above only for initial feasibility analyses to judge whether there is likely to be sufficient overlap between treatment groups to proceed with the study. Remaining covariates are defined only after the study has passed the initial feasibility analysis and the initial power assessment and are listed in Table 1 (**Appendix B**).

### 6.3 Outcome variables and study follow-up:

#### 6.3.1 Outcome variables

Primary Effectiveness outcomes of interest: (definitions provided in **Appendix A**):

- **Primary Outcome:** VTE and cause-specific mortality
- **Secondary Outcome:** Individual components

- Hospital admission for VTE (principal diagnosis position)
- Cause-specific mortality
  - Inpatient mortality identified using discharge status codes from hospitalization for VTE

Safety outcome of interest:

1. Major bleeding

#### 6.3.2 Study follow-up

Both as-treated (AT) and intention-to-treat (ITT) analyses will be conducted with treatment defined as the index drug on the day of cohort entry. Because adherence in the real-world databases is expected to be much worse than in the trial, the AT analysis is the **primary** analysis, as it targets the relative hazard of outcomes on treatment.

For the AT analyses, the follow-up will start the day after initiation of dabigatran and comparator and will continue until the earliest date of the following events:

- The first occurrence of the outcome of interest, unless otherwise specified for selected outcomes,
- The date of end of continuous registration in the database,
- End of the study period,
- Measured death event occurs,
- Nursing home admission
  - Nursing home admissions are considered a censoring event because the data sources utilized typically provide little to no data on a patient, particularly on drug utilization, after admission. We will utilize this as an exclusion reason for cohorts for the same reason.
- The date of drug discontinuation, defined as the date of the last continuous treatment episode of the index drug (dabigatran and comparator) plus a defined grace period (i.e., 10 days after the end of the last prescription's days' supply in main analyses).
- The date of augmentation or switching from exposure to comparator or vice versa or augmentation/switching to any other NOAC (e.g. switching from dabigatran to rivaroxaban would be a censoring event);
  - A dosage change on the index treatment does not fulfill this criterion
  - An added treatment that is not part of the exposure or comparator group does not fulfill this criterion

For the intention-to-treat (ITT) analyses, the censoring based on the augmentation/switching and treatment discontinuation will be replaced with a maximum allowed follow-up time of 180 days.

## 7. Initial Feasibility Analysis

Aetion report name:

For dabigatran vs. warfarin

Optum- <https://bwh-dope.aetion.com/projects/details/1500/results/62528/result/0>

MarketScan- <https://bwh-dope.aetion.com/projects/details/1501/results/62529/result/0>

Medicare- <https://bwh-dope.aetion.com/projects/details/1499/results/63197/result/0>

Date conducted: 12/9/2020 (Medicare 12/23/20)

Complete Aetion feasibility analysis using age, sex, and CCI as the only covariates and the primary endpoint (Section 6.3.1) as the outcome. No measures of association will be computed nor will incidence rates stratified by treatment group.

- Report patient characteristics by treatment group
- Report summary parameters of study population **FEASIBILITY- FOR STUDY OUTCOME**
- Report median follow-up time by treatment group
- Report reasons for censoring in the overall study population

## 8. Initial Power Assessment

Aetion report name:

For dabigatran vs. warfarin

Optum- <https://bwh-dope.aetion.com/projects/details/1500/results/62531/result/0>

MarketScan- <https://bwh-dope.aetion.com/projects/details/1501/results/62532/result/0>

Medicare- <https://bwh-dope.aetion.com/projects/details/1499/results/63198/result/0>

Date conducted: 12/9/2020 (Medicare 12/23/20)



In order to complete the initial power analysis, the dummy outcome of a 90-day gap in database enrollment will be used. This outcome is used to ensure that no information on the comparative risks of the outcomes of interest are available at this stage. Complete a 1:1 PS-matched comparative analysis using this outcome. PS should include only 3 covariates: age, sex, and combined comorbidity index. Power calculations are based on the formulas from Chow et al. (2008).

- Stop analyses until feasibility and power are reviewed by primary investigators and FDA. Reviewers evaluate the results of the analyses described above in Sections 7 and 8, including numbers of patients, patient characteristics, follow-up time, and reasons for censoring by treatment group, as well as overall rates of outcomes and study power. These parameters are re-evaluated and reported in the subsequent sections, after incorporating feedback and refining the protocol.
- Stop analyses until feasibility and power are reviewed by primary investigators, FDA, and assigned members of advisory board.

Reviewed by PI:	Jessica Franklin	Date reviewed:	11/18/2020
Reviewed by FDA:	Ken Quinto	Date reviewed:	11/29/2020
Reasons for stopping analysis (if required):			

## 9. Balance Assessment

### Action report links:

Optum: <https://bwh-dope.aetion.com/projects/details/1500/results/62793/result/0>

Marketscan: <https://bwh-dope.aetion.com/projects/details/1501/results/62794/result/0>

Medicare: <https://bwh-dope.aetion.com/projects/details/1499/results/63201/result/0>

Date conducted: 12/16/20 (Medicare 12/23/20)

After review of initial feasibility and power analyses, complete creation of the remaining covariates from Section 6.2. Again, using the dummy outcome of a 90-day gap in database enrollment, complete a 1:1 PS-matched analysis. The PS should include the complete list of covariates.

- Provide plot of PS distributions stratified by treatment group.

Note- Please refer to **Appendix B**.

- Report covariate balance after matching.

Note- For Table 1, please refer to **Appendix B**.

- Report reasons for censoring by treatment group.

	Overall	Referent	Exposure
Dummy outcome	47 (0.88%)	24 (0.90%)	23 (0.86%)
Death	91 (1.70%)	54 (2.02%)	37 (1.38%)
Start of an additional exposure	105 (1.96%)	18 (0.67%)	87 (3.25%)
End of index exposure	3,523 (65.85%)	1,724 (64.45%)	1,799 (67.25%)
Specified date reached	562 (10.50%)	269 (10.06%)	293 (10.95%)
End of patient enrollment	217 (4.06%)	109 (4.07%)	108 (4.04%)
Switch to NOACs + nursing home admission	805 (15.05%)	477 (17.83%)	328 (12.26%)

- Report follow-up time by treatment group.

Median Follow-Up Time (Days) [IQR]			
Patient Group	Optum	Marketscan	Medicare
Overall Patient Population	84 [38-176]	88.5 [38-163]	84 [38-164]
Referent	79 [38-156]	82 [38-160]	89 [38-168]
Exposure	93 [38-188]	92 [38-171]	77[38-157]

- Report overall risk of the primary outcome.

	Optum	Marketscan	Medicare	Pooled
Risk per 1,000 patients	8.11	14.8	19.67	17.19

## 10. Final Power Assessment

Date conducted: 12/16/20

- Re-calculate power in the appropriate excel table, using the revised number of matched patients from the PS-match in Section 9. All other parameters in the table should be the same as in Section 8.

- Pooled

<b>Non-inferiority Analysis</b>	
Number of patients matched	
Reference	2,675
Exposed	2,675
Risk per 1,000 patients	17.19
HR from RCT	1.08
Alpha (2-sided)	0.05
Non-inferiority margin	2.75
Number of events expected	91.9665
Power	0.994158797

- Optum

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<b>Non-inferiority Analysis</b>	
Number of patients matched	
Reference	387
Exposed	387
Risk per 1,000 patients	8.11
HR from RCT	1.08
Alpha (2-sided)	0.05
Non-inferiority margin	2.75
Number of events expected	6.27714
Power	0.215017932

○ Marketscan

<b>Non-inferiority Analysis</b>	
Number of patients matched	
Reference	711
Exposed	711
Risk per 1,000 patients	14.80
HR from RCT	1.08
Alpha (2-sided)	0.05
Non-inferiority margin	2.75
Number of events expected	21.0456
Power	0.572949662

○ Medicare

<b>Non-inferiority Analysis</b>	
Number of patients matched	
Reference	1,577
Exposed	1,577
Risk per 1,000 patients	19.67
HR from RCT	1.08
Alpha (2-sided)	0.05
Non-inferiority margin	2.75
Number of events expected	62.03918
Power	0.95736364

- Stop analyses until balance and final power assessment are reviewed by primary investigators, FDA, and assigned members of advisory board.

Reviewed by PI:	Shirley Wang	Date reviewed:	12/24/2020
Reviewed by FDA:	Ken Quinto	Date reviewed:	01/18/2020
Reasons for stopping analysis (if required):			

## 11. Study Confidence and Concerns

Deadline for voting on study confidence and listing concerns:

Date votes and concerns are summarized:

- If final feasibility and power analyses are reviewed and approved, proceed to the remaining protocol steps.
- All study team and advisory board members that review this protocol should at this stage provide their level of confidence for the success of the RWD study in the [Google Form](#). This form also provides space for reviewers to list any concerns that they feel may contribute to a failure to replicate the findings of the RCT, including differences in study populations, poor measurement of study

variables, or residual confounding. All responses will be kept confidential and individual-level results will only be shared with the individual respondent.

- After the deadline for voting has passed, provide the distribution of responses and summarize all concerns here.

## 12. Register study protocol on clinicalTrials.gov

Date conducted:

- Register the study on [clinicalTrials.gov](https://clinicaltrials.gov) and upload this document.

## 13. Comparative Analyses

Action report name:

Date conducted:

13.1 For primary analysis:

13.2 For sensitivity analyses:

## 14. Requested Results

14.1 Table 1: Baseline characteristics before and after adjustment

Variable	Before adjustment			After adjustment		
	Referent	Exposure	Std. diff.	Referent	Exposure	Std. diff.
Number of patients			-			-
Age categories						
...						

14.2 Table 2: Follow-up time

Patient Group	Median Follow-Up Time (Days) [IQR]
Overall Patient Population	
Referent	
Exposure	

14.3 Table 3: Censoring events

	Overall	Referent	Exposure
Outcome			
Death			
Start of an additional exposure			
End of index exposure			
Specified date reached			
End of patient data			
End of patient enrollment			
...			

14.4 Table 4: Results from primary analyses;

Analysis	No. exposed events	No. referent events	Exposed rate	Referent rate	HR (95% CI)
Crude					
Analysis 1					
Analysis 2					
...					

HR, Hazard Ratio; CI, Confidence Interval.

14.5 Table 5: Results from secondary analyses;

## 15. References

Chow S, Shao J, Wang H. 2008. *Sample Size Calculations in Clinical Research*. 2nd Ed. Chapman & Hall/CRC Biostatistics Series. page 177

Schulman S, Kakkar AK, Goldhaber SZ, et al. Treatment of Acute Venous Thromboembolism With Dabigatran or Warfarin and Pooled Analysis. *Circulation*. 2014;129:764–772



Appendix A

#	RE-COVER II trial definitions	Implementation in routine care	References	Notes	Color coding
	Trial details- Primary approval: Unintended 5 with label change				Can be replicated in claims
	EXPOSURE vs. COMPARISON				Using dummy definitions for measuring in claims
	Fixed doses of dabigatran (150 mg twice daily) vs. adjusted-dose warfarin Concomitant Medications: Low molecular weight heparin (89%), fondaparinux (2%), and aspirin (9%)	Exposure dabigatran Referent warfarin			Can't be measured in claims
	PRIMARY OUTCOME				Can't be measured in claims but not important for the analysis
	Recurrent <b>Symptomatic Venous Thromboembolism (VTE)</b> and <b>Deaths Related to VTE</b> [ Time Frame: For statistical analysis 1: from randomisation to end of post treatment period (ptp), planned to be up to day 224. For statistical analysis 2: from randomisation to 6 months (up to day 180) ]	Measured 1 day after drug initiation in primary diagnosis position inpatient care setting  VTE codes (see excel sheet RECOVER outcome VTE)	Fang MC, Fan D, Sung SH, et al. Validity of Using Inpatient and Outpatient Administrative Codes to Identify Acute Venous Thromboembolism: The CVRN VTE Study. Med Care. 2017;55(12):e137-e143.  Codes for pregnancy-related VTE and superficial thrombophlebitis were not included.		
	INCLUSION CRITERIA				
1	Age ≥18 years	Measured on the day of drug initiation  Age >18			
2	Acute deep vein thrombosis (DVT) of the leg involving proximal veins, and/or pulmonary embolism (PE) in patients for whom at least 6 months of anticoagulant therapy is considered appropriate.  PE and DVT were objectively verified by: Compression ultrasonography, Venography of legs, V/Q scanning, Angiography or CT angiography	Measured 30 days before the day of drug initiation any diagnosis position  see excel sheet RECOVER outcome VTE- same codes, diagnosis setting and position specified above			
3	Written informed consent	N/A			
	EXCLUSION CRITERIA				
1	Overt symptoms of VTE for longer than 2 weeks prior to enrolment	N/A			
2	PE satisfying at least one of the following criteria:	Measured 30 days before the day of drug initiation any diagnosis position  <u>Pulmonary embolism</u> ICD-9 diagnosis: 415.1x (already in inclusion criteria 2)		The inclusion and exclusion criteria were the same as previously described [RECOVER I] except that baseline aminotransferases had to exceed 3 times rather than 2 times the local upper limit of the normal for patients to be excluded." Schulman S, Kakkar AK, Goldhaber SZ, et al. Treatment of Acute Venous Thromboembolism With Dabigatran or Warfarin and Pooled Analysis. Circulation. 2014;129:764–772  Seeing as the exclusion criteria were declared to be the same for the two trials, we also referred to the criteria described in RECOVER 1 to construct our list of criteria for trial emulation.	
2a	Haemodynamic instability,	N/A (mostly captured by the criteria 2b-2c and 3)			
2b	OR Embolectomy is indicated or performed,	<u>Thrombectomy</u> ICD-9 procedure: 39.74 ICD-10 procedure: 03CG3ZZ, 03CG4ZZ, 03CH3ZZ, 03CH4ZZ, 03CJ3ZZ, 03CJ4ZZ, 03CK3ZZ, 03CK4ZZ, 03CL3ZZ, 03CL4ZZ, 03CM3ZZ, 03CM4ZZ, 03CN3ZZ, 03CN4ZZ, 03CP3ZZ, 03CP4ZZ, 03CQ3ZZ, 03CQ4ZZ, 03CR3ZZ, 03CR4ZZ, 03CS3ZZ, 03CS4ZZ, 03CT3ZZ, 03CT4ZZ, 03CU3ZZ, 03CU4ZZ, 03CV3ZZ, 03CV4ZZ HCPCS: C1757			
2c	OR thrombolytic therapy is indicated or performed,	<u>Generic names (Brand names):</u> Streptokinase (Streptase) Urokinase (Abbokinase, Kinlytic) Alteplase (Activase, Cathflo Activase)  <u>CPT codes:</u> 37212 Transcatheter therapy, venous infusion for thrombolysis, any method, including radiological supervision and interpretation, initial treatment day		Not indicated by FDA for PE: <u>Retepase (Retavase)</u> <u>Tenecteplase (TNKase)</u> <u>Anistreplase (Eminase)</u>	
2d	OR suspected source of PE is other than blood clots from the legs	Fracture-related pulmonary embolism (fractures for hip, pelvis, femur, tibia, and fibula - separate excel sheet)  Cancer-related pulmonary embolism (cancer diagnosis - separate excel sheet)			
3	Actual or anticipated use of vena cava filter	Measured 90 days before the day of drug initiation any diagnosis position <u>Caval filter</u> CPT: 37351, 37192 HCPCS: C1880			
4	Patients who in the investigators judgement are perceived as having an <u>excessive risk of bleeding</u>	See Major bleeding separate excel sheet			

Appendix A

5	Known anaemia	Measured 180 days prior to drug initiation in any diagnosis position and inpatient or outpatient care setting  <u>Anemia</u> [non-deficiency/neoplastic/chemotherapy/hemorrhagic associated] ICD-9 diagnosis: 282.x, 283.x, 284.x, 285.x ICD-10 diagnosis: D55 - D62, D63.0			
6	Need of anticoagulant treatment for disorders other than VTE	N/A			
7	Recent unstable cardiovascular disease	Measured 30 days before the day of drug initiation any diagnosis position and inpatient or outpatient care setting  <u>Unstable angina:</u> ICD-9: 411.x ICD-10: I24.1x, I20.0x, I25.1x, I25.7x, I24.Dx, I24.Bx, I24.9x <u>MI</u> ICD-9: 410.x except 410.x2 <u>Stroke</u> ICD-9: 430.xx, 431.xx, 433.x1, 434.xx, 436.x <u>TIA</u> ICD-9: 435.xx			
8	Elevated AST or ALT > 3x ULN	N/A			
9	Liver disease expected to have any potential impact on survival (severe liver conditions)	Measured 180 days before the day of drug initiation any diagnosis position and inpatient or outpatient care setting  Model for end-stage liver disease:  <u>Cirrhosis:</u> ICD-9 codes: 571.2 (alcoholic cirrhosis), 571.5 (cirrhosis without mention of alcohol, 571.6 (biliary cirrhosis).  <u>Hepatic decompensation:</u> ICD-9 codes: 456.0, 456.20 (esophageal varices with bleeding); 456.1, 456.21 (esophageal varices without bleeding); 789.5, 789.59 (ascites); 572.2 (hepatic coma); 567.0, 567.2, 567.21, 567.21, 567.29, 567.8, 567.89, 567.9 (peritonitis); 572.4 (hepatorenal syndrome)  <u>HCC and other malignant liver cancers:</u> ICD-9 codes: 155.x ICD-10 codes: C22.x	"A coding algorithm combining ICD-9-CM codes for cirrhosis and hepatic decompensation events, with or without ICD-9-CM codes for a chronic liver disease, can identify patients with end-stage liver disease"  Goldberg D, Lewis J, Halpern S, Weiner M, Lo Re V 3rd. Validation of three coding algorithms to identify patients with end-stage liver disease in an administrative database. Pharmacoepidemiol Drug Saf. 2012 Jul;21(7):765-769. doi: 10.1002/pds.3290. Epub 2012 Jun 4. PMID: 22674685; PMCID: PMC4267226.		
10	Severe renal impairment	Measured 180 days before the day of drug initiation any diagnosis position and inpatient or outpatient care setting  <u>CKD stage 4/5/ESRD:</u> ICD-9: 585.4x, 585.5x, 585.6x ICD-10: N18.4x, N18.5x, N18.6x  <u>Dialysis/ Renal transplant:</u> codes are in the sheet "Dialysis and Renal Transplant"			
11	Contraindications to anticoagulant therapy (not specified)	mostly captured in criteria 4			
11a	Recent or active major bleeding	see criteria 4			
11b	Recent brain, eye, or spinal cord injury or surgery;	see criteria 4			
11c	malignant or severe, uncontrolled hypertension	see criteria 4			
11d	Active infective endocarditis	Measured 45 days prior to drug initiation in any diagnosis setting, any position:  <u>Infective endocarditis</u> ICD-9 codes: 421.x ICD-10 codes: I33.x			
11e	Mechanical prosthetic heart valve (recently implanted - RE-ALIGN trial)	Measured 90 days prior to drug initiation in in patient, inpatient setting, any position  <u>Heart Valve</u> ICD-9 codes: V42.2 (heart valve replaced by transplant) V43.3 (heart valve replaced by a mechanical device/prosthesis)  CPT codes: 33660-33665 (atrioventricular valve repair) 33400-33403 (aortic valve valvuloplasty) 33405 (Replacement, aortic valve, with cardiopulmonary bypass; with prosthetic valve other than homograft or stentless valve) 33420-33430 (mitral valve repair/valvuloplasty/replacement) 33460 (valvectomy, tricuspid valve, with cardiopulmonary bypass) 33463-33468 (tricuspid valve repair/valvuloplasty/replacement) 33475 (replacement, pulmonary valve) 33496 (prosthetic valve dysfunction repair) 0257T (implantation of catheter-delivered prosthetic aortic heart valve; open thoracic approach) 0258T (transthoracic cardiac exposure for catheter-delivered aortic valve replacement;without cardiopulmonary bypass) 0259T (transthoracic cardiac exposure for catheter-delivered aortic valve replacement;with cardiopulmonary bypass) 0262T (implantation of catheter-delivered prosthetic pulmonary valve, endovascular approach)			
12	Women who are pregnant, nursing, or of childbearing potential who refuse to use a medically acceptable form of contraception	see excel "Pregnancy"			

Appendix A

13	Patients who have developed transaminase elevations upon exposure to ximelagatran	Measured 30 days before the day of drug initiation any diagnosis position Drug-induced liver disease AND ximelagatran  ICD-10: K71.9 - Toxic liver disease (drug induced disorder of liver)			
14	Patients considered unsuitable for inclusion by the investigator	Measured 180 days prior to drug initiation in any diagnosis position and inpatient or outpatient care setting CC >=10 (life expectancy less than the expected duration of the trial)  or  Alcohol abuse or dependence (any position, any setting) ICD-9 diagnosis: 291.xx, 303.xx, 305.0x, 571.0x, 571.1x, 571.2x, 571.3x, 357.5x, 425.5x, E860.0x (CMS has not released mapping for new ICD10 for this code), V11.3x ICD-10 diagnosis: F10.x, K70.x, G62.1, I42.6, 099.31x Drug abuse or dependence (any position, any setting) 292.xx, 304.xx, 305.2x-305.9x, 648.3x 965.0x, 967.xx, 969.4x-969.6x, 969.72-969.79, 970.81 ICD-10 diagnosis: F11.x, F12.x, F13.x, F14.x, F15.x, F16.x, F18.x, F19.x, G62.0, 099.32x			
15	Patients who in the investigators opinion should not be treated with warfarin				
16	Allergy to heparins or other alternate approved therapy used for initial treatment, warfarin or dabigatran, or to one of the excipients included in these medications				
17	Participation in another clinical trial with an investigational drug during the last 30 days or previous participation in this study				

## Appendix A

<b><u>Trial ID</u></b>	
<b><u>Trial Name (with web links)</u></b>	<a href="#">RE-COVER II</a>
<b><u>Trial Name (with pdf links)</u></b>	
<b><u>NCT</u></b>	<a href="#">NCT00680186</a>
<b><u>Therapeutic Area</u></b>	Cardiology/Vascular Diseases
<b><u>Study Batch</u></b>	NOACs
<b><u>Brand Name</u></b>	Pradaxa
<b><u>Generic Name</u></b>	dabigatran etexilate
<b><u>Year</u></b>	2013
<b><u>Measurable Endpoint</u></b>	recurrent venous thromboembolism
<b><u>Exposure</u></b>	dabigatran etexilate
<b><u>Comparator</u></b>	warfarin
<b><u>Population</u></b>	
<b><u>Trial Finding</u></b>	1.08 (95% CI 0.64–1.80)
<b><u>No. of Patients</u></b>	Dabigatran (n=1280) Warfarin (n=1288)
<b><u>Non-inferiority Margin</u></b>	2.75
<b><u>Assay Sens. Endpoint</u></b>	
<b><u>Assay Sens. Finding</u></b>	
<b><u>Power</u></b>	<p>90% power-</p> <p>"We determined the sample size on the basis of an expected rate of recurrent VTE of 2% in each group during 6 months,2,13,14 while requiring a power of 90% to exclude a hazard ratio of 2.75, an absolute risk increase of 3.6 percentage points for the primary outcome with dabigatran, and a 1-sided <math>\alpha</math> level of 0.025"</p> <p>Schulman S, Kakkar AK, Goldhaber SZ, et al. Treatment of Acute Venous Thromboembolism With Dabigatran or Warfarin and Pooled Analysis. Circulation. 2014;129:764–772</p>

## Appendix A

Venous Thromboembolism (VTE)	
<b>ICD-9 codes - primary position</b>	
<b>PE</b>	
415.1	Pulmonary embolism and infarction
415.11	Iatrogenic pulmonary embolism and infarction
415.19	Other pulmonary embolism and infarction
<b>DVT lower extremity</b>	
451.1	Phlebitis and thrombophlebitis of deep veins of lower extremities
451.11	Phlebitis and thrombophlebitis of femoral vein (deep)
451.19	Phlebitis and thrombophlebitis of deep veins of lower extremities, other
451.2	Phlebitis and thrombophlebitis of lower extremities, unspecified
451.81	of Iliac vein
453.4	Acute venous embolism and thrombosis of deep vessels of lower extremity
453.40	Acute venous embolism and thrombosis of unspecified deep vessels of lower extremity
453.41	Acute venous embolism and thrombosis of deep vessels of proximal lower extremity
453.42	Acute venous embolism and thrombosis of deep vessels of distal lower extremity
453.5	Chronic venous embolism and thrombosis of deep vessels of lower extremity
453.50	Chronic venous embolism and thrombosis of unspecified deep vessels of lower extremity
453.51	Chronic venous embolism and thrombosis of deep vessels of proximal lower extremity
453.52	Chronic venous embolism and thrombosis of deep vessels of distal lower extremity
<b>ICD-10 codes - primary position</b>	
<b>PE</b>	
I26.0	Pulmonary embolism with acute cor pulmonale
I26.09	Other pulmonary embolism with acute cor pulmonale
I26.9	Pulmonary embolism without acute cor pulmonale
I26.93	Single subsegmental pulmonary embolism without acute cor pulmonale
I26.94	Multiple subsegmental pulmonary emboli without acute cor pulmonale
I26.99	Other pulmonary embolism without acute cor pulmonale

## Appendix A

<b>DVT lower extremity</b>	
I80.1	Phlebitis and thrombophlebitis of femoral vein
I80.10	Phlebitis and thrombophlebitis of unspecified femoral vein
I80.11	Phlebitis and thrombophlebitis of right femoral vein
I80.12	Phlebitis and thrombophlebitis of left femoral vein
I80.13	..... bilateral
I80.2	Phlebitis and thrombophlebitis of other and unspecified deep vessels of lower ext
I80.20	Phlebitis and thrombophlebitis of unspecified deep vessels of lower extremities
I80.201	Phlebitis and thrombophlebitis of unspecified deep vessels of right lower extre
I80.202	Phlebitis and thrombophlebitis of unspecified deep vessels of left lower extrem
I80.203	..... bilateral
I80.209	Phlebitis and thrombophlebitis of unspecified deep vessels of unspecified lower
I80.21	Phlebitis and thrombophlebitis of iliac vein
I80.211	Phlebitis and thrombophlebitis of right iliac vein
I80.212	Phlebitis and thrombophlebitis of left iliac vein
I80.213	..... bilateral
I80.219	Phlebitis and thrombophlebitis of unspecified iliac vein
I80.22	Phlebitis and thrombophlebitis of popliteal vein
I80.221	Phlebitis and thrombophlebitis of right popliteal vein
I80.222	Phlebitis and thrombophlebitis of left popliteal vein
I80.223	..... bilateral
I80.229	Phlebitis and thrombophlebitis of unspecified popliteal vein
I80.23	Phlebitis and thrombophlebitis of tibial vein
I80.231	Phlebitis and thrombophlebitis of right tibial vein
I80.232	Phlebitis and thrombophlebitis of left tibial vein
I80.24	Phlebitis and thrombophlebitis of peroneal vein
I80.241	Phlebitis and thrombophlebitis of right peroneal vein
I80.242	Phlebitis and thrombophlebitis of left peroneal vein
I80.243	..... bilateral
I80.249	Phlebitis and thrombophlebitis of unspecified peroneal vein
I80.25	Phlebitis and thrombophlebitis of calf muscular vein
I80.251	Phlebitis and thrombophlebitis of right calf muscular vein
I80.252	Phlebitis and thrombophlebitis of left calf muscular vein

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I80.253	..... bilateral
I80.259	Phlebitis and thrombophlebitis of unspecified calf muscular vein
I80.29	Phlebitis and thrombophlebitis of other deep vessels of lower extremities
I80.291	Phlebitis and thrombophlebitis of other deep vessels of right lower extremity
I80.292	Phlebitis and thrombophlebitis of other deep vessels of left lower extremity
I80.293	Phlebitis and thrombophlebitis of other deep vessels of lower extremity, bilate
I80.299	Phlebitis and thrombophlebitis of other deep vessels of unspecified lower extre
I80.3	Phlebitis and thrombophlebitis of lower extremities, unspecified
I82.4	Acute embolism and thrombosis of deep veins of lower extremity
I82.40	Acute embolism and thrombosis of unspecified deep veins of lower extremity
I82.401	Acute embolism and thrombosis of unspecified deep veins of right lower extremity
I82.402	Acute embolism and thrombosis of unspecified deep veins of left lower extremity
I82.403	..... bilateral
I82.409	Acute embolism and thrombosis of unspecified deep veins of unspecified lower extremity
I82.41	Acute embolism and thrombosis of femoral vein
I82.411	Acute embolism and thrombosis of right femoral vein
I82.412	Acute embolism and thrombosis of left femoral vein
I82.413	..... bilateral
I82.419	Acute embolism and thrombosis of unspecified femoral vein
I82.42	Acute embolism and thrombosis of iliac vein
I82.421	Acute embolism and thrombosis of right iliac vein
I82.422	Acute embolism and thrombosis of left iliac vein
I82.423	..... bilateral
I82.429	Acute embolism and thrombosis of unspecified iliac vein
I82.43	Acute embolism and thrombosis of popliteal vein
I82.431	Acute embolism and thrombosis of right popliteal vein
I82.432	Acute embolism and thrombosis of left popliteal vein
I82.433	..... bilateral
I82.439	Acute embolism and thrombosis of unspecified popliteal vein
I82.44	Acute embolism and thrombosis of tibial vein
I82.441	Acute embolism and thrombosis of right tibial vein
I82.442	Acute embolism and thrombosis of left tibial vein
I82.443	..... bilateral

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I82.449	Acute embolism and thrombosis of unspecified tibial vein
I82.45	Acute embolism and thrombosis of peroneal vein
I82.451	Acute embolism and thrombosis of right peroneal vein
I82.452	Acute embolism and thrombosis of left peroneal vein
I82.453	..... bilateral
I82.459	Acute embolism and thrombosis of unspecified peroneal vein
I82.46	Acute embolism and thrombosis of calf muscular vein
I82.461	Acute embolism and thrombosis of right calf muscular vein
I82.462	Acute embolism and thrombosis of left calf muscular vein
I82.463	..... bilateral
I82.469	Acute embolism and thrombosis of unspecified calf muscular vein
I82.49	Acute embolism and thrombosis of other specified deep vein of lower extremity
I82.491	Acute embolism and thrombosis of other specified deep vein of right lower extremity
I82.492	Acute embolism and thrombosis of other specified deep vein of left lower extremity
I82.493	..... bilateral
I82.499	Acute embolism and thrombosis of other specified deep vein of unspecified lower extremity
I82.4Y	Acute embolism and thrombosis of unspecified deep veins of proximal lower extremity
I82.4Y1	Acute embolism and thrombosis of unspecified deep veins of right proximal lower extremity
I82.4Y2	Acute embolism and thrombosis of unspecified deep veins of left proximal lower extremity
I82.4Y3	..... bilateral
I82.4Y9	Acute embolism and thrombosis of unspecified deep veins of unspecified proximal lower extremity
I82.4Z	Acute embolism and thrombosis of unspecified deep veins of distal lower extremity
I82.4Z1	Acute embolism and thrombosis of unspecified deep veins of right distal lower extremity
I82.4Z2	Acute embolism and thrombosis of unspecified deep veins of left distal lower extremity
I82.4Z3	..... bilateral
I82.4Z9	Acute embolism and thrombosis of unspecified deep veins of unspecified distal lower extremity
I82.5	Chronic embolism and thrombosis of deep veins of lower extremity
I82.50	Chronic embolism and thrombosis of unspecified deep veins of lower extremity
I82.501	Chronic embolism and thrombosis of unspecified deep veins of right lower extremity
I82.502	Chronic embolism and thrombosis of unspecified deep veins of left lower extremity
I82.503	..... bilateral
I82.509	Chronic embolism and thrombosis of unspecified deep veins of unspecified lower extremity
I82.51	Chronic embolism and thrombosis of femoral vein



## Appendix A

I82.511	Chronic embolism and thrombosis of right femoral vein
I82.512	Chronic embolism and thrombosis of left femoral vein
I82.513	..... bilateral
I82.519	Chronic embolism and thrombosis of unspecified femoral vein
I82.52	Chronic embolism and thrombosis of iliac vein
I82.521	Chronic embolism and thrombosis of right iliac vein
I82.522	Chronic embolism and thrombosis of left iliac vein
I82.523	..... bilateral
I82.529	Chronic embolism and thrombosis of unspecified iliac vein
I82.53	Chronic embolism and thrombosis of popliteal vein
I82.531	Chronic embolism and thrombosis of right popliteal vein
I82.532	Chronic embolism and thrombosis of left popliteal vein
I82.533	..... bilateral
I82.539	Chronic embolism and thrombosis of unspecified popliteal vein
I82.54	Chronic embolism and thrombosis of tibial vein
I82.541	Chronic embolism and thrombosis of right tibial vein
I82.542	Chronic embolism and thrombosis of left tibial vein
I82.543	..... bilateral
I82.549	Chronic embolism and thrombosis of unspecified tibial vein
I82.55	Chronic embolism and thrombosis of peroneal vein
I82.551	Chronic embolism and thrombosis of right peroneal vein
I82.552	Chronic embolism and thrombosis of left peroneal vein
I82.553	..... bilateral
I82.559	Chronic embolism and thrombosis of unspecified peroneal vein
I82.56	Chronic embolism and thrombosis of calf muscular vein
I82.561	Chronic embolism and thrombosis of right calf muscular vein
I82.562	Chronic embolism and thrombosis of left calf muscular vein
I82.563	..... bilateral
I82.569	Chronic embolism and thrombosis of unspecified calf muscular vein
I82.59	Chronic embolism and thrombosis of other specified deep vein of lower extremity
I82.591	Chronic embolism and thrombosis of other specified deep vein of right lower extremity
I82.592	Chronic embolism and thrombosis of other specified deep vein of left lower extremity
I82.593	..... bilateral

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I82.599	Chronic embolism and thrombosis of other specified deep vein of unspecified lower extremity
I82.5Y	Chronic embolism and thrombosis of unspecified deep veins of proximal lower extremity
I82.5Y1	Chronic embolism and thrombosis of unspecified deep veins of right proximal lower extremity
I82.5Y2	Chronic embolism and thrombosis of unspecified deep veins of left proximal lower extremity
I82.5Y3	..... bilateral
I82.5Y9	Chronic embolism and thrombosis of unspecified deep veins of unspecified proximal lower extremity
I82.5Z	Chronic embolism and thrombosis of unspecified deep veins of distal lower extremity
I82.5Z1	Chronic embolism and thrombosis of unspecified deep veins of right distal lower extremity
I82.5Z2	Chronic embolism and thrombosis of unspecified deep veins of left distal lower extremity
I82.5Z3	..... bilateral
I82.5Z9	Chronic embolism and thrombosis of unspecified deep veins of unspecified distal lower extremity

## Appendix A

Hip Fracture	
Diagnosis	
733.14	(ICD9) PATHOLOGICAL FRACTURE OF NECK OF FEMUR
733.96	(ICD9) STRESS FRACTURE OF FEMORAL NECK
820	(ICD9) TRANSCERVICAL FRACTURE CLOSED
820	(ICD9) FRACTURE OF UNSPECIFIED INTRACAPSULAR SECTION OF NECK OF FEMUR CLOSED
820.01	(ICD9) FRACTURE OF EPIPHYSIS (SEPARATION) (UPPER) OF NECK OF FEMUR CLOSED
820.02	(ICD9) FRACTURE OF MIDCERVICAL SECTION OF FEMUR CLOSED
820.03	(ICD9) FRACTURE OF BASE OF NECK OF FEMUR CLOSED
820.09	(ICD9) OTHER TRANSCERVICAL FRACTURE OF FEMUR CLOSED
820.1	(ICD9) TRANSCERVICAL FRACTURE OPEN
820.1	(ICD9) FRACTURE OF UNSPECIFIED INTRACAPSULAR SECTION OF NECK OF FEMUR OPEN
820.11	(ICD9) FRACTURE OF EPIPHYSIS (SEPARATION) (UPPER) OF NECK OF FEMUR OPEN
820.12	(ICD9) FRACTURE OF MIDCERVICAL SECTION OF FEMUR OPEN
820.13	(ICD9) FRACTURE OF BASE OF NECK OF FEMUR OPEN
820.19	(ICD9) OTHER TRANSCERVICAL FRACTURE OF FEMUR OPEN
820.2	(ICD9) PERTROCHANTERIC FRACTURE OF FEMUR CLOSED
820.2	(ICD9) FRACTURE OF UNSPECIFIED TROCHANTERIC SECTION OF FEMUR CLOSED
820.21	(ICD9) FRACTURE OF INTERTROCHANTERIC SECTION OF FEMUR CLOSED
820.22	(ICD9) FRACTURE OF SUBTROCHANTERIC SECTION OF FEMUR CLOSED
820.3	(ICD9) PERTROCHANTERIC FRACTURE OF FEMUR OPEN
820.3	(ICD9) FRACTURE OF UNSPECIFIED TROCHANTERIC SECTION OF FEMUR OPEN
820.31	(ICD9) FRACTURE OF INTERTROCHANTERIC SECTION OF FEMUR OPEN
820.32	(ICD9) FRACTURE OF SUBTROCHANTERIC SECTION OF FEMUR OPEN
820.8	(ICD9) FRACTURE OF UNSPECIFIED PART OF NECK OF FEMUR CLOSED
820.9	(ICD9) FRACTURE OF UNSPECIFIED PART OF NECK OF FEMUR OPEN
M80.051A	(ICD10) Age related osteoporosis with current pathological fracture, right femur, initial encounter for fracture
M80.052A	(ICD10) Age related osteoporosis with current pathological fracture, left femur, initial encounter for fracture
M80.059A	(ICD10) Age related osteoporosis with current pathological fracture, unspecified femur, initial encounter for fracture
M80.851A	(ICD10) Other osteoporosis with current pathological fracture, right femur, initial encounter for fracture
M80.852A	(ICD10) Other osteoporosis with current pathological fracture, left femur, initial encounter for fracture
M80.859A	(ICD10) Other osteoporosis with current pathological fracture, unspecified femur, initial encounter for fracture
M84.359A	(ICD10) Stress fracture, hip, unspecified, initial encounter for fracture

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M84.451A	(ICD10) Pathological fracture, right femur, initial encounter for fracture
M84.452A	(ICD10) Pathological fracture, left femur, initial encounter for fracture
M84.459A	(ICD10) Pathological fracture, hip, unspecified, initial encounter for fracture
M84.551A	(ICD10) Pathological fracture in neoplastic disease, right femur, initial encounter for fracture
M84.552A	(ICD10) Pathological fracture in neoplastic disease, left femur, initial encounter for fracture
M84.553A	(ICD10) Pathological fracture in neoplastic disease, unspecified femur, initial encounter for fracture
M84.559A	(ICD10) Pathological fracture in neoplastic disease, hip, unspecified, initial encounter for fracture
M84.651A	(ICD10) Pathological fracture in other disease, right femur, initial encounter for fracture
M84.652A	(ICD10) Pathological fracture in other disease, left femur, initial encounter for fracture
M84.653A	(ICD10) Pathological fracture in other disease, unspecified femur, initial encounter for fracture
M84.659A	(ICD10) Pathological fracture in other disease, hip, unspecified, initial encounter for fracture
S72.001A	(ICD10) Fracture of unspecified part of neck of right femur, initial encounter for closed fracture
S72.001B	(ICD10) Fracture of unspecified part of neck of right femur, initial encounter for open fracture type I or II
S72.001C	(ICD10) Fracture of unspecified part of neck of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.002A	(ICD10) Fracture of unspecified part of neck of left femur, initial encounter for closed fracture
S72.002B	(ICD10) Fracture of unspecified part of neck of left femur, initial encounter for open fracture type I or II
S72.002C	(ICD10) Fracture of unspecified part of neck of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.009A	(ICD10) Fracture of unspecified part of neck of unspecified femur, initial encounter for closed fracture
S72.009B	(ICD10) Fracture of unspecified part of neck of unspecified femur, initial encounter for open fracture type I or II
S72.009C	(ICD10) Fracture of unspecified part of neck of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.011A	(ICD10) Unspecified intracapsular fracture of right femur, initial encounter for closed fracture
S72.011B	(ICD10) Unspecified intracapsular fracture of right femur, initial encounter for open fracture type I or II
S72.011C	(ICD10) Unspecified intracapsular fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.012A	(ICD10) Unspecified intracapsular fracture of left femur, initial encounter for closed fracture
S72.012B	(ICD10) Unspecified intracapsular fracture of left femur, initial encounter for open fracture type I or II
S72.012C	(ICD10) Unspecified intracapsular fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.019A	(ICD10) Unspecified intracapsular fracture of unspecified femur, initial encounter for closed fracture
S72.019B	(ICD10) Unspecified intracapsular fracture of unspecified femur, initial encounter for open fracture type I or II
S72.019C	(ICD10) Unspecified intracapsular fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.021A	(ICD10) Displaced fracture of epiphysis (separation) (upper) of right femur, initial encounter for closed fracture
S72.021B	(ICD10) Displaced fracture of epiphysis (separation) (upper) of right femur, initial encounter for open fracture type I or II
S72.021C	(ICD10) Displaced fracture of epiphysis (separation) (upper) of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.022A	(ICD10) Displaced fracture of epiphysis (separation) (upper) of left femur, initial encounter for closed fracture

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S72.022B	(ICD10) Displaced fracture of epiphysis (separation) (upper) of left femur, initial encounter for open fracture type I or II
S72.022C	(ICD10) Displaced fracture of epiphysis (separation) (upper) of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.023A	(ICD10) Displaced fracture of epiphysis (separation) (upper) of unspecified femur, initial encounter for closed fracture
S72.023B	(ICD10) Displaced fracture of epiphysis (separation) (upper) of unspecified femur, initial encounter for open fracture type I or II
S72.023C	(ICD10) Displaced fracture of epiphysis (separation) (upper) of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.024A	(ICD10) Nondisplaced fracture of epiphysis (separation) (upper) of right femur, initial encounter for closed fracture
S72.024B	(ICD10) Nondisplaced fracture of epiphysis (separation) (upper) of right femur, initial encounter for open fracture type I or II
S72.024C	(ICD10) Nondisplaced fracture of epiphysis (separation) (upper) of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.025A	(ICD10) Nondisplaced fracture of epiphysis (separation) (upper) of left femur, initial encounter for closed fracture
S72.025B	(ICD10) Nondisplaced fracture of epiphysis (separation) (upper) of left femur, initial encounter for open fracture type I or II
S72.025C	(ICD10) Nondisplaced fracture of epiphysis (separation) (upper) of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.026A	(ICD10) Nondisplaced fracture of epiphysis (separation) (upper) of unspecified femur, initial encounter for closed fracture
S72.026B	(ICD10) Nondisplaced fracture of epiphysis (separation) (upper) of unspecified femur, initial encounter for open fracture type I or II
S72.026C	(ICD10) Nondisplaced fracture of epiphysis (separation) (upper) of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.031A	(ICD10) Displaced midcervical fracture of right femur, initial encounter for closed fracture
S72.031B	(ICD10) Displaced midcervical fracture of right femur, initial encounter for open fracture type I or II
S72.031C	(ICD10) Displaced midcervical fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.032A	(ICD10) Displaced midcervical fracture of left femur, initial encounter for closed fracture
S72.032B	(ICD10) Displaced midcervical fracture of left femur, initial encounter for open fracture type I or II
S72.032C	(ICD10) Displaced midcervical fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.033A	(ICD10) Displaced midcervical fracture of unspecified femur, initial encounter for closed fracture
S72.033B	(ICD10) Displaced midcervical fracture of unspecified femur, initial encounter for open fracture type I or II
S72.033C	(ICD10) Displaced midcervical fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.034A	(ICD10) Nondisplaced midcervical fracture of right femur, initial encounter for closed fracture
S72.034B	(ICD10) Nondisplaced midcervical fracture of right femur, initial encounter for open fracture type I or II
S72.034C	(ICD10) Nondisplaced midcervical fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.035A	(ICD10) Nondisplaced midcervical fracture of left femur, initial encounter for closed fracture
S72.035B	(ICD10) Nondisplaced midcervical fracture of left femur, initial encounter for open fracture type I or II
S72.035C	(ICD10) Nondisplaced midcervical fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.036A	(ICD10) Nondisplaced midcervical fracture of unspecified femur, initial encounter for closed fracture
S72.036B	(ICD10) Nondisplaced midcervical fracture of unspecified femur, initial encounter for open fracture type I or II
S72.036C	(ICD10) Nondisplaced midcervical fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC

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S72.041A	(ICD10) Displaced fracture of base of neck of right femur, initial encounter for closed fracture
S72.041B	(ICD10) Displaced fracture of base of neck of right femur, initial encounter for open fracture type I or II
S72.041C	(ICD10) Displaced fracture of base of neck of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.042A	(ICD10) Displaced fracture of base of neck of left femur, initial encounter for closed fracture
S72.042B	(ICD10) Displaced fracture of base of neck of left femur, initial encounter for open fracture type I or II
S72.042C	(ICD10) Displaced fracture of base of neck of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.043A	(ICD10) Displaced fracture of base of neck of unspecified femur, initial encounter for closed fracture
S72.043B	(ICD10) Displaced fracture of base of neck of unspecified femur, initial encounter for open fracture type I or II
S72.043C	(ICD10) Displaced fracture of base of neck of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.044A	(ICD10) Nondisplaced fracture of base of neck of right femur, initial encounter for closed fracture
S72.044B	(ICD10) Nondisplaced fracture of base of neck of right femur, initial encounter for open fracture type I or II
S72.044C	(ICD10) Nondisplaced fracture of base of neck of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.045A	(ICD10) Nondisplaced fracture of base of neck of left femur, initial encounter for closed fracture
S72.045B	(ICD10) Nondisplaced fracture of base of neck of left femur, initial encounter for open fracture type I or II
S72.045C	(ICD10) Nondisplaced fracture of base of neck of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.046A	(ICD10) Nondisplaced fracture of base of neck of unspecified femur, initial encounter for closed fracture
S72.046B	(ICD10) Nondisplaced fracture of base of neck of unspecified femur, initial encounter for open fracture type I or II
S72.046C	(ICD10) Nondisplaced fracture of base of neck of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.051A	(ICD10) Unspecified fracture of head of right femur, initial encounter for closed fracture
S72.051B	(ICD10) Unspecified fracture of head of right femur, initial encounter for open fracture type I or II
S72.051C	(ICD10) Unspecified fracture of head of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.052A	(ICD10) Unspecified fracture of head of left femur, initial encounter for closed fracture
S72.052B	(ICD10) Unspecified fracture of head of left femur, initial encounter for open fracture type I or II
S72.052C	(ICD10) Unspecified fracture of head of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.059A	(ICD10) Unspecified fracture of head of unspecified femur, initial encounter for closed fracture
S72.059B	(ICD10) Unspecified fracture of head of unspecified femur, initial encounter for open fracture type I or II
S72.059C	(ICD10) Unspecified fracture of head of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.061A	(ICD10) Displaced articular fracture of head of right femur, initial encounter for closed fracture
S72.061B	(ICD10) Displaced articular fracture of head of right femur, initial encounter for open fracture type I or II
S72.061C	(ICD10) Displaced articular fracture of head of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.062A	(ICD10) Displaced articular fracture of head of left femur, initial encounter for closed fracture
S72.062B	(ICD10) Displaced articular fracture of head of left femur, initial encounter for open fracture type I or II
S72.062C	(ICD10) Displaced articular fracture of head of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC

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S72.063A	(ICD10) Displaced articular fracture of head of unspecified femur, initial encounter for closed fracture
S72.063B	(ICD10) Displaced articular fracture of head of unspecified femur, initial encounter for open fracture type I or II
S72.063C	(ICD10) Displaced articular fracture of head of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.064A	(ICD10) Nondisplaced articular fracture of head of right femur, initial encounter for closed fracture
S72.064B	(ICD10) Nondisplaced articular fracture of head of right femur, initial encounter for open fracture type I or II
S72.064C	(ICD10) Nondisplaced articular fracture of head of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.065A	(ICD10) Nondisplaced articular fracture of head of left femur, initial encounter for closed fracture
S72.065B	(ICD10) Nondisplaced articular fracture of head of left femur, initial encounter for open fracture type I or II
S72.065C	(ICD10) Nondisplaced articular fracture of head of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.066A	(ICD10) Nondisplaced articular fracture of head of unspecified femur, initial encounter for closed fracture
S72.066B	(ICD10) Nondisplaced articular fracture of head of unspecified femur, initial encounter for open fracture type I or II
S72.066C	(ICD10) Nondisplaced articular fracture of head of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.091A	(ICD10) Other fracture of head and neck of right femur, initial encounter for closed fracture
S72.091B	(ICD10) Other fracture of head and neck of right femur, initial encounter for open fracture type I or II
S72.091C	(ICD10) Other fracture of head and neck of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.092A	(ICD10) Other fracture of head and neck of left femur, initial encounter for closed fracture
S72.092B	(ICD10) Other fracture of head and neck of left femur, initial encounter for open fracture type I or II
S72.092C	(ICD10) Other fracture of head and neck of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.099A	(ICD10) Other fracture of head and neck of unspecified femur, initial encounter for closed fracture
S72.099B	(ICD10) Other fracture of head and neck of unspecified femur, initial encounter for open fracture type I or II
S72.099C	(ICD10) Other fracture of head and neck of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.101A	(ICD10) Unspecified trochanteric fracture of right femur, initial encounter for closed fracture
S72.101B	(ICD10) Unspecified trochanteric fracture of right femur, initial encounter for open fracture type I or II
S72.101C	(ICD10) Unspecified trochanteric fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.102A	(ICD10) Unspecified trochanteric fracture of left femur, initial encounter for closed fracture
S72.102B	(ICD10) Unspecified trochanteric fracture of left femur, initial encounter for open fracture type I or II
S72.102C	(ICD10) Unspecified trochanteric fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.109A	(ICD10) Unspecified trochanteric fracture of unspecified femur, initial encounter for closed fracture
S72.109B	(ICD10) Unspecified trochanteric fracture of unspecified femur, initial encounter for open fracture type I or II
S72.109C	(ICD10) Unspecified trochanteric fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.111A	(ICD10) Displaced fracture of greater trochanter of right femur, initial encounter for closed fracture
S72.111B	(ICD10) Displaced fracture of greater trochanter of right femur, initial encounter for open fracture type I or II
S72.111C	(ICD10) Displaced fracture of greater trochanter of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC

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S72.112A	(ICD10) Displaced fracture of greater trochanter of left femur, initial encounter for closed fracture
S72.112B	(ICD10) Displaced fracture of greater trochanter of left femur, initial encounter for open fracture type I or II
S72.112C	(ICD10) Displaced fracture of greater trochanter of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.113A	(ICD10) Displaced fracture of greater trochanter of unspecified femur, initial encounter for closed fracture
S72.113B	(ICD10) Displaced fracture of greater trochanter of unspecified femur, initial encounter for open fracture type I or II
S72.113C	(ICD10) Displaced fracture of greater trochanter of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.114A	(ICD10) Nondisplaced fracture of greater trochanter of right femur, initial encounter for closed fracture
S72.114B	(ICD10) Nondisplaced fracture of greater trochanter of right femur, initial encounter for open fracture type I or II
S72.114C	(ICD10) Nondisplaced fracture of greater trochanter of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.115A	(ICD10) Nondisplaced fracture of greater trochanter of left femur, initial encounter for closed fracture
S72.115B	(ICD10) Nondisplaced fracture of greater trochanter of left femur, initial encounter for open fracture type I or II
S72.115C	(ICD10) Nondisplaced fracture of greater trochanter of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.116A	(ICD10) Nondisplaced fracture of greater trochanter of unspecified femur, initial encounter for closed fracture
S72.116B	(ICD10) Nondisplaced fracture of greater trochanter of unspecified femur, initial encounter for open fracture type I or II
S72.116C	(ICD10) Nondisplaced fracture of greater trochanter of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.121A	(ICD10) Displaced fracture of lesser trochanter of right femur, initial encounter for closed fracture
S72.121B	(ICD10) Displaced fracture of lesser trochanter of right femur, initial encounter for open fracture type I or II
S72.121C	(ICD10) Displaced fracture of lesser trochanter of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.122A	(ICD10) Displaced fracture of lesser trochanter of left femur, initial encounter for closed fracture
S72.122B	(ICD10) Displaced fracture of lesser trochanter of left femur, initial encounter for open fracture type I or II
S72.122C	(ICD10) Displaced fracture of lesser trochanter of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.123A	(ICD10) Displaced fracture of lesser trochanter of unspecified femur, initial encounter for closed fracture
S72.123B	(ICD10) Displaced fracture of lesser trochanter of unspecified femur, initial encounter for open fracture type I or II
S72.123C	(ICD10) Displaced fracture of lesser trochanter of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.124A	(ICD10) Nondisplaced fracture of lesser trochanter of right femur, initial encounter for closed fracture
S72.124B	(ICD10) Nondisplaced fracture of lesser trochanter of right femur, initial encounter for open fracture type I or II
S72.124C	(ICD10) Nondisplaced fracture of lesser trochanter of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.125A	(ICD10) Nondisplaced fracture of lesser trochanter of left femur, initial encounter for closed fracture
S72.125B	(ICD10) Nondisplaced fracture of lesser trochanter of left femur, initial encounter for open fracture type I or II
S72.125C	(ICD10) Nondisplaced fracture of lesser trochanter of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.126A	(ICD10) Nondisplaced fracture of lesser trochanter of unspecified femur, initial encounter for closed fracture
S72.126B	(ICD10) Nondisplaced fracture of lesser trochanter of unspecified femur, initial encounter for open fracture type I or II
S72.126C	(ICD10) Nondisplaced fracture of lesser trochanter of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC



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S72.131A	(ICD10) Displaced apophyseal fracture of right femur, initial encounter for closed fracture
S72.131B	(ICD10) Displaced apophyseal fracture of right femur, initial encounter for open fracture type I or II
S72.131C	(ICD10) Displaced apophyseal fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.132A	(ICD10) Displaced apophyseal fracture of left femur, initial encounter for closed fracture
S72.132B	(ICD10) Displaced apophyseal fracture of left femur, initial encounter for open fracture type I or II
S72.132C	(ICD10) Displaced apophyseal fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.133A	(ICD10) Displaced apophyseal fracture of unspecified femur, initial encounter for closed fracture
S72.133B	(ICD10) Displaced apophyseal fracture of unspecified femur, initial encounter for open fracture type I or II
S72.133C	(ICD10) Displaced apophyseal fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.134A	(ICD10) Nondisplaced apophyseal fracture of right femur, initial encounter for closed fracture
S72.134B	(ICD10) Nondisplaced apophyseal fracture of right femur, initial encounter for open fracture type I or II
S72.134C	(ICD10) Nondisplaced apophyseal fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.135A	(ICD10) Nondisplaced apophyseal fracture of left femur, initial encounter for closed fracture
S72.135B	(ICD10) Nondisplaced apophyseal fracture of left femur, initial encounter for open fracture type I or II
S72.135C	(ICD10) Nondisplaced apophyseal fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.136A	(ICD10) Nondisplaced apophyseal fracture of unspecified femur, initial encounter for closed fracture
S72.136B	(ICD10) Nondisplaced apophyseal fracture of unspecified femur, initial encounter for open fracture type I or II
S72.136C	(ICD10) Nondisplaced apophyseal fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.141A	(ICD10) Displaced intertrochanteric fracture of right femur, initial encounter for closed fracture
S72.141B	(ICD10) Displaced intertrochanteric fracture of right femur, initial encounter for open fracture type I or II
S72.141C	(ICD10) Displaced intertrochanteric fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.142A	(ICD10) Displaced intertrochanteric fracture of left femur, initial encounter for closed fracture
S72.142B	(ICD10) Displaced intertrochanteric fracture of left femur, initial encounter for open fracture type I or II
S72.142C	(ICD10) Displaced intertrochanteric fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.143A	(ICD10) Displaced intertrochanteric fracture of unspecified femur, initial encounter for closed fracture
S72.143B	(ICD10) Displaced intertrochanteric fracture of unspecified femur, initial encounter for open fracture type I or II
S72.143C	(ICD10) Displaced intertrochanteric fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.144A	(ICD10) Nondisplaced intertrochanteric fracture of right femur, initial encounter for closed fracture
S72.144B	(ICD10) Nondisplaced intertrochanteric fracture of right femur, initial encounter for open fracture type I or II
S72.144C	(ICD10) Nondisplaced intertrochanteric fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.145A	(ICD10) Nondisplaced intertrochanteric fracture of left femur, initial encounter for closed fracture
S72.145B	(ICD10) Nondisplaced intertrochanteric fracture of left femur, initial encounter for open fracture type I or II
S72.145C	(ICD10) Nondisplaced intertrochanteric fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC

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S72.146A	(ICD10) Nondisplaced intertrochanteric fracture of unspecified femur, initial encounter for closed fracture
S72.146B	(ICD10) Nondisplaced intertrochanteric fracture of unspecified femur, initial encounter for open fracture type I or II
S72.146C	(ICD10) Nondisplaced intertrochanteric fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.21XA	(ICD10) Displaced subtrochanteric fracture of right femur, initial encounter for closed fracture
S72.21XB	(ICD10) Displaced subtrochanteric fracture of right femur, initial encounter for open fracture type I or II
S72.21XC	(ICD10) Displaced subtrochanteric fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.22XA	(ICD10) Displaced subtrochanteric fracture of left femur, initial encounter for closed fracture
S72.22XB	(ICD10) Displaced subtrochanteric fracture of left femur, initial encounter for open fracture type I or II
S72.22XC	(ICD10) Displaced subtrochanteric fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.23XA	(ICD10) Displaced subtrochanteric fracture of unspecified femur, initial encounter for closed fracture
S72.23XB	(ICD10) Displaced subtrochanteric fracture of unspecified femur, initial encounter for open fracture type I or II
S72.23XC	(ICD10) Displaced subtrochanteric fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.24XA	(ICD10) Nondisplaced subtrochanteric fracture of right femur, initial encounter for closed fracture
S72.24XB	(ICD10) Nondisplaced subtrochanteric fracture of right femur, initial encounter for open fracture type I or II
S72.24XC	(ICD10) Nondisplaced subtrochanteric fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.25XA	(ICD10) Nondisplaced subtrochanteric fracture of left femur, initial encounter for closed fracture
S72.25XB	(ICD10) Nondisplaced subtrochanteric fracture of left femur, initial encounter for open fracture type I or II
S72.25XC	(ICD10) Nondisplaced subtrochanteric fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.26XA	(ICD10) Nondisplaced subtrochanteric fracture of unspecified femur, initial encounter for closed fracture
S72.26XB	(ICD10) Nondisplaced subtrochanteric fracture of unspecified femur, initial encounter for open fracture type I or II
S72.26XC	(ICD10) Nondisplaced subtrochanteric fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S79.001A	(ICD10) Unspecified physeal fracture of upper end of right femur, initial encounter for closed fracture
S79.002A	(ICD10) Unspecified physeal fracture of upper end of left femur, initial encounter for closed fracture
S79.009A	(ICD10) Unspecified physeal fracture of upper end of unspecified femur, initial encounter for closed fracture
S79.011A	(ICD10) Salter Harris Type I physeal fracture of upper end of right femur, initial encounter for closed fracture
S79.012A	(ICD10) Salter Harris Type I physeal fracture of upper end of left femur, initial encounter for closed fracture
S79.019A	(ICD10) Salter Harris Type I physeal fracture of upper end of unspecified femur, initial encounter for closed fracture
S79.091A	(ICD10) Other physeal fracture of upper end of right femur, initial encounter for closed fracture
S79.092A	(ICD10) Other physeal fracture of upper end of left femur, initial encounter for closed fracture
S79.099A	(ICD10) Other physeal fracture of upper end of unspecified femur, initial encounter for closed fracture
Procedure	
78.55	(ICD9) INTERNAL FIXATION OF BONE WITHOUT FRACTURE REDUCTION, FEMUR
79.05	(ICD9) CLOSED REDUCTION OF FRACTURE WITHOUT INTERNAL FIXATION, FEMUR

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79.15	(ICD9) CLOSED REDUCTION OF FRACTURE WITH INTERNAL FIXATION, FEMUR
79.25	(ICD9) OPEN REDUCTION OF FRACTURE WITHOUT INTERNAL FIXATION, FEMUR
79.35	(ICD9) OPEN REDUCTION OF FRACTURE WITH INTERNAL FIXATION, FEMUR
79.65	(ICD9) DEBRIDEMENT OF OPEN FRACTURE SITE, FEMUR
27125	(HCPCS) Hemiarthroplasty, hip, partial (eg, femoral stem prosthesis, bipolar arthroplasty)
27130	(HCPCS) Arthroplasty, acetabular and proximal femoral prosthetic replacement (total hip arthroplasty), with or without autograft or allograft
27230	(HCPCS) Closed treatment of femoral fracture, proximal end, neck; without manipulation
27232	(HCPCS) Closed treatment of femoral fracture, proximal end, neck; with manipulation, with or without skeletal traction
27235	(HCPCS) Percutaneous skeletal fixation of femoral fracture, proximal end, neck
27236	(HCPCS) Open treatment of femoral fracture, proximal end, neck, internal fixation or prosthetic replacement
27238	(HCPCS) Closed treatment of intertrochanteric, peritrochanteric, or subtrochanteric femoral fracture; without manipulation
27240	(HCPCS) Closed treatment of intertrochanteric, peritrochanteric, or subtrochanteric femoral fracture; with manipulation, with or without skin
27244	(HCPCS) Open treatment of intertrochanteric, peritrochanteric, or subtrochanteric femoral fracture; with plate
27245	(HCPCS) Open treatment of intertrochanteric, peritrochanteric, or subtrochanteric femoral fracture; with intramedullary implant
27246	(HCPCS) Closed treatment of greater trochanteric fracture, without manipulation
27248	(HCPCS) Open treatment of greater trochanteric fracture, includes internal fixation, when performed
27267	(HCPCS) Closed treatment of femoral fracture, proximal end, head; without manipulation
27268	(HCPCS) Closed treatment of femoral fracture, proximal end, head; with manipulation
27269	(HCPCS) Open treatment of femoral fracture, proximal end, head, includes internal fixation, when performed
<b>Pelvis Fracture</b>	
Diagnosis	
733.98	(ICD9) STRESS FRACTURE OF PELVIS
808	(ICD9) CLOSED FRACTURE OF ACETABULUM
808.1	(ICD9) OPEN FRACTURE OF ACETABULUM
808.2	(ICD9) CLOSED FRACTURE OF PUBIS
808.3	(ICD9) OPEN FRACTURE OF PUBIS
808.4	(ICD9) CLOSED FRACTURE OF OTHER SPECIFIED PART OF PELVIS
808.41	(ICD9) CLOSED FRACTURE OF ILIUM
808.42	(ICD9) CLOSED FRACTURE OF ISCHIUM
808.43	(ICD9) MULTIPLE CLOSED PELVIC FRACTURES WITH DISRUPTION OF PELVIC CIRCLE
808.44	(ICD9) MULTIPLE CLOSED PELVIC FRACTURES WITHOUT DISRUPTION OF PELVIC CIRCLE

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808.49	(ICD9) CLOSED FRACTURE OF OTHER SPECIFIED PART OF PELVIS
808.5	(ICD9) OPEN FRACTURE OF OTHER SPECIFIED PART OF PELVIS
808.51	(ICD9) OPEN FRACTURE OF ILIUM
808.52	(ICD9) OPEN FRACTURE OF ISCHIUM
808.53	(ICD9) MULTIPLE OPEN PELVIC FRACTURES WITH DISRUPTION OF PELVIC CIRCLE
808.54	(ICD9) MULTIPLE OPEN PELVIC FRACTURES WITHOUT DISRUPTION OF PELVIC CIRCLE
808.59	(ICD9) OPEN FRACTURE OF OTHER SPECIFIED PART OF PELVIS
808.8	(ICD9) UNSPECIFIED CLOSED FRACTURE OF PELVIS
808.9	(ICD9) UNSPECIFIED OPEN FRACTURE OF PELVIS
Procedure	
27193	(HCPCS) Closed treatment of pelvic ring fracture, dislocation, diastasis or subluxation; without manipulation
27194	(HCPCS) Closed treatment of pelvic ring fracture, dislocation, diastasis or subluxation; with manipulation, requiring more than local anesthesia
27200	(HCPCS) Closed treatment of coccygeal fracture
27202	(HCPCS) Open treatment of coccygeal fracture
27215	(HCPCS) Open treatment of iliac spine(s), tuberosity avulsion, or iliac wing fracture(s) (eg, pelvic fracture(s) which do not disrupt the pelvic ring)
27216	(HCPCS) Percutaneous skeletal fixation of posterior pelvic bone fracture and/or dislocation, for fracture patterns that disrupt the pelvic ring
27217	(HCPCS) Open treatment of anterior pelvic bone fracture and/or dislocation for fracture patterns that disrupt the pelvic ring, unilateral
27218	(HCPCS) Open treatment of posterior pelvic bone fracture and/or dislocation, for fracture patterns that disrupt the pelvic ring, unilateral
27220	(HCPCS) Closed treatment of acetabulum (hip socket) fracture(s); without manipulation
27222	(HCPCS) Closed treatment of acetabulum (hip socket) fracture(s); with manipulation, with or without skeletal traction
27226	(HCPCS) Open treatment of posterior or anterior acetabular wall fracture, with internal fixation
27227	(HCPCS) Open treatment of acetabular fracture(s) involving anterior or posterior column, or a fracture running transversely across acetabulum
27228	(HCPCS) Open treatment of acetabular fracture(s) involving anterior and posterior (two) columns, includes T
Femur Fracture	
Diagnosis	
821	(ICD9) FRACTURE OF SHAFT OR UNSPECIFIED PART OF FEMUR CLOSED
821	(ICD9) FRACTURE OF UNSPECIFIED PART OF FEMUR CLOSED

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821.01	(ICD9) FRACTURE OF SHAFT OF FEMUR CLOSED
821.1	(ICD9) FRACTURE OF SHAFT OR UNSPECIFIED PART OF FEMUR OPEN
821.1	(ICD9) FRACTURE OF UNSPECIFIED PART OF FEMUR OPEN
821.2	(ICD9) FRACTURE OF LOWER END OF FEMUR CLOSED
821.2	(ICD9) FRACTURE OF LOWER END OF FEMUR UNSPECIFIED PART CLOSED
821.22	(ICD9) FRACTURE OF LOWER EPIPHYSIS OF FEMUR CLOSED
821.29	(ICD9) OTHER FRACTURE OF LOWER END OF FEMUR CLOSED
821.3	(ICD9) FRACTURE OF LOWER END OF FEMUR UNSPECIFIED PART OPEN
821.32	(ICD9) FRACTURE OF LOWER EPIPHYSIS OF FEMUR OPEN
821.39	(ICD9) OTHER FRACTURE OF LOWER END OF FEMUR OPEN
821.11	(ICD9) FRACTURE OF SHAFT OF FEMUR OPEN
821.21	(ICD9) FRACTURE OF FEMORAL CONDYLE CLOSED
821.23	(ICD9) SUPRACONDYLAR FRACTURE OF FEMUR CLOSED
821.3	(ICD9) FRACTURE OF LOWER END OF FEMUR OPEN
821.31	(ICD9) FRACTURE OF FEMORAL CONDYLE OPEN
821.33	(ICD9) SUPRACONDYLAR FRACTURE OF FEMUR OPEN
S72.302A	(ICD10) Unspecified fracture of shaft of left femur, initial encounter for closed fracture
S72.302C	(ICD10) Unspecified fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.309A	(ICD10) Unspecified fracture of shaft of unspecified femur, initial encounter for closed fracture
S72.309B	(ICD10) Unspecified fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
S72.309C	(ICD10) Unspecified fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.321A	(ICD10) Displaced transverse fracture of shaft of right femur, initial encounter for closed fracture
S72.322A	(ICD10) Displaced transverse fracture of shaft of left femur, initial encounter for closed fracture
S72.323C	(ICD10) Displaced transverse fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.324A	(ICD10) Nondisplaced transverse fracture of shaft of right femur, initial encounter for closed fracture
S72.324B	(ICD10) Nondisplaced transverse fracture of shaft of right femur, initial encounter for open fracture type I or II
S72.324C	(ICD10) Nondisplaced transverse fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.325A	(ICD10) Nondisplaced transverse fracture of shaft of left femur, initial encounter for closed fracture
S72.325B	(ICD10) Nondisplaced transverse fracture of shaft of left femur, initial encounter for open fracture type I or II
S72.326A	(ICD10) Nondisplaced transverse fracture of shaft of unspecified femur, initial encounter for closed fracture
S72.326B	(ICD10) Nondisplaced transverse fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
S72.326C	(ICD10) Nondisplaced transverse fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.331A	(ICD10) Displaced oblique fracture of shaft of right femur, initial encounter for closed fracture

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S72.331B	(ICD10) Displaced oblique fracture of shaft of right femur, initial encounter for open fracture type I or II
S72.332A	(ICD10) Displaced oblique fracture of shaft of left femur, initial encounter for closed fracture
S72.332B	(ICD10) Displaced oblique fracture of shaft of left femur, initial encounter for open fracture type I or II
S72.334B	(ICD10) Nondisplaced oblique fracture of shaft of right femur, initial encounter for open fracture type I or II
S72.335B	(ICD10) Nondisplaced oblique fracture of shaft of left femur, initial encounter for open fracture type I or II
S72.335C	(ICD10) Nondisplaced oblique fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.336A	(ICD10) Nondisplaced oblique fracture of shaft of unspecified femur, initial encounter for closed fracture
S72.341A	(ICD10) Displaced spiral fracture of shaft of right femur, initial encounter for closed fracture
S72.342A	(ICD10) Displaced spiral fracture of shaft of left femur, initial encounter for closed fracture
S72.342C	(ICD10) Displaced spiral fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.343C	(ICD10) Displaced spiral fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.344A	(ICD10) Nondisplaced spiral fracture of shaft of right femur, initial encounter for closed fracture
S72.344C	(ICD10) Nondisplaced spiral fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.345A	(ICD10) Nondisplaced spiral fracture of shaft of left femur, initial encounter for closed fracture
S72.345B	(ICD10) Nondisplaced spiral fracture of shaft of left femur, initial encounter for open fracture type I or II
S72.345C	(ICD10) Nondisplaced spiral fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.346B	(ICD10) Nondisplaced spiral fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
S72.346C	(ICD10) Nondisplaced spiral fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.352B	(ICD10) Displaced comminuted fracture of shaft of left femur, initial encounter for open fracture type I or II
S72.354B	(ICD10) Nondisplaced comminuted fracture of shaft of right femur, initial encounter for open fracture type I or II
S72.354C	(ICD10) Nondisplaced comminuted fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.355A	(ICD10) Nondisplaced comminuted fracture of shaft of left femur, initial encounter for closed fracture
S72.355B	(ICD10) Nondisplaced comminuted fracture of shaft of left femur, initial encounter for open fracture type I or II
S72.355C	(ICD10) Nondisplaced comminuted fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.356C	(ICD10) Nondisplaced comminuted fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.361A	(ICD10) Displaced segmental fracture of shaft of right femur, initial encounter for closed fracture
S72.361C	(ICD10) Displaced segmental fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.362A	(ICD10) Displaced segmental fracture of shaft of left femur, initial encounter for closed fracture
S72.362B	(ICD10) Displaced segmental fracture of shaft of left femur, initial encounter for open fracture type I or II
S72.362C	(ICD10) Displaced segmental fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.364B	(ICD10) Nondisplaced segmental fracture of shaft of right femur, initial encounter for open fracture type I or II
S72.364C	(ICD10) Nondisplaced segmental fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.365A	(ICD10) Nondisplaced segmental fracture of shaft of left femur, initial encounter for closed fracture

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S72.365C	(ICD10) Nondisplaced segmental fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.366A	(ICD10) Nondisplaced segmental fracture of shaft of unspecified femur, initial encounter for closed fracture
S72.366B	(ICD10) Nondisplaced segmental fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
S72.391A	(ICD10) Other fracture of shaft of right femur, initial encounter for closed fracture
S72.391B	(ICD10) Other fracture of shaft of right femur, initial encounter for open fracture type I or II
S72.391C	(ICD10) Other fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.392B	(ICD10) Other fracture of shaft of left femur, initial encounter for open fracture type I or II
S72.399A	(ICD10) Other fracture of shaft of unspecified femur, initial encounter for closed fracture
S72.401B	(ICD10) Unspecified fracture of lower end of right femur, initial encounter for open fracture type I or II
S72.402A	(ICD10) Unspecified fracture of lower end of left femur, initial encounter for closed fracture
S72.409A	(ICD10) Unspecified fracture of lower end of unspecified femur, initial encounter for closed fracture
S72.409C	(ICD10) Unspecified fracture of lower end of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.411A	(ICD10) Displaced unspecified condyle fracture of lower end of right femur, initial encounter for closed fracture
S72.411B	(ICD10) Displaced unspecified condyle fracture of lower end of right femur, initial encounter for open fracture type I or II
S72.412A	(ICD10) Displaced unspecified condyle fracture of lower end of left femur, initial encounter for closed fracture
S72.412B	(ICD10) Displaced unspecified condyle fracture of lower end of left femur, initial encounter for open fracture type I or II
S72.413A	(ICD10) Displaced unspecified condyle fracture of lower end of unspecified femur, initial encounter for closed fracture
S72.414A	(ICD10) Nondisplaced unspecified condyle fracture of lower end of right femur, initial encounter for closed fracture
S72.414B	(ICD10) Nondisplaced unspecified condyle fracture of lower end of right femur, initial encounter for open fracture type I or II
S72.414C	(ICD10) Nondisplaced unspecified condyle fracture of lower end of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.415C	(ICD10) Nondisplaced unspecified condyle fracture of lower end of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.416A	(ICD10) Nondisplaced unspecified condyle fracture of lower end of unspecified femur, initial encounter for closed fracture
S72.416B	(ICD10) Nondisplaced unspecified condyle fracture of lower end of unspecified femur, initial encounter for open fracture type I or II
S72.421A	(ICD10) Displaced fracture of lateral condyle of right femur, initial encounter for closed fracture
S72.421B	(ICD10) Displaced fracture of lateral condyle of right femur, initial encounter for open fracture type I or II
S72.422A	(ICD10) Displaced fracture of lateral condyle of left femur, initial encounter for closed fracture
S72.422B	(ICD10) Displaced fracture of lateral condyle of left femur, initial encounter for open fracture type I or II
S72.423A	(ICD10) Displaced fracture of lateral condyle of unspecified femur, initial encounter for closed fracture
S72.423B	(ICD10) Displaced fracture of lateral condyle of unspecified femur, initial encounter for open fracture type I or II
S72.424A	(ICD10) Nondisplaced fracture of lateral condyle of right femur, initial encounter for closed fracture
S72.424B	(ICD10) Nondisplaced fracture of lateral condyle of right femur, initial encounter for open fracture type I or II
S72.424C	(ICD10) Nondisplaced fracture of lateral condyle of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC

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S72.425A	(ICD10) Nondisplaced fracture of lateral condyle of left femur, initial encounter for closed fracture
S72.425C	(ICD10) Nondisplaced fracture of lateral condyle of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.426A	(ICD10) Nondisplaced fracture of lateral condyle of unspecified femur, initial encounter for closed fracture
S72.426C	(ICD10) Nondisplaced fracture of lateral condyle of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.432A	(ICD10) Displaced fracture of medial condyle of left femur, initial encounter for closed fracture
S72.432B	(ICD10) Displaced fracture of medial condyle of left femur, initial encounter for open fracture type I or II
S72.432C	(ICD10) Displaced fracture of medial condyle of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.433A	(ICD10) Displaced fracture of medial condyle of unspecified femur, initial encounter for closed fracture
S72.433C	(ICD10) Displaced fracture of medial condyle of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.434A	(ICD10) Nondisplaced fracture of medial condyle of right femur, initial encounter for closed fracture
S72.434C	(ICD10) Nondisplaced fracture of medial condyle of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.435A	(ICD10) Nondisplaced fracture of medial condyle of left femur, initial encounter for closed fracture
S72.435C	(ICD10) Nondisplaced fracture of medial condyle of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.436A	(ICD10) Nondisplaced fracture of medial condyle of unspecified femur, initial encounter for closed fracture
S72.441A	(ICD10) Displaced fracture of lower epiphysis (separation) of right femur, initial encounter for closed fracture
S72.441B	(ICD10) Displaced fracture of lower epiphysis (separation) of right femur, initial encounter for open fracture type I or II
S72.442B	(ICD10) Displaced fracture of lower epiphysis (separation) of left femur, initial encounter for open fracture type I or II
S72.443A	(ICD10) Displaced fracture of lower epiphysis (separation) of unspecified femur, initial encounter for closed fracture
S72.444B	(ICD10) Nondisplaced fracture of lower epiphysis (separation) of right femur, initial encounter for open fracture type I or II
S72.444C	(ICD10) Nondisplaced fracture of lower epiphysis (separation) of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.445A	(ICD10) Nondisplaced fracture of lower epiphysis (separation) of left femur, initial encounter for closed fracture
S72.445C	(ICD10) Nondisplaced fracture of lower epiphysis (separation) of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.446A	(ICD10) Nondisplaced fracture of lower epiphysis (separation) of unspecified femur, initial encounter for closed fracture
S72.451A	(ICD10) Displaced supracondylar fracture without intracondylar extension of lower end of right femur, initial encounter for closed fracture
S72.451B	(ICD10) Displaced supracondylar fracture without intracondylar extension of lower end of right femur, initial encounter for open fracture type I or II
S72.453A	(ICD10) Displaced supracondylar fracture without intracondylar extension of lower end of unspecified femur, initial encounter for closed fracture
S72.453B	(ICD10) Displaced supracondylar fracture without intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type I or II
S72.453C	(ICD10) Displaced supracondylar fracture without intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC



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S72.454A	(ICD10) Nondisplaced supracondylar fracture without intracondylar extension of lower end of right femur, initial encounter for closed fracture
S72.454C	(ICD10) Nondisplaced supracondylar fracture without intracondylar extension of lower end of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.455A	(ICD10) Nondisplaced supracondylar fracture without intracondylar extension of lower end of left femur, initial encounter for closed fracture
S72.455B	(ICD10) Nondisplaced supracondylar fracture without intracondylar extension of lower end of left femur, initial encounter for open fracture type I or II
S72.455C	(ICD10) Nondisplaced supracondylar fracture without intracondylar extension of lower end of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.456A	(ICD10) Nondisplaced supracondylar fracture without intracondylar extension of lower end of unspecified femur, initial encounter for closed fracture
S72.456B	(ICD10) Nondisplaced supracondylar fracture without intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type I or II
S72.462B	(ICD10) Displaced supracondylar fracture with intracondylar extension of lower end of left femur, initial encounter for open fracture type I or II
S72.462C	(ICD10) Displaced supracondylar fracture with intracondylar extension of lower end of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.463C	(ICD10) Displaced supracondylar fracture with intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.464B	(ICD10) Nondisplaced supracondylar fracture with intracondylar extension of lower end of right femur, initial encounter for open fracture type I or II
S72.465A	(ICD10) Nondisplaced supracondylar fracture with intracondylar extension of lower end of left femur, initial encounter for closed fracture
S72.465C	(ICD10) Nondisplaced supracondylar fracture with intracondylar extension of lower end of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.466A	(ICD10) Nondisplaced supracondylar fracture with intracondylar extension of lower end of unspecified femur, initial encounter for closed fracture
S72.466C	(ICD10) Nondisplaced supracondylar fracture with intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.472A	(ICD10) Torus fracture of lower end of left femur, initial encounter for closed fracture
S72.479A	(ICD10) Torus fracture of lower end of unspecified femur, initial encounter for closed fracture
S72.499A	(ICD10) Other fracture of lower end of unspecified femur, initial encounter for closed fracture

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S72.499B	(ICD10) Other fracture of lower end of unspecified femur, initial encounter for open fracture type I or II
S72.8X1A	(ICD10) Other fracture of right femur, initial encounter for closed fracture
S72.8X1C	(ICD10) Other fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.8X9A	(ICD10) Other fracture of unspecified femur, initial encounter for closed fracture
S72.8X9B	(ICD10) Other fracture of unspecified femur, initial encounter for open fracture type I or II
S72.90XB	(ICD10) Unspecified fracture of unspecified femur, initial encounter for open fracture type I or II
S72.90XC	(ICD10) Unspecified fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.91XC	(ICD10) Unspecified fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.92XB	(ICD10) Unspecified fracture of left femur, initial encounter for open fracture type I or II
S72.92XC	(ICD10) Unspecified fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S79.101A	(ICD10) Unspecified physeal fracture of lower end of right femur, initial encounter for closed fracture
S79.111A	(ICD10) Salter Harris Type I physeal fracture of lower end of right femur, initial encounter for closed fracture
S79.119A	(ICD10) Salter Harris Type I physeal fracture of lower end of unspecified femur, initial encounter for closed fracture
S79.122A	(ICD10) Salter Harris Type II physeal fracture of lower end of left femur, initial encounter for closed fracture
S79.129A	(ICD10) Salter Harris Type II physeal fracture of lower end of unspecified femur, initial encounter for closed fracture
S79.132A	(ICD10) Salter Harris Type III physeal fracture of lower end of left femur, initial encounter for closed fracture
S79.141A	(ICD10) Salter Harris Type IV physeal fracture of lower end of right femur, initial encounter for closed fracture
S79.149A	(ICD10) Salter Harris Type IV physeal fracture of lower end of unspecified femur, initial encounter for closed fracture
S79.191A	(ICD10) Other physeal fracture of lower end of right femur, initial encounter for closed fracture
S72.301A	(ICD10) Unspecified fracture of shaft of right femur, initial encounter for closed fracture
S72.301B	(ICD10) Unspecified fracture of shaft of right femur, initial encounter for open fracture type I or II
S72.301C	(ICD10) Unspecified fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.302B	(ICD10) Unspecified fracture of shaft of left femur, initial encounter for open fracture type I or II
S72.321B	(ICD10) Displaced transverse fracture of shaft of right femur, initial encounter for open fracture type I or II
S72.321C	(ICD10) Displaced transverse fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.322B	(ICD10) Displaced transverse fracture of shaft of left femur, initial encounter for open fracture type I or II
S72.322C	(ICD10) Displaced transverse fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.323A	(ICD10) Displaced transverse fracture of shaft of unspecified femur, initial encounter for closed fracture
S72.323B	(ICD10) Displaced transverse fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
S72.325C	(ICD10) Nondisplaced transverse fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.331C	(ICD10) Displaced oblique fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.332C	(ICD10) Displaced oblique fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.333A	(ICD10) Displaced oblique fracture of shaft of unspecified femur, initial encounter for closed fracture

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S72.333B	(ICD10) Displaced oblique fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
S72.333C	(ICD10) Displaced oblique fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.334A	(ICD10) Nondisplaced oblique fracture of shaft of right femur, initial encounter for closed fracture
S72.334C	(ICD10) Nondisplaced oblique fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.335A	(ICD10) Nondisplaced oblique fracture of shaft of left femur, initial encounter for closed fracture
S72.336B	(ICD10) Nondisplaced oblique fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
S72.336C	(ICD10) Nondisplaced oblique fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.341B	(ICD10) Displaced spiral fracture of shaft of right femur, initial encounter for open fracture type I or II
S72.341C	(ICD10) Displaced spiral fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.342B	(ICD10) Displaced spiral fracture of shaft of left femur, initial encounter for open fracture type I or II
S72.343A	(ICD10) Displaced spiral fracture of shaft of unspecified femur, initial encounter for closed fracture
S72.343B	(ICD10) Displaced spiral fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
S72.344B	(ICD10) Nondisplaced spiral fracture of shaft of right femur, initial encounter for open fracture type I or II
S72.346A	(ICD10) Nondisplaced spiral fracture of shaft of unspecified femur, initial encounter for closed fracture
S72.351A	(ICD10) Displaced comminuted fracture of shaft of right femur, initial encounter for closed fracture
S72.351B	(ICD10) Displaced comminuted fracture of shaft of right femur, initial encounter for open fracture type I or II
S72.351C	(ICD10) Displaced comminuted fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.352A	(ICD10) Displaced comminuted fracture of shaft of left femur, initial encounter for closed fracture
S72.352C	(ICD10) Displaced comminuted fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.353A	(ICD10) Displaced comminuted fracture of shaft of unspecified femur, initial encounter for closed fracture
S72.353B	(ICD10) Displaced comminuted fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
S72.353C	(ICD10) Displaced comminuted fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.354A	(ICD10) Nondisplaced comminuted fracture of shaft of right femur, initial encounter for closed fracture
S72.356A	(ICD10) Nondisplaced comminuted fracture of shaft of unspecified femur, initial encounter for closed fracture
S72.356B	(ICD10) Nondisplaced comminuted fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
S72.361B	(ICD10) Displaced segmental fracture of shaft of right femur, initial encounter for open fracture type I or II
S72.363A	(ICD10) Displaced segmental fracture of shaft of unspecified femur, initial encounter for closed fracture
S72.363B	(ICD10) Displaced segmental fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
S72.363C	(ICD10) Displaced segmental fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.364A	(ICD10) Nondisplaced segmental fracture of shaft of right femur, initial encounter for closed fracture
S72.365B	(ICD10) Nondisplaced segmental fracture of shaft of left femur, initial encounter for open fracture type I or II
S72.366C	(ICD10) Nondisplaced segmental fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.392A	(ICD10) Other fracture of shaft of left femur, initial encounter for closed fracture

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S72.392C	(ICD10) Other fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.399B	(ICD10) Other fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
S72.399C	(ICD10) Other fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.401A	(ICD10) Unspecified fracture of lower end of right femur, initial encounter for closed fracture
S72.401C	(ICD10) Unspecified fracture of lower end of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.402B	(ICD10) Unspecified fracture of lower end of left femur, initial encounter for open fracture type I or II
S72.402C	(ICD10) Unspecified fracture of lower end of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.409B	(ICD10) Unspecified fracture of lower end of unspecified femur, initial encounter for open fracture type I or II
S72.411C	(ICD10) Displaced unspecified condyle fracture of lower end of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.412C	(ICD10) Displaced unspecified condyle fracture of lower end of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.413B	(ICD10) Displaced unspecified condyle fracture of lower end of unspecified femur, initial encounter for open fracture type I or II
S72.413C	(ICD10) Displaced unspecified condyle fracture of lower end of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.415A	(ICD10) Nondisplaced unspecified condyle fracture of lower end of left femur, initial encounter for closed fracture
S72.415B	(ICD10) Nondisplaced unspecified condyle fracture of lower end of left femur, initial encounter for open fracture type I or II
S72.416C	(ICD10) Nondisplaced unspecified condyle fracture of lower end of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.421C	(ICD10) Displaced fracture of lateral condyle of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.422C	(ICD10) Displaced fracture of lateral condyle of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.423C	(ICD10) Displaced fracture of lateral condyle of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.425B	(ICD10) Nondisplaced fracture of lateral condyle of left femur, initial encounter for open fracture type I or II
S72.426B	(ICD10) Nondisplaced fracture of lateral condyle of unspecified femur, initial encounter for open fracture type I or II
S72.431A	(ICD10) Displaced fracture of medial condyle of right femur, initial encounter for closed fracture
S72.431B	(ICD10) Displaced fracture of medial condyle of right femur, initial encounter for open fracture type I or II
S72.431C	(ICD10) Displaced fracture of medial condyle of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.433B	(ICD10) Displaced fracture of medial condyle of unspecified femur, initial encounter for open fracture type I or II
S72.434B	(ICD10) Nondisplaced fracture of medial condyle of right femur, initial encounter for open fracture type I or II
S72.435B	(ICD10) Nondisplaced fracture of medial condyle of left femur, initial encounter for open fracture type I or II
S72.436B	(ICD10) Nondisplaced fracture of medial condyle of unspecified femur, initial encounter for open fracture type I or II
S72.436C	(ICD10) Nondisplaced fracture of medial condyle of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.441C	(ICD10) Displaced fracture of lower epiphysis (separation) of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.442A	(ICD10) Displaced fracture of lower epiphysis (separation) of left femur, initial encounter for closed fracture
S72.442C	(ICD10) Displaced fracture of lower epiphysis (separation) of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC

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S72.443B	(ICD10) Displaced fracture of lower epiphysis (separation) of unspecified femur, initial encounter for open fracture type I or II
S72.443C	(ICD10) Displaced fracture of lower epiphysis (separation) of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.444A	(ICD10) Nondisplaced fracture of lower epiphysis (separation) of right femur, initial encounter for closed fracture
S72.445B	(ICD10) Nondisplaced fracture of lower epiphysis (separation) of left femur, initial encounter for open fracture type I or II
S72.446B	(ICD10) Nondisplaced fracture of lower epiphysis (separation) of unspecified femur, initial encounter for open fracture type I or II
S72.446C	(ICD10) Nondisplaced fracture of lower epiphysis (separation) of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.451C	(ICD10) Displaced supracondylar fracture without intracondylar extension of lower end of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.452A	(ICD10) Displaced supracondylar fracture without intracondylar extension of lower end of left femur, initial encounter for closed fracture
S72.452B	(ICD10) Displaced supracondylar fracture without intracondylar extension of lower end of left femur, initial encounter for open fracture type I or II
S72.452C	(ICD10) Displaced supracondylar fracture without intracondylar extension of lower end of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.454B	(ICD10) Nondisplaced supracondylar fracture without intracondylar extension of lower end of right femur, initial encounter for open fracture type I or II
S72.456C	(ICD10) Nondisplaced supracondylar fracture without intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.461A	(ICD10) Displaced supracondylar fracture with intracondylar extension of lower end of right femur, initial encounter for closed fracture
S72.461B	(ICD10) Displaced supracondylar fracture with intracondylar extension of lower end of right femur, initial encounter for open fracture type I or II
S72.461C	(ICD10) Displaced supracondylar fracture with intracondylar extension of lower end of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.462A	(ICD10) Displaced supracondylar fracture with intracondylar extension of lower end of left femur, initial encounter for closed fracture
S72.463A	(ICD10) Displaced supracondylar fracture with intracondylar extension of lower end of unspecified femur, initial encounter for closed fracture
S72.463B	(ICD10) Displaced supracondylar fracture with intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type I or II
S72.464A	(ICD10) Nondisplaced supracondylar fracture with intracondylar extension of lower end of right femur, initial encounter for closed fracture

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S72.464C	(ICD10) Nondisplaced supracondylar fracture with intracondylar extension of lower end of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.465B	(ICD10) Nondisplaced supracondylar fracture with intracondylar extension of lower end of left femur, initial encounter for open fracture type I or II
S72.466B	(ICD10) Nondisplaced supracondylar fracture with intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type I or II
S72.471A	(ICD10) Torus fracture of lower end of right femur, initial encounter for closed fracture
S72.491A	(ICD10) Other fracture of lower end of right femur, initial encounter for closed fracture
S72.491B	(ICD10) Other fracture of lower end of right femur, initial encounter for open fracture type I or II
S72.491C	(ICD10) Other fracture of lower end of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.492A	(ICD10) Other fracture of lower end of left femur, initial encounter for closed fracture
S72.492B	(ICD10) Other fracture of lower end of left femur, initial encounter for open fracture type I or II
S72.492C	(ICD10) Other fracture of lower end of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.499C	(ICD10) Other fracture of lower end of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.8X1B	(ICD10) Other fracture of right femur, initial encounter for open fracture type I or II
S72.8X2A	(ICD10) Other fracture of left femur, initial encounter for closed fracture
S72.8X2B	(ICD10) Other fracture of left femur, initial encounter for open fracture type I or II
S72.8X2C	(ICD10) Other fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.8X9C	(ICD10) Other fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72.90XA	(ICD10) Unspecified fracture of unspecified femur, initial encounter for closed fracture
S72.91XA	(ICD10) Unspecified fracture of right femur, initial encounter for closed fracture
S72.91XB	(ICD10) Unspecified fracture of right femur, initial encounter for open fracture type I or II
S72.92XA	(ICD10) Unspecified fracture of left femur, initial encounter for closed fracture
S79.102A	(ICD10) Unspecified physeal fracture of lower end of left femur, initial encounter for closed fracture
S79.109A	(ICD10) Unspecified physeal fracture of lower end of unspecified femur, initial encounter for closed fracture
S79.112A	(ICD10) Salter Harris Type I physeal fracture of lower end of left femur, initial encounter for closed fracture
S79.121A	(ICD10) Salter Harris Type II physeal fracture of lower end of right femur, initial encounter for closed fracture
S79.131A	(ICD10) Salter Harris Type III physeal fracture of lower end of right femur, initial encounter for closed fracture
S79.139A	(ICD10) Salter Harris Type III physeal fracture of lower end of unspecified femur, initial encounter for closed fracture
S79.142A	(ICD10) Salter Harris Type IV physeal fracture of lower end of left femur, initial encounter for closed fracture
S79.192A	(ICD10) Other physeal fracture of lower end of left femur, initial encounter for closed fracture
S79.199A	(ICD10) Other physeal fracture of lower end of unspecified femur, initial encounter for closed fracture
Tibia & Fibula Fracture	

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Diagnosis	
823	(ICD9) CLOSED FRACTURE OF UPPER END OF TIBIA
823.01	(ICD9) CLOSED FRACTURE OF UPPER END OF FIBULA
823.02	(ICD9) CLOSED FRACTURE OF UPPER END OF FIBULA WITH TIBIA
823.11	(ICD9) OPEN FRACTURE OF UPPER END OF FIBULA
823.2	(ICD9) CLOSED FRACTURE OF SHAFT OF TIBIA
823.22	(ICD9) CLOSED FRACTURE OF SHAFT OF FIBULA WITH TIBIA
823.3	(ICD9) FRACTURE OF SHAFT OF TIBIA AND FIBULA OPEN
823.32	(ICD9) OPEN FRACTURE OF SHAFT OF FIBULA WITH TIBIA
823.4	(ICD9) TORUS FRACTURE OF TIBIA ALONE
823.41	(ICD9) TORUS FRACTURE OF FIBULA ALONE
823.42	(ICD9) TORUS FRACTURE OF FIBULA WITH TIBIA
823.81	(ICD9) CLOSED FRACTURE OF UNSPECIFIED PART OF FIBULA
823.82	(ICD9) CLOSED FRACTURE OF UNSPECIFIED PART OF FIBULA WITH TIBIA
823.9	(ICD9) OPEN FRACTURE OF UNSPECIFIED PART OF TIBIA
823.92	(ICD9) OPEN FRACTURE OF UNSPECIFIED PART OF FIBULA WITH TIBIA
823	(ICD9) FRACTURE OF UPPER END OF TIBIA AND FIBULA CLOSED
823.1	(ICD9) FRACTURE OF UPPER END OF TIBIA AND FIBULA OPEN
823.1	(ICD9) OPEN FRACTURE OF UPPER END OF TIBIA
823.12	(ICD9) OPEN FRACTURE OF UPPER END OF FIBULA WITH TIBIA
823.2	(ICD9) FRACTURE OF SHAFT OF TIBIA AND FIBULA CLOSED
823.21	(ICD9) CLOSED FRACTURE OF SHAFT OF FIBULA
823.3	(ICD9) OPEN FRACTURE OF SHAFT OF TIBIA
823.31	(ICD9) OPEN FRACTURE OF SHAFT OF FIBULA
823.4	(ICD9) TORUS FRACTURE OF TIBIA AND FIBULA
823.8	(ICD9) FRACTURE OF UNSPECIFIED PART OF TIBIA AND FIBULA CLOSED
823.8	(ICD9) CLOSED FRACTURE OF UNSPECIFIED PART OF TIBIA
823.9	(ICD9) FRACTURE OF UNSPECIFIED PART OF TIBIA AND FIBULA OPEN
823.91	(ICD9) OPEN FRACTURE OF UNSPECIFIED PART OF FIBULA
S82.101C	(ICD10) Unspecified fracture of upper end of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.102A	(ICD10) Unspecified fracture of upper end of left tibia, initial encounter for closed fracture
S82.102B	(ICD10) Unspecified fracture of upper end of left tibia, initial encounter for open fracture type I or II
S82.109B	(ICD10) Unspecified fracture of upper end of unspecified tibia, initial encounter for open fracture type I or II

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S82.109C	(ICD10) Unspecified fracture of upper end of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.113C	(ICD10) Displaced fracture of unspecified tibial spine, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.115A	(ICD10) Nondisplaced fracture of left tibial spine, initial encounter for closed fracture
S82.115C	(ICD10) Nondisplaced fracture of left tibial spine, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.116A	(ICD10) Nondisplaced fracture of unspecified tibial spine, initial encounter for closed fracture
S82.121A	(ICD10) Displaced fracture of lateral condyle of right tibia, initial encounter for closed fracture
S82.121B	(ICD10) Displaced fracture of lateral condyle of right tibia, initial encounter for open fracture type I or II
S82.122C	(ICD10) Displaced fracture of lateral condyle of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.123A	(ICD10) Displaced fracture of lateral condyle of unspecified tibia, initial encounter for closed fracture
S82.123C	(ICD10) Displaced fracture of lateral condyle of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.124A	(ICD10) Nondisplaced fracture of lateral condyle of right tibia, initial encounter for closed fracture
S82.124B	(ICD10) Nondisplaced fracture of lateral condyle of right tibia, initial encounter for open fracture type I or II
S82.124C	(ICD10) Nondisplaced fracture of lateral condyle of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.126A	(ICD10) Nondisplaced fracture of lateral condyle of unspecified tibia, initial encounter for closed fracture
S82.126B	(ICD10) Nondisplaced fracture of lateral condyle of unspecified tibia, initial encounter for open fracture type I or II
S82.126C	(ICD10) Nondisplaced fracture of lateral condyle of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.131A	(ICD10) Displaced fracture of medial condyle of right tibia, initial encounter for closed fracture
S82.131B	(ICD10) Displaced fracture of medial condyle of right tibia, initial encounter for open fracture type I or II
S82.132A	(ICD10) Displaced fracture of medial condyle of left tibia, initial encounter for closed fracture
S82.132B	(ICD10) Displaced fracture of medial condyle of left tibia, initial encounter for open fracture type I or II
S82.134B	(ICD10) Nondisplaced fracture of medial condyle of right tibia, initial encounter for open fracture type I or II
S82.134C	(ICD10) Nondisplaced fracture of medial condyle of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.135B	(ICD10) Nondisplaced fracture of medial condyle of left tibia, initial encounter for open fracture type I or II
S82.135C	(ICD10) Nondisplaced fracture of medial condyle of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.136A	(ICD10) Nondisplaced fracture of medial condyle of unspecified tibia, initial encounter for closed fracture
S82.141A	(ICD10) Displaced bicondylar fracture of right tibia, initial encounter for closed fracture
S82.142A	(ICD10) Displaced bicondylar fracture of left tibia, initial encounter for closed fracture
S82.142B	(ICD10) Displaced bicondylar fracture of left tibia, initial encounter for open fracture type I or II
S82.143B	(ICD10) Displaced bicondylar fracture of unspecified tibia, initial encounter for open fracture type I or II
S82.144A	(ICD10) Nondisplaced bicondylar fracture of right tibia, initial encounter for closed fracture
S82.144B	(ICD10) Nondisplaced bicondylar fracture of right tibia, initial encounter for open fracture type I or II
S82.144C	(ICD10) Nondisplaced bicondylar fracture of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.145A	(ICD10) Nondisplaced bicondylar fracture of left tibia, initial encounter for closed fracture



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S82.145B	(ICD10) Nondisplaced bicondylar fracture of left tibia, initial encounter for open fracture type I or II
S82.145C	(ICD10) Nondisplaced bicondylar fracture of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.146B	(ICD10) Nondisplaced bicondylar fracture of unspecified tibia, initial encounter for open fracture type I or II
S82.146C	(ICD10) Nondisplaced bicondylar fracture of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.151A	(ICD10) Displaced fracture of right tibial tuberosity, initial encounter for closed fracture
S82.151B	(ICD10) Displaced fracture of right tibial tuberosity, initial encounter for open fracture type I or II
S82.151C	(ICD10) Displaced fracture of right tibial tuberosity, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.152B	(ICD10) Displaced fracture of left tibial tuberosity, initial encounter for open fracture type I or II
S82.153C	(ICD10) Displaced fracture of unspecified tibial tuberosity, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.154C	(ICD10) Nondisplaced fracture of right tibial tuberosity, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.155C	(ICD10) Nondisplaced fracture of left tibial tuberosity, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.169A	(ICD10) Torus fracture of upper end of unspecified tibia, initial encounter for closed fracture
S82.191C	(ICD10) Other fracture of upper end of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.192A	(ICD10) Other fracture of upper end of left tibia, initial encounter for closed fracture
S82.192B	(ICD10) Other fracture of upper end of left tibia, initial encounter for open fracture type I or II
S82.192C	(ICD10) Other fracture of upper end of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.199A	(ICD10) Other fracture of upper end of unspecified tibia, initial encounter for closed fracture
S82.199B	(ICD10) Other fracture of upper end of unspecified tibia, initial encounter for open fracture type I or II
S82.201B	(ICD10) Unspecified fracture of shaft of right tibia, initial encounter for open fracture type I or II
S82.201C	(ICD10) Unspecified fracture of shaft of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.209A	(ICD10) Unspecified fracture of shaft of unspecified tibia, initial encounter for closed fracture
S82.209C	(ICD10) Unspecified fracture of shaft of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.221A	(ICD10) Displaced transverse fracture of shaft of right tibia, initial encounter for closed fracture
S82.221B	(ICD10) Displaced transverse fracture of shaft of right tibia, initial encounter for open fracture type I or II
S82.222C	(ICD10) Displaced transverse fracture of shaft of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.223A	(ICD10) Displaced transverse fracture of shaft of unspecified tibia, initial encounter for closed fracture
S82.224A	(ICD10) Nondisplaced transverse fracture of shaft of right tibia, initial encounter for closed fracture
S82.224B	(ICD10) Nondisplaced transverse fracture of shaft of right tibia, initial encounter for open fracture type I or II
S82.225A	(ICD10) Nondisplaced transverse fracture of shaft of left tibia, initial encounter for closed fracture
S82.225C	(ICD10) Nondisplaced transverse fracture of shaft of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.226A	(ICD10) Nondisplaced transverse fracture of shaft of unspecified tibia, initial encounter for closed fracture
S82.226B	(ICD10) Nondisplaced transverse fracture of shaft of unspecified tibia, initial encounter for open fracture type I or II
S82.226C	(ICD10) Nondisplaced transverse fracture of shaft of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC

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S82.231B	(ICD10) Displaced oblique fracture of shaft of right tibia, initial encounter for open fracture type I or II
S82.231C	(ICD10) Displaced oblique fracture of shaft of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.232C	(ICD10) Displaced oblique fracture of shaft of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.233C	(ICD10) Displaced oblique fracture of shaft of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.234A	(ICD10) Nondisplaced oblique fracture of shaft of right tibia, initial encounter for closed fracture
S82.234C	(ICD10) Nondisplaced oblique fracture of shaft of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.235A	(ICD10) Nondisplaced oblique fracture of shaft of left tibia, initial encounter for closed fracture
S82.235B	(ICD10) Nondisplaced oblique fracture of shaft of left tibia, initial encounter for open fracture type I or II
S82.236A	(ICD10) Nondisplaced oblique fracture of shaft of unspecified tibia, initial encounter for closed fracture
S82.236B	(ICD10) Nondisplaced oblique fracture of shaft of unspecified tibia, initial encounter for open fracture type I or II
S82.241A	(ICD10) Displaced spiral fracture of shaft of right tibia, initial encounter for closed fracture
S82.241B	(ICD10) Displaced spiral fracture of shaft of right tibia, initial encounter for open fracture type I or II
S82.242A	(ICD10) Displaced spiral fracture of shaft of left tibia, initial encounter for closed fracture
S82.243C	(ICD10) Displaced spiral fracture of shaft of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.244A	(ICD10) Nondisplaced spiral fracture of shaft of right tibia, initial encounter for closed fracture
S82.244B	(ICD10) Nondisplaced spiral fracture of shaft of right tibia, initial encounter for open fracture type I or II
S82.245A	(ICD10) Nondisplaced spiral fracture of shaft of left tibia, initial encounter for closed fracture
S82.245B	(ICD10) Nondisplaced spiral fracture of shaft of left tibia, initial encounter for open fracture type I or II
S82.245C	(ICD10) Nondisplaced spiral fracture of shaft of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.246C	(ICD10) Nondisplaced spiral fracture of shaft of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.251A	(ICD10) Displaced comminuted fracture of shaft of right tibia, initial encounter for closed fracture
S82.251B	(ICD10) Displaced comminuted fracture of shaft of right tibia, initial encounter for open fracture type I or II
S82.252A	(ICD10) Displaced comminuted fracture of shaft of left tibia, initial encounter for closed fracture
S82.252B	(ICD10) Displaced comminuted fracture of shaft of left tibia, initial encounter for open fracture type I or II
S82.253A	(ICD10) Displaced comminuted fracture of shaft of unspecified tibia, initial encounter for closed fracture
S82.253C	(ICD10) Displaced comminuted fracture of shaft of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.255A	(ICD10) Nondisplaced comminuted fracture of shaft of left tibia, initial encounter for closed fracture
S82.255B	(ICD10) Nondisplaced comminuted fracture of shaft of left tibia, initial encounter for open fracture type I or II
S82.256B	(ICD10) Nondisplaced comminuted fracture of shaft of unspecified tibia, initial encounter for open fracture type I or II
S82.261B	(ICD10) Displaced segmental fracture of shaft of right tibia, initial encounter for open fracture type I or II
S82.261C	(ICD10) Displaced segmental fracture of shaft of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.262A	(ICD10) Displaced segmental fracture of shaft of left tibia, initial encounter for closed fracture
S82.262B	(ICD10) Displaced segmental fracture of shaft of left tibia, initial encounter for open fracture type I or II

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S82.263C	(ICD10) Displaced segmental fracture of shaft of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.264B	(ICD10) Nondisplaced segmental fracture of shaft of right tibia, initial encounter for open fracture type I or II
S82.264C	(ICD10) Nondisplaced segmental fracture of shaft of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.265A	(ICD10) Nondisplaced segmental fracture of shaft of left tibia, initial encounter for closed fracture
S82.265C	(ICD10) Nondisplaced segmental fracture of shaft of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.266C	(ICD10) Nondisplaced segmental fracture of shaft of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.291A	(ICD10) Other fracture of shaft of right tibia, initial encounter for closed fracture
S82.292A	(ICD10) Other fracture of shaft of left tibia, initial encounter for closed fracture
S82.292B	(ICD10) Other fracture of shaft of left tibia, initial encounter for open fracture type I or II
S82.299B	(ICD10) Other fracture of shaft of unspecified tibia, initial encounter for open fracture type I or II
S82.299C	(ICD10) Other fracture of shaft of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.311A	(ICD10) Torus fracture of lower end of right tibia, initial encounter for closed fracture
S82.401B	(ICD10) Unspecified fracture of shaft of right fibula, initial encounter for open fracture type I or II
S82.402B	(ICD10) Unspecified fracture of shaft of left fibula, initial encounter for open fracture type I or II
S82.402C	(ICD10) Unspecified fracture of shaft of left fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.409C	(ICD10) Unspecified fracture of shaft of unspecified fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.421A	(ICD10) Displaced transverse fracture of shaft of right fibula, initial encounter for closed fracture
S82.421B	(ICD10) Displaced transverse fracture of shaft of right fibula, initial encounter for open fracture type I or II
S82.423A	(ICD10) Displaced transverse fracture of shaft of unspecified fibula, initial encounter for closed fracture
S82.423C	(ICD10) Displaced transverse fracture of shaft of unspecified fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.424B	(ICD10) Nondisplaced transverse fracture of shaft of right fibula, initial encounter for open fracture type I or II
S82.425A	(ICD10) Nondisplaced transverse fracture of shaft of left fibula, initial encounter for closed fracture
S82.431A	(ICD10) Displaced oblique fracture of shaft of right fibula, initial encounter for closed fracture
S82.431B	(ICD10) Displaced oblique fracture of shaft of right fibula, initial encounter for open fracture type I or II
S82.432A	(ICD10) Displaced oblique fracture of shaft of left fibula, initial encounter for closed fracture
S82.432C	(ICD10) Displaced oblique fracture of shaft of left fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.433A	(ICD10) Displaced oblique fracture of shaft of unspecified fibula, initial encounter for closed fracture
S82.434B	(ICD10) Nondisplaced oblique fracture of shaft of right fibula, initial encounter for open fracture type I or II
S82.434C	(ICD10) Nondisplaced oblique fracture of shaft of right fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.435A	(ICD10) Nondisplaced oblique fracture of shaft of left fibula, initial encounter for closed fracture
S82.435C	(ICD10) Nondisplaced oblique fracture of shaft of left fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.436B	(ICD10) Nondisplaced oblique fracture of shaft of unspecified fibula, initial encounter for open fracture type I or II
S82.436C	(ICD10) Nondisplaced oblique fracture of shaft of unspecified fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC

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S82.441A	(ICD10) Displaced spiral fracture of shaft of right fibula, initial encounter for closed fracture
S82.441B	(ICD10) Displaced spiral fracture of shaft of right fibula, initial encounter for open fracture type I or II
S82.441C	(ICD10) Displaced spiral fracture of shaft of right fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.442A	(ICD10) Displaced spiral fracture of shaft of left fibula, initial encounter for closed fracture
S82.443B	(ICD10) Displaced spiral fracture of shaft of unspecified fibula, initial encounter for open fracture type I or II
S82.443C	(ICD10) Displaced spiral fracture of shaft of unspecified fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.444B	(ICD10) Nondisplaced spiral fracture of shaft of right fibula, initial encounter for open fracture type I or II
S82.445A	(ICD10) Nondisplaced spiral fracture of shaft of left fibula, initial encounter for closed fracture
S82.445C	(ICD10) Nondisplaced spiral fracture of shaft of left fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.446A	(ICD10) Nondisplaced spiral fracture of shaft of unspecified fibula, initial encounter for closed fracture
S82.446C	(ICD10) Nondisplaced spiral fracture of shaft of unspecified fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.452C	(ICD10) Displaced comminuted fracture of shaft of left fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.453A	(ICD10) Displaced comminuted fracture of shaft of unspecified fibula, initial encounter for closed fracture
S82.453C	(ICD10) Displaced comminuted fracture of shaft of unspecified fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.454A	(ICD10) Nondisplaced comminuted fracture of shaft of right fibula, initial encounter for closed fracture
S82.454B	(ICD10) Nondisplaced comminuted fracture of shaft of right fibula, initial encounter for open fracture type I or II
S82.454C	(ICD10) Nondisplaced comminuted fracture of shaft of right fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.456B	(ICD10) Nondisplaced comminuted fracture of shaft of unspecified fibula, initial encounter for open fracture type I or II
S82.461A	(ICD10) Displaced segmental fracture of shaft of right fibula, initial encounter for closed fracture
S82.462C	(ICD10) Displaced segmental fracture of shaft of left fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.463B	(ICD10) Displaced segmental fracture of shaft of unspecified fibula, initial encounter for open fracture type I or II
S82.464A	(ICD10) Nondisplaced segmental fracture of shaft of right fibula, initial encounter for closed fracture
S82.464C	(ICD10) Nondisplaced segmental fracture of shaft of right fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.465A	(ICD10) Nondisplaced segmental fracture of shaft of left fibula, initial encounter for closed fracture
S82.466A	(ICD10) Nondisplaced segmental fracture of shaft of unspecified fibula, initial encounter for closed fracture
S82.466B	(ICD10) Nondisplaced segmental fracture of shaft of unspecified fibula, initial encounter for open fracture type I or II
S82.491B	(ICD10) Other fracture of shaft of right fibula, initial encounter for open fracture type I or II
S82.491C	(ICD10) Other fracture of shaft of right fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.499A	(ICD10) Other fracture of shaft of unspecified fibula, initial encounter for closed fracture
S82.499B	(ICD10) Other fracture of shaft of unspecified fibula, initial encounter for open fracture type I or II
S82.811A	(ICD10) Torus fracture of upper end of right fibula, initial encounter for closed fracture
S82.822A	(ICD10) Torus fracture of lower end of left fibula, initial encounter for closed fracture
S82.829A	(ICD10) Torus fracture of lower end of unspecified fibula, initial encounter for closed fracture

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S82.831B	(ICD10) Other fracture of upper and lower end of right fibula, initial encounter for open fracture type I or II
S82.832A	(ICD10) Other fracture of upper and lower end of left fibula, initial encounter for closed fracture
S82.839B	(ICD10) Other fracture of upper and lower end of unspecified fibula, initial encounter for open fracture type I or II
S82.839C	(ICD10) Other fracture of upper and lower end of unspecified fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.861C	(ICD10) Displaced Maisonneuve's fracture of right leg, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.862A	(ICD10) Displaced Maisonneuve's fracture of left leg, initial encounter for closed fracture
S82.862C	(ICD10) Displaced Maisonneuve's fracture of left leg, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.864A	(ICD10) Nondisplaced Maisonneuve's fracture of right leg, initial encounter for closed fracture
S82.864B	(ICD10) Nondisplaced Maisonneuve's fracture of right leg, initial encounter for open fracture type I or II
S82.864C	(ICD10) Nondisplaced Maisonneuve's fracture of right leg, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.865B	(ICD10) Nondisplaced Maisonneuve's fracture of left leg, initial encounter for open fracture type I or II
S89.002A	(ICD10) Unspecified physeal fracture of upper end of left tibia, initial encounter for closed fracture
S89.009A	(ICD10) Unspecified physeal fracture of upper end of unspecified tibia, initial encounter for closed fracture
S89.012A	(ICD10) Salter Harris Type I physeal fracture of upper end of left tibia, initial encounter for closed fracture
S89.021A	(ICD10) Salter Harris Type II physeal fracture of upper end of right tibia, initial encounter for closed fracture
S89.029A	(ICD10) Salter Harris Type II physeal fracture of upper end of unspecified tibia, initial encounter for closed fracture
S89.031A	(ICD10) Salter Harris Type III physeal fracture of upper end of right tibia, initial encounter for closed fracture
S89.039A	(ICD10) Salter Harris Type III physeal fracture of upper end of unspecified tibia, initial encounter for closed fracture
S89.049A	(ICD10) Salter Harris Type IV physeal fracture of upper end of unspecified tibia, initial encounter for closed fracture
S89.092A	(ICD10) Other physeal fracture of upper end of left tibia, initial encounter for closed fracture
S89.202A	(ICD10) Unspecified physeal fracture of upper end of left fibula, initial encounter for closed fracture
S89.209A	(ICD10) Unspecified physeal fracture of upper end of unspecified fibula, initial encounter for closed fracture
S89.211A	(ICD10) Salter Harris Type I physeal fracture of upper end of right fibula, initial encounter for closed fracture
S89.219A	(ICD10) Salter Harris Type I physeal fracture of upper end of unspecified fibula, initial encounter for closed fracture
S89.221A	(ICD10) Salter Harris Type II physeal fracture of upper end of right fibula, initial encounter for closed fracture
S89.229A	(ICD10) Salter Harris Type II physeal fracture of upper end of unspecified fibula, initial encounter for closed fracture
S89.291A	(ICD10) Other physeal fracture of upper end of right fibula, initial encounter for closed fracture
S89.292A	(ICD10) Other physeal fracture of upper end of left fibula, initial encounter for closed fracture
S82.101A	(ICD10) Unspecified fracture of upper end of right tibia, initial encounter for closed fracture
S82.101B	(ICD10) Unspecified fracture of upper end of right tibia, initial encounter for open fracture type I or II
S82.102C	(ICD10) Unspecified fracture of upper end of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.109A	(ICD10) Unspecified fracture of upper end of unspecified tibia, initial encounter for closed fracture
S82.112A	(ICD10) Displaced fracture of left tibial spine, initial encounter for closed fracture

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S82.112B	(ICD10) Displaced fracture of left tibial spine, initial encounter for open fracture type I or II
S82.112C	(ICD10) Displaced fracture of left tibial spine, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.113A	(ICD10) Displaced fracture of unspecified tibial spine, initial encounter for closed fracture
S82.113B	(ICD10) Displaced fracture of unspecified tibial spine, initial encounter for open fracture type I or II
S82.114A	(ICD10) Nondisplaced fracture of right tibial spine, initial encounter for closed fracture
S82.114B	(ICD10) Nondisplaced fracture of right tibial spine, initial encounter for open fracture type I or II
S82.114C	(ICD10) Nondisplaced fracture of right tibial spine, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.115B	(ICD10) Nondisplaced fracture of left tibial spine, initial encounter for open fracture type I or II
S82.116B	(ICD10) Nondisplaced fracture of unspecified tibial spine, initial encounter for open fracture type I or II
S82.116C	(ICD10) Nondisplaced fracture of unspecified tibial spine, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.121C	(ICD10) Displaced fracture of lateral condyle of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.122A	(ICD10) Displaced fracture of lateral condyle of left tibia, initial encounter for closed fracture
S82.122B	(ICD10) Displaced fracture of lateral condyle of left tibia, initial encounter for open fracture type I or II
S82.123B	(ICD10) Displaced fracture of lateral condyle of unspecified tibia, initial encounter for open fracture type I or II
S82.125A	(ICD10) Nondisplaced fracture of lateral condyle of left tibia, initial encounter for closed fracture
S82.125B	(ICD10) Nondisplaced fracture of lateral condyle of left tibia, initial encounter for open fracture type I or II
S82.125C	(ICD10) Nondisplaced fracture of lateral condyle of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.131C	(ICD10) Displaced fracture of medial condyle of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.132C	(ICD10) Displaced fracture of medial condyle of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.133A	(ICD10) Displaced fracture of medial condyle of unspecified tibia, initial encounter for closed fracture
S82.133B	(ICD10) Displaced fracture of medial condyle of unspecified tibia, initial encounter for open fracture type I or II
S82.133C	(ICD10) Displaced fracture of medial condyle of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.134A	(ICD10) Nondisplaced fracture of medial condyle of right tibia, initial encounter for closed fracture
S82.135A	(ICD10) Nondisplaced fracture of medial condyle of left tibia, initial encounter for closed fracture
S82.136B	(ICD10) Nondisplaced fracture of medial condyle of unspecified tibia, initial encounter for open fracture type I or II
S82.136C	(ICD10) Nondisplaced fracture of medial condyle of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.141B	(ICD10) Displaced bicondylar fracture of right tibia, initial encounter for open fracture type I or II
S82.141C	(ICD10) Displaced bicondylar fracture of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.142C	(ICD10) Displaced bicondylar fracture of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.143A	(ICD10) Displaced bicondylar fracture of unspecified tibia, initial encounter for closed fracture
S82.143C	(ICD10) Displaced bicondylar fracture of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.146A	(ICD10) Nondisplaced bicondylar fracture of unspecified tibia, initial encounter for closed fracture
S82.152A	(ICD10) Displaced fracture of left tibial tuberosity, initial encounter for closed fracture

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S82.152C	(ICD10) Displaced fracture of left tibial tuberosity, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.153A	(ICD10) Displaced fracture of unspecified tibial tuberosity, initial encounter for closed fracture
S82.153B	(ICD10) Displaced fracture of unspecified tibial tuberosity, initial encounter for open fracture type I or II
S82.154A	(ICD10) Nondisplaced fracture of right tibial tuberosity, initial encounter for closed fracture
S82.154B	(ICD10) Nondisplaced fracture of right tibial tuberosity, initial encounter for open fracture type I or II
S82.155A	(ICD10) Nondisplaced fracture of left tibial tuberosity, initial encounter for closed fracture
S82.155B	(ICD10) Nondisplaced fracture of left tibial tuberosity, initial encounter for open fracture type I or II
S82.156A	(ICD10) Nondisplaced fracture of unspecified tibial tuberosity, initial encounter for closed fracture
S82.156B	(ICD10) Nondisplaced fracture of unspecified tibial tuberosity, initial encounter for open fracture type I or II
S82.156C	(ICD10) Nondisplaced fracture of unspecified tibial tuberosity, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.161A	(ICD10) Torus fracture of upper end of right tibia, initial encounter for closed fracture
S82.162A	(ICD10) Torus fracture of upper end of left tibia, initial encounter for closed fracture
S82.191A	(ICD10) Other fracture of upper end of right tibia, initial encounter for closed fracture
S82.191B	(ICD10) Other fracture of upper end of right tibia, initial encounter for open fracture type I or II
S82.199C	(ICD10) Other fracture of upper end of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.201A	(ICD10) Unspecified fracture of shaft of right tibia, initial encounter for closed fracture
S82.202A	(ICD10) Unspecified fracture of shaft of left tibia, initial encounter for closed fracture
S82.202B	(ICD10) Unspecified fracture of shaft of left tibia, initial encounter for open fracture type I or II
S82.202C	(ICD10) Unspecified fracture of shaft of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.209B	(ICD10) Unspecified fracture of shaft of unspecified tibia, initial encounter for open fracture type I or II
S82.221C	(ICD10) Displaced transverse fracture of shaft of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.222A	(ICD10) Displaced transverse fracture of shaft of left tibia, initial encounter for closed fracture
S82.222B	(ICD10) Displaced transverse fracture of shaft of left tibia, initial encounter for open fracture type I or II
S82.223B	(ICD10) Displaced transverse fracture of shaft of unspecified tibia, initial encounter for open fracture type I or II
S82.223C	(ICD10) Displaced transverse fracture of shaft of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.224C	(ICD10) Nondisplaced transverse fracture of shaft of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.225B	(ICD10) Nondisplaced transverse fracture of shaft of left tibia, initial encounter for open fracture type I or II
S82.231A	(ICD10) Displaced oblique fracture of shaft of right tibia, initial encounter for closed fracture
S82.232A	(ICD10) Displaced oblique fracture of shaft of left tibia, initial encounter for closed fracture
S82.232B	(ICD10) Displaced oblique fracture of shaft of left tibia, initial encounter for open fracture type I or II
S82.233A	(ICD10) Displaced oblique fracture of shaft of unspecified tibia, initial encounter for closed fracture
S82.233B	(ICD10) Displaced oblique fracture of shaft of unspecified tibia, initial encounter for open fracture type I or II
S82.234B	(ICD10) Nondisplaced oblique fracture of shaft of right tibia, initial encounter for open fracture type I or II

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S82.235C	(ICD10) Nondisplaced oblique fracture of shaft of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.236C	(ICD10) Nondisplaced oblique fracture of shaft of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.241C	(ICD10) Displaced spiral fracture of shaft of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.242B	(ICD10) Displaced spiral fracture of shaft of left tibia, initial encounter for open fracture type I or II
S82.242C	(ICD10) Displaced spiral fracture of shaft of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.243A	(ICD10) Displaced spiral fracture of shaft of unspecified tibia, initial encounter for closed fracture
S82.243B	(ICD10) Displaced spiral fracture of shaft of unspecified tibia, initial encounter for open fracture type I or II
S82.244C	(ICD10) Nondisplaced spiral fracture of shaft of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.246A	(ICD10) Nondisplaced spiral fracture of shaft of unspecified tibia, initial encounter for closed fracture
S82.246B	(ICD10) Nondisplaced spiral fracture of shaft of unspecified tibia, initial encounter for open fracture type I or II
S82.251C	(ICD10) Displaced comminuted fracture of shaft of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.252C	(ICD10) Displaced comminuted fracture of shaft of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.253B	(ICD10) Displaced comminuted fracture of shaft of unspecified tibia, initial encounter for open fracture type I or II
S82.254A	(ICD10) Nondisplaced comminuted fracture of shaft of right tibia, initial encounter for closed fracture
S82.254B	(ICD10) Nondisplaced comminuted fracture of shaft of right tibia, initial encounter for open fracture type I or II
S82.254C	(ICD10) Nondisplaced comminuted fracture of shaft of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.255C	(ICD10) Nondisplaced comminuted fracture of shaft of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.256A	(ICD10) Nondisplaced comminuted fracture of shaft of unspecified tibia, initial encounter for closed fracture
S82.256C	(ICD10) Nondisplaced comminuted fracture of shaft of unspecified tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.261A	(ICD10) Displaced segmental fracture of shaft of right tibia, initial encounter for closed fracture
S82.262C	(ICD10) Displaced segmental fracture of shaft of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.263A	(ICD10) Displaced segmental fracture of shaft of unspecified tibia, initial encounter for closed fracture
S82.263B	(ICD10) Displaced segmental fracture of shaft of unspecified tibia, initial encounter for open fracture type I or II
S82.264A	(ICD10) Nondisplaced segmental fracture of shaft of right tibia, initial encounter for closed fracture
S82.265B	(ICD10) Nondisplaced segmental fracture of shaft of left tibia, initial encounter for open fracture type I or II
S82.266A	(ICD10) Nondisplaced segmental fracture of shaft of unspecified tibia, initial encounter for closed fracture
S82.266B	(ICD10) Nondisplaced segmental fracture of shaft of unspecified tibia, initial encounter for open fracture type I or II
S82.291B	(ICD10) Other fracture of shaft of right tibia, initial encounter for open fracture type I or II
S82.291C	(ICD10) Other fracture of shaft of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.292C	(ICD10) Other fracture of shaft of left tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.299A	(ICD10) Other fracture of shaft of unspecified tibia, initial encounter for closed fracture
S82.312A	(ICD10) Torus fracture of lower end of left tibia, initial encounter for closed fracture
S82.319A	(ICD10) Torus fracture of lower end of unspecified tibia, initial encounter for closed fracture



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S82.401A	(ICD10) Unspecified fracture of shaft of right fibula, initial encounter for closed fracture
S82.401C	(ICD10) Unspecified fracture of shaft of right fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.402A	(ICD10) Unspecified fracture of shaft of left fibula, initial encounter for closed fracture
S82.409A	(ICD10) Unspecified fracture of shaft of unspecified fibula, initial encounter for closed fracture
S82.409B	(ICD10) Unspecified fracture of shaft of unspecified fibula, initial encounter for open fracture type I or II
S82.421C	(ICD10) Displaced transverse fracture of shaft of right fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.422A	(ICD10) Displaced transverse fracture of shaft of left fibula, initial encounter for closed fracture
S82.422B	(ICD10) Displaced transverse fracture of shaft of left fibula, initial encounter for open fracture type I or II
S82.422C	(ICD10) Displaced transverse fracture of shaft of left fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.423B	(ICD10) Displaced transverse fracture of shaft of unspecified fibula, initial encounter for open fracture type I or II
S82.424A	(ICD10) Nondisplaced transverse fracture of shaft of right fibula, initial encounter for closed fracture
S82.424C	(ICD10) Nondisplaced transverse fracture of shaft of right fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.425B	(ICD10) Nondisplaced transverse fracture of shaft of left fibula, initial encounter for open fracture type I or II
S82.425C	(ICD10) Nondisplaced transverse fracture of shaft of left fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.426A	(ICD10) Nondisplaced transverse fracture of shaft of unspecified fibula, initial encounter for closed fracture
S82.426B	(ICD10) Nondisplaced transverse fracture of shaft of unspecified fibula, initial encounter for open fracture type I or II
S82.426C	(ICD10) Nondisplaced transverse fracture of shaft of unspecified fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.431C	(ICD10) Displaced oblique fracture of shaft of right fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.432B	(ICD10) Displaced oblique fracture of shaft of left fibula, initial encounter for open fracture type I or II
S82.433B	(ICD10) Displaced oblique fracture of shaft of unspecified fibula, initial encounter for open fracture type I or II
S82.433C	(ICD10) Displaced oblique fracture of shaft of unspecified fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.434A	(ICD10) Nondisplaced oblique fracture of shaft of right fibula, initial encounter for closed fracture
S82.435B	(ICD10) Nondisplaced oblique fracture of shaft of left fibula, initial encounter for open fracture type I or II
S82.436A	(ICD10) Nondisplaced oblique fracture of shaft of unspecified fibula, initial encounter for closed fracture
S82.442B	(ICD10) Displaced spiral fracture of shaft of left fibula, initial encounter for open fracture type I or II
S82.442C	(ICD10) Displaced spiral fracture of shaft of left fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.443A	(ICD10) Displaced spiral fracture of shaft of unspecified fibula, initial encounter for closed fracture
S82.444A	(ICD10) Nondisplaced spiral fracture of shaft of right fibula, initial encounter for closed fracture
S82.444C	(ICD10) Nondisplaced spiral fracture of shaft of right fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.445B	(ICD10) Nondisplaced spiral fracture of shaft of left fibula, initial encounter for open fracture type I or II
S82.446B	(ICD10) Nondisplaced spiral fracture of shaft of unspecified fibula, initial encounter for open fracture type I or II
S82.451A	(ICD10) Displaced comminuted fracture of shaft of right fibula, initial encounter for closed fracture
S82.451B	(ICD10) Displaced comminuted fracture of shaft of right fibula, initial encounter for open fracture type I or II

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S82.451C	(ICD10) Displaced comminuted fracture of shaft of right fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.452A	(ICD10) Displaced comminuted fracture of shaft of left fibula, initial encounter for closed fracture
S82.452B	(ICD10) Displaced comminuted fracture of shaft of left fibula, initial encounter for open fracture type I or II
S82.453B	(ICD10) Displaced comminuted fracture of shaft of unspecified fibula, initial encounter for open fracture type I or II
S82.455A	(ICD10) Nondisplaced comminuted fracture of shaft of left fibula, initial encounter for closed fracture
S82.455B	(ICD10) Nondisplaced comminuted fracture of shaft of left fibula, initial encounter for open fracture type I or II
S82.455C	(ICD10) Nondisplaced comminuted fracture of shaft of left fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.456A	(ICD10) Nondisplaced comminuted fracture of shaft of unspecified fibula, initial encounter for closed fracture
S82.456C	(ICD10) Nondisplaced comminuted fracture of shaft of unspecified fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.461B	(ICD10) Displaced segmental fracture of shaft of right fibula, initial encounter for open fracture type I or II
S82.461C	(ICD10) Displaced segmental fracture of shaft of right fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.462A	(ICD10) Displaced segmental fracture of shaft of left fibula, initial encounter for closed fracture
S82.462B	(ICD10) Displaced segmental fracture of shaft of left fibula, initial encounter for open fracture type I or II
S82.463A	(ICD10) Displaced segmental fracture of shaft of unspecified fibula, initial encounter for closed fracture
S82.463C	(ICD10) Displaced segmental fracture of shaft of unspecified fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.464B	(ICD10) Nondisplaced segmental fracture of shaft of right fibula, initial encounter for open fracture type I or II
S82.465B	(ICD10) Nondisplaced segmental fracture of shaft of left fibula, initial encounter for open fracture type I or II
S82.465C	(ICD10) Nondisplaced segmental fracture of shaft of left fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.466C	(ICD10) Nondisplaced segmental fracture of shaft of unspecified fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.491A	(ICD10) Other fracture of shaft of right fibula, initial encounter for closed fracture
S82.492A	(ICD10) Other fracture of shaft of left fibula, initial encounter for closed fracture
S82.492B	(ICD10) Other fracture of shaft of left fibula, initial encounter for open fracture type I or II
S82.492C	(ICD10) Other fracture of shaft of left fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.499C	(ICD10) Other fracture of shaft of unspecified fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.812A	(ICD10) Torus fracture of upper end of left fibula, initial encounter for closed fracture
S82.819A	(ICD10) Torus fracture of upper end of unspecified fibula, initial encounter for closed fracture
S82.821A	(ICD10) Torus fracture of lower end of right fibula, initial encounter for closed fracture
S82.831A	(ICD10) Other fracture of upper and lower end of right fibula, initial encounter for closed fracture
S82.831C	(ICD10) Other fracture of upper and lower end of right fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.832B	(ICD10) Other fracture of upper and lower end of left fibula, initial encounter for open fracture type I or II
S82.832C	(ICD10) Other fracture of upper and lower end of left fibula, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.839A	(ICD10) Other fracture of upper and lower end of unspecified fibula, initial encounter for closed fracture
S82.861A	(ICD10) Displaced Maisonneuve's fracture of right leg, initial encounter for closed fracture

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S82.861B	(ICD10) Displaced Maisonneuve's fracture of right leg, initial encounter for open fracture type I or II
S82.862B	(ICD10) Displaced Maisonneuve's fracture of left leg, initial encounter for open fracture type I or II
S82.863A	(ICD10) Displaced Maisonneuve's fracture of unspecified leg, initial encounter for closed fracture
S82.863B	(ICD10) Displaced Maisonneuve's fracture of unspecified leg, initial encounter for open fracture type I or II
S82.863C	(ICD10) Displaced Maisonneuve's fracture of unspecified leg, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.865A	(ICD10) Nondisplaced Maisonneuve's fracture of left leg, initial encounter for closed fracture
S82.865C	(ICD10) Nondisplaced Maisonneuve's fracture of left leg, initial encounter for open fracture type IIIA, IIIB, or IIIC
S82.866A	(ICD10) Nondisplaced Maisonneuve's fracture of unspecified leg, initial encounter for closed fracture
S82.866B	(ICD10) Nondisplaced Maisonneuve's fracture of unspecified leg, initial encounter for open fracture type I or II
S82.866C	(ICD10) Nondisplaced Maisonneuve's fracture of unspecified leg, initial encounter for open fracture type IIIA, IIIB, or IIIC
S89.001A	(ICD10) Unspecified physeal fracture of upper end of right tibia, initial encounter for closed fracture
S89.011A	(ICD10) Salter Harris Type I physeal fracture of upper end of right tibia, initial encounter for closed fracture
S89.019A	(ICD10) Salter Harris Type I physeal fracture of upper end of unspecified tibia, initial encounter for closed fracture
S89.022A	(ICD10) Salter Harris Type II physeal fracture of upper end of left tibia, initial encounter for closed fracture
S89.032A	(ICD10) Salter Harris Type III physeal fracture of upper end of left tibia, initial encounter for closed fracture
S89.041A	(ICD10) Salter Harris Type IV physeal fracture of upper end of right tibia, initial encounter for closed fracture
S89.042A	(ICD10) Salter Harris Type IV physeal fracture of upper end of left tibia, initial encounter for closed fracture
S89.091A	(ICD10) Other physeal fracture of upper end of right tibia, initial encounter for closed fracture
S89.099A	(ICD10) Other physeal fracture of upper end of unspecified tibia, initial encounter for closed fracture
S89.201A	(ICD10) Unspecified physeal fracture of upper end of right fibula, initial encounter for closed fracture
S89.212A	(ICD10) Salter Harris Type I physeal fracture of upper end of left fibula, initial encounter for closed fracture
S89.222A	(ICD10) Salter Harris Type II physeal fracture of upper end of left fibula, initial encounter for closed fracture
S89.299A	(ICD10) Other physeal fracture of upper end of unspecified fibula, initial encounter for closed fracture

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140	(ICD9) MALIGNANT NEOPLASM OF UPPER LIP VERMILION BORDER
140.1	(ICD9) MALIGNANT NEOPLASM OF LOWER LIP VERMILION BORDER
140.3	(ICD9) MALIGNANT NEOPLASM OF UPPER LIP INNER ASPECT
140.4	(ICD9) MALIGNANT NEOPLASM OF LOWER LIP INNER ASPECT
140.5	(ICD9) MALIGNANT NEOPLASM OF LIP UNSPECIFIED INNER ASPECT
140.6	(ICD9) MALIGNANT NEOPLASM OF COMMISSURE OF LIP
140.8	(ICD9) MALIGNANT NEOPLASM OF OTHER SITES OF LIP
140.9	(ICD9) MALIGNANT NEOPLASM OF LIP UNSPECIFIED VERMILION BORDER
208	(ICD9) ACUTE LEUKEMIA OF UNSPECIFIED CELL TYPE
208	(ICD9) ACUTE LEUKEMIA OF UNSPECIFIED CELL TYPE WITHOUT MENTION OF HAVING ACHIEVED REMISSION
208.01	(ICD9) ACUTE LEUKEMIA OF UNSPECIFIED CELL TYPE IN REMISSION
208.02	(ICD9) ACUTE LEUKEMIA OF UNSPECIFIED CELL TYPE IN RELAPSE
208.1	(ICD9) CHRONIC LEUKEMIA OF UNSPECIFIED CELL TYPE
208.1	(ICD9) CHRONIC LEUKEMIA OF UNSPECIFIED CELL TYPE WITHOUT MENTION OF HAVING ACHIEVED REMISSION
208.11	(ICD9) CHRONIC LEUKEMIA OF UNSPECIFIED CELL TYPE IN REMISSION
208.12	(ICD9) CHRONIC LEUKEMIA OF UNSPECIFIED CELL TYPE IN RELAPSE
208.2	(ICD9) SUBACUTE LEUKEMIA OF UNSPECIFIED CELL TYPE
208.2	(ICD9) SUBACUTE LEUKEMIA OF UNSPECIFIED CELL TYPE WITHOUT MENTION OF HAVING ACHIEVED
208.21	(ICD9) SUBACUTE LEUKEMIA OF UNSPECIFIED CELL TYPE IN REMISSION
208.22	(ICD9) SUBACUTE LEUKEMIA OF UNSPECIFIED CELL TYPE IN RELAPSE
208.8	(ICD9) OTHER LEUKEMIA OF UNSPECIFIED CELL TYPE
208.8	(ICD9) OTHER LEUKEMIA OF UNSPECIFIED CELL TYPE WITHOUT MENTION OF HAVING ACHIEVED REMISSION
208.81	(ICD9) OTHER LEUKEMIA OF UNSPECIFIED CELL TYPE IN REMISSION
208.82	(ICD9) OTHER LEUKEMIA OF UNSPECIFIED CELL TYPE IN RELAPSE
208.9	(ICD9) UNSPECIFIED LEUKEMIA
208.9	(ICD9) UNSPECIFIED LEUKEMIA WITHOUT MENTION OF HAVING ACHIEVED REMISSION
208.91	(ICD9) UNSPECIFIED LEUKEMIA IN REMISSION
208.92	(ICD9) UNSPECIFIED LEUKEMIA IN RELAPSE
230	(ICD9) CARCINOMA IN SITU OF LIP ORAL CAVITY AND PHARYNX
230.1	(ICD9) CARCINOMA IN SITU OF ESOPHAGUS
230.2	(ICD9) CARCINOMA IN SITU OF STOMACH
230.3	(ICD9) CARCINOMA IN SITU OF COLON

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230.4	(ICD9) CARCINOMA IN SITU OF RECTUM
230.5	(ICD9) CARCINOMA IN SITU OF ANAL CANAL
230.6	(ICD9) CARCINOMA IN SITU OF ANUS UNSPECIFIED
230.7	(ICD9) CARCINOMA IN SITU OF OTHER AND UNSPECIFIED PARTS OF INTESTINE
230.8	(ICD9) CARCINOMA IN SITU OF LIVER AND BILIARY SYSTEM
230.9	(ICD9) CARCINOMA IN SITU OF OTHER AND UNSPECIFIED DIGESTIVE ORGANS
231	(ICD9) CARCINOMA IN SITU OF LARYNX
231.1	(ICD9) CARCINOMA IN SITU OF TRACHEA
231.2	(ICD9) CARCINOMA IN SITU OF BRONCHUS AND LUNG
231.8	(ICD9) CARCINOMA IN SITU OF OTHER SPECIFIED PARTS OF RESPIRATORY SYSTEM
231.9	(ICD9) CARCINOMA IN SITU OF RESPIRATORY SYSTEM PART UNSPECIFIED
232	(ICD9) CARCINOMA IN SITU OF SKIN OF LIP
232.1	(ICD9) CARCINOMA IN SITU OF EYELID INCLUDING CANTHUS
232.2	(ICD9) CARCINOMA IN SITU OF SKIN OF EAR AND EXTERNAL AUDITORY CANAL
232.3	(ICD9) CARCINOMA IN SITU OF SKIN OF OTHER AND UNSPECIFIED PARTS OF FACE
232.4	(ICD9) CARCINOMA IN SITU OF SCALP AND SKIN OF NECK
232.5	(ICD9) CARCINOMA IN SITU OF SKIN OF TRUNK EXCEPT SCROTUM
232.6	(ICD9) CARCINOMA IN SITU OF SKIN OF UPPER LIMB INCLUDING SHOULDER
232.7	(ICD9) CARCINOMA IN SITU OF SKIN OF LOWER LIMB INCLUDING HIP
232.8	(ICD9) CARCINOMA IN SITU OF OTHER SPECIFIED SITES OF SKIN
232.9	(ICD9) CARCINOMA IN SITU OF SKIN SITE UNSPECIFIED
233	(ICD9) CARCINOMA IN SITU OF BREAST
233.1	(ICD9) CARCINOMA IN SITU OF CERVIX UTERI
233.2	(ICD9) CARCINOMA IN SITU OF OTHER AND UNSPECIFIED PARTS OF UTERUS
233.3	(ICD9) CARCINOMA IN SITU OF OTHER AND UNSPECIFIED FEMALE GENITAL ORGANS
233.3	(ICD9) CARCINOMA IN SITU OF UNSPECIFIED FEMALE GENITAL ORGAN
233.31	(ICD9) CARCINOMA IN SITU OF VAGINA
233.32	(ICD9) CARCINOMA IN SITU OF VULVA
233.39	(ICD9) CARCINOMA IN SITU OF OTHER FEMALE GENITAL ORGAN
233.4	(ICD9) CARCINOMA IN SITU OF PROSTATE
233.5	(ICD9) CARCINOMA IN SITU OF PENIS
233.6	(ICD9) CARCINOMA IN SITU OF OTHER AND UNSPECIFIED MALE GENITAL ORGANS
233.7	(ICD9) CARCINOMA IN SITU OF BLADDER

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233.9	(ICD9) CARCINOMA IN SITU OF OTHER AND UNSPECIFIED URINARY ORGANS
234	(ICD9) CARCINOMA IN SITU OF EYE
234.8	(ICD9) CARCINOMA IN SITU OF OTHER SPECIFIED SITES
234.9	(ICD9) CARCINOMA IN SITU SITE UNSPECIFIED
235	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF MAJOR SALIVARY GLANDS
235.1	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF LIP ORAL CAVITY AND PHARYNX
235.2	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF STOMACH INTESTINES AND RECTUM
235.3	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF LIVER AND BILIARY PASSAGES
235.4	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF RETROPERITONEUM AND PERITONEUM
235.5	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF OTHER AND UNSPECIFIED DIGESTIVE ORGANS
235.6	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF LARYNX
235.7	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF TRACHEA BRONCHUS AND LUNG
235.8	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF PLEURA THYMUS AND MEDIASTINUM
235.9	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF OTHER AND UNSPECIFIED RESPIRATORY ORGANS
236	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF UTERUS
236.1	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF PLACENTA
236.2	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF OVARY
236.3	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF OTHER AND UNSPECIFIED FEMALE GENITAL ORGANS
236.4	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF TESTIS
236.5	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF PROSTATE
236.6	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF OTHER AND UNSPECIFIED MALE GENITAL ORGANS
236.7	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF BLADDER
236.9	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF OTHER AND UNSPECIFIED URINARY ORGANS
236.9	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF URINARY ORGAN UNSPECIFIED
236.91	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF KIDNEY AND URETER
236.99	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF OTHER AND UNSPECIFIED URINARY ORGANS
237	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF PITUITARY GLAND AND CRANIOPHARYNGEAL DUCT
237.1	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF PINEAL GLAND
237.2	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF ADRENAL GLAND
237.3	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF PARAGANGLIA
237.4	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF OTHER AND UNSPECIFIED ENDOCRINE GLANDS
237.5	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF BRAIN AND SPINAL CORD
237.6	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF MENINGES

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237.7	(ICD9) NEUROFIBROMATOSIS
237.7	(ICD9) NEUROFIBROMATOSIS UNSPECIFIED
237.71	(ICD9) NEUROFIBROMATOSIS TYPE 1 VON RECKLINGHAUSEN'S DISEASE
237.72	(ICD9) NEUROFIBROMATOSIS TYPE 2 ACOUSTIC NEUROFIBROMATOSIS
237.73	(ICD9) SCHWANNOMATOSIS
237.79	(ICD9) OTHER NEUROFIBROMATOSIS
237.9	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF OTHER AND UNSPECIFIED PARTS OF NERVOUS SYSTEM
238	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF BONE AND ARTICULAR CARTILAGE
238.1	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF CONNECTIVE AND OTHER SOFT TISSUE
238.2	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF SKIN
238.3	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF BREAST
238.4	(ICD9) POLYCYTHEMIA VERA
238.5	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF HISTIOCYTIC AND MAST CELLS
238.6	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF PLASMA CELLS
238.7	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF OTHER LYMPHATIC AND HEMATOPOIETIC TISSUES
238.71	(ICD9) ESSENTIAL THROMBOCYTHEMIA
238.72	(ICD9) LOW GRADE MYELOYDYSPLASTIC SYNDROME LESIONS
238.73	(ICD9) HIGH GRADE MYELOYDYSPLASTIC SYNDROME LESIONS
238.74	(ICD9) MYELOYDYSPLASTIC SYNDROME WITH 5Q DELETION
238.75	(ICD9) MYELOYDYSPLASTIC SYNDROME UNSPECIFIED
238.76	(ICD9) MYELOFIBROSIS WITH MYELOID METAPLASIA
238.77	(ICD9) POST TRANSPLANT LYMPHOPROLIFERATIVE DISORDER (PTLD)
238.79	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF OTHER LYMPHATIC AND HEMATOPOIETIC TISSUES
238.8	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR OF OTHER SPECIFIED SITES
238.9	(ICD9) NEOPLASM OF UNCERTAIN BEHAVIOR SITE UNSPECIFIED
239	(ICD9) NEOPLASM OF UNSPECIFIED NATURE OF DIGESTIVE SYSTEM
239.1	(ICD9) NEOPLASM OF UNSPECIFIED NATURE OF RESPIRATORY SYSTEM
239.2	(ICD9) NEOPLASM OF UNSPECIFIED NATURE OF BONE SOFT TISSUE AND SKIN
239.3	(ICD9) NEOPLASM OF UNSPECIFIED NATURE OF BREAST
239.4	(ICD9) NEOPLASM OF UNSPECIFIED NATURE OF BLADDER
239.5	(ICD9) NEOPLASM OF UNSPECIFIED NATURE OF OTHER GENITOURINARY ORGANS
239.6	(ICD9) NEOPLASM OF UNSPECIFIED NATURE OF BRAIN
239.7	(ICD9) NEOPLASM OF UNSPECIFIED NATURE OF ENDOCRINE GLANDS AND OTHER PARTS OF NERVOUS SYSTEM

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239.8	(ICD9) NEOPLASMS OF UNSPECIFIED NATURE OF OTHER SPECIFIED SITES
239.81	(ICD9) NEOPLASM OF UNSPECIFIED NATURE OF RETINA AND CHOROID
239.89	(ICD9) NEOPLASM OF UNSPECIFIED NATURE OF OTHER SPECIFIED SITES
239.9	(ICD9) NEOPLASM OF UNSPECIFIED NATURE SITE UNSPECIFIED
C00.2	(ICD10) Malignant neoplasm of external lip, unspecified
C00.5	(ICD10) Malignant neoplasm of lip, unspecified, inner aspect
C00.6	(ICD10) Malignant neoplasm of commissure of lip, unspecified
C00.9	(ICD10) Malignant neoplasm of lip, unspecified
C01	(ICD10) Malignant neoplasm of base of tongue
C02.0	(ICD10) Malignant neoplasm of dorsal surface of tongue
C02.1	(ICD10) Malignant neoplasm of border of tongue
C02.2	(ICD10) Malignant neoplasm of ventral surface of tongue
C02.3	(ICD10) Malignant neoplasm of anterior two
C03.0	(ICD10) Malignant neoplasm of upper gum
C03.9	(ICD10) Malignant neoplasm of gum, unspecified
C04.9	(ICD10) Malignant neoplasm of floor of mouth, unspecified
C05.0	(ICD10) Malignant neoplasm of hard palate
C05.2	(ICD10) Malignant neoplasm of uvula
C05.8	(ICD10) Malignant neoplasm of overlapping sites of palate
C06.2	(ICD10) Malignant neoplasm of retromolar area
C08.1	(ICD10) Malignant neoplasm of sublingual gland
C09.1	(ICD10) Malignant neoplasm of tonsillar pillar (anterior) (posterior)
C09.8	(ICD10) Malignant neoplasm of overlapping sites of tonsil
C10.0	(ICD10) Malignant neoplasm of vallecula
C10.1	(ICD10) Malignant neoplasm of anterior surface of epiglottis
C10.3	(ICD10) Malignant neoplasm of posterior wall of oropharynx
C10.4	(ICD10) Malignant neoplasm of branchial cleft
C10.8	(ICD10) Malignant neoplasm of overlapping sites of oropharynx
C10.9	(ICD10) Malignant neoplasm of oropharynx, unspecified
C11.0	(ICD10) Malignant neoplasm of superior wall of nasopharynx
C11.2	(ICD10) Malignant neoplasm of lateral wall of nasopharynx
C11.9	(ICD10) Malignant neoplasm of nasopharynx, unspecified
C12	(ICD10) Malignant neoplasm of pyriform sinus



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C13.1	(ICD10) Malignant neoplasm of aryepiglottic fold, hypopharyngeal aspect
C14.2	(ICD10) Malignant neoplasm of Waldeyer's ring
C14.8	(ICD10) Malignant neoplasm of overlapping sites of lip, oral cavity and pharynx
C15.3	(ICD10) Malignant neoplasm of upper third of esophagus
C15.8	(ICD10) Malignant neoplasm of overlapping sites of esophagus
C16.0	(ICD10) Malignant neoplasm of cardia
C16.2	(ICD10) Malignant neoplasm of body of stomach
C16.3	(ICD10) Malignant neoplasm of pyloric antrum
C16.4	(ICD10) Malignant neoplasm of pylorus
C16.5	(ICD10) Malignant neoplasm of lesser curvature of stomach, unspecified
C16.9	(ICD10) Malignant neoplasm of stomach, unspecified
C17.1	(ICD10) Malignant neoplasm of jejunum
C17.3	(ICD10) Meckel's diverticulum, malignant
C17.9	(ICD10) Malignant neoplasm of small intestine, unspecified
C18.3	(ICD10) Malignant neoplasm of hepatic flexure
C18.5	(ICD10) Malignant neoplasm of splenic flexure
C18.6	(ICD10) Malignant neoplasm of descending colon
C18.7	(ICD10) Malignant neoplasm of sigmoid colon
C18.8	(ICD10) Malignant neoplasm of overlapping sites of colon
C21.8	(ICD10) Malignant neoplasm of overlapping sites of rectum, anus and anal canal
C22.0	(ICD10) Liver cell carcinoma
C22.2	(ICD10) Hepatoblastoma
C22.4	(ICD10) Other sarcomas of liver
C22.7	(ICD10) Other specified carcinomas of liver
C22.8	(ICD10) Malignant neoplasm of liver, primary, unspecified as to type
C22.9	(ICD10) Malignant neoplasm of liver, not specified as primary or secondary
C23	(ICD10) Malignant neoplasm of gallbladder
C25.3	(ICD10) Malignant neoplasm of pancreatic duct
C25.7	(ICD10) Malignant neoplasm of other parts of pancreas
C25.8	(ICD10) Malignant neoplasm of overlapping sites of pancreas
C25.9	(ICD10) Malignant neoplasm of pancreas, unspecified
C31.2	(ICD10) Malignant neoplasm of frontal sinus
C31.8	(ICD10) Malignant neoplasm of overlapping sites of accessory sinuses

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C31.9	(ICD10) Malignant neoplasm of accessory sinus, unspecified
C32.3	(ICD10) Malignant neoplasm of laryngeal cartilage
C34.01	(ICD10) Malignant neoplasm of right main bronchus
C34.02	(ICD10) Malignant neoplasm of left main bronchus
C34.12	(ICD10) Malignant neoplasm of upper lobe, left bronchus or lung
C34.2	(ICD10) Malignant neoplasm of middle lobe, bronchus or lung
C34.32	(ICD10) Malignant neoplasm of lower lobe, left bronchus or lung
C34.80	(ICD10) Malignant neoplasm of overlapping sites of unspecified bronchus and lung
C34.81	(ICD10) Malignant neoplasm of overlapping sites of right bronchus and lung
C34.91	(ICD10) Malignant neoplasm of unspecified part of right bronchus or lung
C34.92	(ICD10) Malignant neoplasm of unspecified part of left bronchus or lung
C38.2	(ICD10) Malignant neoplasm of posterior mediastinum
C38.4	(ICD10) Malignant neoplasm of pleura
C39.0	(ICD10) Malignant neoplasm of upper respiratory tract, part unspecified
C39.9	(ICD10) Malignant neoplasm of lower respiratory tract, part unspecified
C40.00	(ICD10) Malignant neoplasm of scapula and long bones of unspecified upper limb
C40.01	(ICD10) Malignant neoplasm of scapula and long bones of right upper limb
C40.02	(ICD10) Malignant neoplasm of scapula and long bones of left upper limb
C40.10	(ICD10) Malignant neoplasm of short bones of unspecified upper limb
C40.11	(ICD10) Malignant neoplasm of short bones of right upper limb
C40.12	(ICD10) Malignant neoplasm of short bones of left upper limb
C40.20	(ICD10) Malignant neoplasm of long bones of unspecified lower limb
C40.30	(ICD10) Malignant neoplasm of short bones of unspecified lower limb
C40.90	(ICD10) Malignant neoplasm of unspecified bones and articular cartilage of unspecified limb
C40.91	(ICD10) Malignant neoplasm of unspecified bones and articular cartilage of right limb
C40.92	(ICD10) Malignant neoplasm of unspecified bones and articular cartilage of left limb
C43.0	(ICD10) Malignant melanoma of lip
C43.10	(ICD10) Malignant melanoma of unspecified eyelid, including canthus
C43.122	(ICD10) Malignant melanoma of left lower eyelid, including canthus
C43.30	(ICD10) Malignant melanoma of unspecified part of face
C43.31	(ICD10) Malignant melanoma of nose
C43.39	(ICD10) Malignant melanoma of other parts of face
C43.52	(ICD10) Malignant melanoma of skin of breast

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C43.61	(ICD10) Malignant melanoma of right upper limb, including shoulder
C43.62	(ICD10) Malignant melanoma of left upper limb, including shoulder
C43.72	(ICD10) Malignant melanoma of left lower limb, including hip
C43.8	(ICD10) Malignant melanoma of overlapping sites of skin
C43.9	(ICD10) Malignant melanoma of skin, unspecified
C45.0	(ICD10) Mesothelioma of pleura
C45.1	(ICD10) Mesothelioma of peritoneum
C45.2	(ICD10) Mesothelioma of pericardium
C45.7	(ICD10) Mesothelioma of other sites
C46.4	(ICD10) Kaposi's sarcoma of gastrointestinal sites
C46.7	(ICD10) Kaposi's sarcoma of other sites
C46.9	(ICD10) Kaposi's sarcoma, unspecified
C47.10	(ICD10) Malignant neoplasm of peripheral nerves of unspecified upper limb, including shoulder
C47.12	(ICD10) Malignant neoplasm of peripheral nerves of left upper limb, including shoulder
C47.21	(ICD10) Malignant neoplasm of peripheral nerves of right lower limb, including hip
C47.22	(ICD10) Malignant neoplasm of peripheral nerves of left lower limb, including hip
C47.3	(ICD10) Malignant neoplasm of peripheral nerves of thorax
C47.5	(ICD10) Malignant neoplasm of peripheral nerves of pelvis
C47.6	(ICD10) Malignant neoplasm of peripheral nerves of trunk, unspecified
C47.8	(ICD10) Malignant neoplasm of overlapping sites of peripheral nerves and autonomic nervous system
C48.1	(ICD10) Malignant neoplasm of specified parts of peritoneum
C49.11	(ICD10) Malignant neoplasm of connective and soft tissue of right upper limb, including shoulder
C49.20	(ICD10) Malignant neoplasm of connective and soft tissue of unspecified lower limb, including hip
C49.21	(ICD10) Malignant neoplasm of connective and soft tissue of right lower limb, including hip
C49.3	(ICD10) Malignant neoplasm of connective and soft tissue of thorax
C49.6	(ICD10) Malignant neoplasm of connective and soft tissue of trunk, unspecified
C49.8	(ICD10) Malignant neoplasm of overlapping sites of connective and soft tissue
C49.9	(ICD10) Malignant neoplasm of connective and soft tissue, unspecified
C49.A0	(ICD10) Gastrointestinal stromal tumor, unspecified site
C49.A1	(ICD10) Gastrointestinal stromal tumor of esophagus
C49.A3	(ICD10) Gastrointestinal stromal tumor of small intestine
C50.011	(ICD10) Malignant neoplasm of nipple and areola, right female breast
C50.021	(ICD10) Malignant neoplasm of nipple and areola, right male breast

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C50.022	(ICD10) Malignant neoplasm of nipple and areola, left male breast
C50.119	(ICD10) Malignant neoplasm of central portion of unspecified female breast
C50.221	(ICD10) Malignant neoplasm of upper inner quadrant of right male breast
C50.222	(ICD10) Malignant neoplasm of upper inner quadrant of left male breast
C50.229	(ICD10) Malignant neoplasm of upper inner quadrant of unspecified male breast
C50.312	(ICD10) Malignant neoplasm of lower inner quadrant of left female breast
C50.319	(ICD10) Malignant neoplasm of lower inner quadrant of unspecified female breast
C50.321	(ICD10) Malignant neoplasm of lower inner quadrant of right male breast
C50.322	(ICD10) Malignant neoplasm of lower inner quadrant of left male breast
C50.329	(ICD10) Malignant neoplasm of lower inner quadrant of unspecified male breast
C50.411	(ICD10) Malignant neoplasm of upper outer quadrant of right female breast
C50.412	(ICD10) Malignant neoplasm of upper outer quadrant of left female breast
C50.421	(ICD10) Malignant neoplasm of upper outer quadrant of right male breast
C50.429	(ICD10) Malignant neoplasm of upper outer quadrant of unspecified male breast
C50.512	(ICD10) Malignant neoplasm of lower outer quadrant of left female breast
C50.521	(ICD10) Malignant neoplasm of lower outer quadrant of right male breast
C50.529	(ICD10) Malignant neoplasm of lower outer quadrant of unspecified male breast
C50.611	(ICD10) Malignant neoplasm of axillary tail of right female breast
C50.621	(ICD10) Malignant neoplasm of axillary tail of right male breast
C50.629	(ICD10) Malignant neoplasm of axillary tail of unspecified male breast
C50.829	(ICD10) Malignant neoplasm of overlapping sites of unspecified male breast
C50.911	(ICD10) Malignant neoplasm of unspecified site of right female breast
C51.0	(ICD10) Malignant neoplasm of labium majus
C51.1	(ICD10) Malignant neoplasm of labium minus
C51.8	(ICD10) Malignant neoplasm of overlapping sites of vulva
C53.1	(ICD10) Malignant neoplasm of exocervix
C53.8	(ICD10) Malignant neoplasm of overlapping sites of cervix uteri
C53.9	(ICD10) Malignant neoplasm of cervix uteri, unspecified
C54.0	(ICD10) Malignant neoplasm of isthmus uteri
C54.2	(ICD10) Malignant neoplasm of myometrium
C54.3	(ICD10) Malignant neoplasm of fundus uteri
C56.1	(ICD10) Malignant neoplasm of right ovary
C56.2	(ICD10) Malignant neoplasm of left ovary

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C56.9	(ICD10) Malignant neoplasm of unspecified ovary
C57.00	(ICD10) Malignant neoplasm of unspecified fallopian tube
C57.01	(ICD10) Malignant neoplasm of right fallopian tube
C57.21	(ICD10) Malignant neoplasm of right round ligament
C57.4	(ICD10) Malignant neoplasm of uterine adnexa, unspecified
C57.7	(ICD10) Malignant neoplasm of other specified female genital organs
C57.8	(ICD10) Malignant neoplasm of overlapping sites of female genital organs
C57.9	(ICD10) Malignant neoplasm of female genital organ, unspecified
C60.0	(ICD10) Malignant neoplasm of prepuce
C60.1	(ICD10) Malignant neoplasm of glans penis
C60.2	(ICD10) Malignant neoplasm of body of penis
C60.8	(ICD10) Malignant neoplasm of overlapping sites of penis
C60.9	(ICD10) Malignant neoplasm of penis, unspecified
C61	(ICD10) Malignant neoplasm of prostate
C62.00	(ICD10) Malignant neoplasm of unspecified undescended testis
C62.01	(ICD10) Malignant neoplasm of undescended right testis
C62.10	(ICD10) Malignant neoplasm of unspecified descended testis
C62.11	(ICD10) Malignant neoplasm of descended right testis
C62.90	(ICD10) Malignant neoplasm of unspecified testis, unspecified whether descended or undescended
C62.91	(ICD10) Malignant neoplasm of right testis, unspecified whether descended or undescended
C62.92	(ICD10) Malignant neoplasm of left testis, unspecified whether descended or undescended
C63.00	(ICD10) Malignant neoplasm of unspecified epididymis
C63.01	(ICD10) Malignant neoplasm of right epididymis
C63.02	(ICD10) Malignant neoplasm of left epididymis
C63.11	(ICD10) Malignant neoplasm of right spermatic cord
C63.7	(ICD10) Malignant neoplasm of other specified male genital organs
C63.8	(ICD10) Malignant neoplasm of overlapping sites of male genital organs
C64.1	(ICD10) Malignant neoplasm of right kidney, except renal pelvis
C65.1	(ICD10) Malignant neoplasm of right renal pelvis
C65.9	(ICD10) Malignant neoplasm of unspecified renal pelvis
C66.2	(ICD10) Malignant neoplasm of left ureter
C67.0	(ICD10) Malignant neoplasm of trigone of bladder
C67.5	(ICD10) Malignant neoplasm of bladder neck

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C67.6	(ICD10) Malignant neoplasm of ureteric orifice
C67.7	(ICD10) Malignant neoplasm of urachus
C67.8	(ICD10) Malignant neoplasm of overlapping sites of bladder
C69.02	(ICD10) Malignant neoplasm of left conjunctiva
C69.10	(ICD10) Malignant neoplasm of unspecified cornea
C69.11	(ICD10) Malignant neoplasm of right cornea
C69.12	(ICD10) Malignant neoplasm of left cornea
C69.20	(ICD10) Malignant neoplasm of unspecified retina
C69.21	(ICD10) Malignant neoplasm of right retina
C69.22	(ICD10) Malignant neoplasm of left retina
C69.32	(ICD10) Malignant neoplasm of left choroid
C69.40	(ICD10) Malignant neoplasm of unspecified ciliary body
C69.50	(ICD10) Malignant neoplasm of unspecified lacrimal gland and duct
C69.52	(ICD10) Malignant neoplasm of left lacrimal gland and duct
C69.61	(ICD10) Malignant neoplasm of right orbit
C69.62	(ICD10) Malignant neoplasm of left orbit
C69.82	(ICD10) Malignant neoplasm of overlapping sites of left eye and adnexa
C69.90	(ICD10) Malignant neoplasm of unspecified site of unspecified eye
C70.0	(ICD10) Malignant neoplasm of cerebral meninges
C70.9	(ICD10) Malignant neoplasm of meninges, unspecified
C71.0	(ICD10) Malignant neoplasm of cerebrum, except lobes and ventricles
C71.1	(ICD10) Malignant neoplasm of frontal lobe
C71.8	(ICD10) Malignant neoplasm of overlapping sites of brain
C71.9	(ICD10) Malignant neoplasm of brain, unspecified
C72.1	(ICD10) Malignant neoplasm of cauda equina
C72.22	(ICD10) Malignant neoplasm of left olfactory nerve
C72.30	(ICD10) Malignant neoplasm of unspecified optic nerve
C72.31	(ICD10) Malignant neoplasm of right optic nerve
C72.32	(ICD10) Malignant neoplasm of left optic nerve
C72.40	(ICD10) Malignant neoplasm of unspecified acoustic nerve
C72.50	(ICD10) Malignant neoplasm of unspecified cranial nerve
C72.59	(ICD10) Malignant neoplasm of other cranial nerves
C74.00	(ICD10) Malignant neoplasm of cortex of unspecified adrenal gland

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C74.01	(ICD10) Malignant neoplasm of cortex of right adrenal gland
C74.11	(ICD10) Malignant neoplasm of medulla of right adrenal gland
C74.12	(ICD10) Malignant neoplasm of medulla of left adrenal gland
C74.91	(ICD10) Malignant neoplasm of unspecified part of right adrenal gland
C75.0	(ICD10) Malignant neoplasm of parathyroid gland
C75.3	(ICD10) Malignant neoplasm of pineal gland
C75.4	(ICD10) Malignant neoplasm of carotid body
C76.0	(ICD10) Malignant neoplasm of head, face and neck
C76.1	(ICD10) Malignant neoplasm of thorax
C76.2	(ICD10) Malignant neoplasm of abdomen
C76.4	(ICD10) Malignant neoplasm of upper limb
C76.40	(ICD10) Malignant neoplasm of unspecified upper limb
C76.41	(ICD10) Malignant neoplasm of right upper limb
C76.42	(ICD10) Malignant neoplasm of left upper limb
C77.3	(ICD10) Secondary and unspecified malignant neoplasm of axilla and upper limb lymph nodes
C77.4	(ICD10) Secondary and unspecified malignant neoplasm of inguinal and lower limb lymph nodes
C77.8	(ICD10) Secondary and unspecified malignant neoplasm of lymph nodes of multiple regions
C78.00	(ICD10) Secondary malignant neoplasm of unspecified lung
C78.39	(ICD10) Secondary malignant neoplasm of other respiratory organs
C78.4	(ICD10) Secondary malignant neoplasm of small intestine
C78.5	(ICD10) Secondary malignant neoplasm of large intestine and rectum
C78.7	(ICD10) Secondary malignant neoplasm of liver and intrahepatic bile duct
C78.8	(ICD10) Secondary malignant neoplasm of other and unspecified digestive organs
C78.80	(ICD10) Secondary malignant neoplasm of unspecified digestive organ
C79.11	(ICD10) Secondary malignant neoplasm of bladder
C79.31	(ICD10) Secondary malignant neoplasm of brain
C79.32	(ICD10) Secondary malignant neoplasm of cerebral meninges
C79.40	(ICD10) Secondary malignant neoplasm of unspecified part of nervous system
C79.52	(ICD10) Secondary malignant neoplasm of bone marrow
C79.60	(ICD10) Secondary malignant neoplasm of unspecified ovary
C79.61	(ICD10) Secondary malignant neoplasm of right ovary
C79.71	(ICD10) Secondary malignant neoplasm of right adrenal gland
C79.82	(ICD10) Secondary malignant neoplasm of genital organs

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C79.89	(ICD10) Secondary malignant neoplasm of other specified sites
C79.9	(ICD10) Secondary malignant neoplasm of unspecified site
C7A.00	(ICD10) Malignant carcinoid tumor of unspecified site
C7A.010	(ICD10) Malignant carcinoid tumor of the duodenum
C7A.011	(ICD10) Malignant carcinoid tumor of the jejunum
C7A.019	(ICD10) Malignant carcinoid tumor of the small intestine, unspecified portion
C7A.020	(ICD10) Malignant carcinoid tumor of the appendix
C7A.021	(ICD10) Malignant carcinoid tumor of the cecum
C7A.024	(ICD10) Malignant carcinoid tumor of the descending colon
C7A.025	(ICD10) Malignant carcinoid tumor of the sigmoid colon
C7A.026	(ICD10) Malignant carcinoid tumor of the rectum
C7A.09	(ICD10) Malignant carcinoid tumors of other sites
C7A.090	(ICD10) Malignant carcinoid tumor of the bronchus and lung
C7A.091	(ICD10) Malignant carcinoid tumor of the thymus
C7A.092	(ICD10) Malignant carcinoid tumor of the stomach
C7A.093	(ICD10) Malignant carcinoid tumor of the kidney
C7A.094	(ICD10) Malignant carcinoid tumor of the foregut, unspecified
C7A.096	(ICD10) Malignant carcinoid tumor of the hindgut, unspecified
C7A.098	(ICD10) Malignant carcinoid tumors of other sites
C7A.1	(ICD10) Malignant poorly differentiated neuroendocrine tumors
C7A.8	(ICD10) Other malignant neuroendocrine tumors
C7B	(ICD10) Secondary neuroendocrine tumors
C7B.03	(ICD10) Secondary carcinoid tumors of bone
C80.1	(ICD10) Malignant (primary) neoplasm, unspecified
C80.2	(ICD10) Malignant neoplasm associated with transplanted organ
C81.00	(ICD10) Nodular lymphocyte predominant Hodgkin lymphoma, unspecified site
C81.01	(ICD10) Nodular lymphocyte predominant Hodgkin lymphoma, lymph nodes of head, face, and neck
C81.03	(ICD10) Nodular lymphocyte predominant Hodgkin lymphoma, intra-abdominal lymph nodes
C81.04	(ICD10) Nodular lymphocyte predominant Hodgkin lymphoma, lymph nodes of axilla and upper limb
C81.08	(ICD10) Nodular lymphocyte predominant Hodgkin lymphoma, lymph nodes of multiple sites
C81.11	(ICD10) Nodular sclerosis Hodgkin lymphoma, lymph nodes of head, face, and neck
C81.12	(ICD10) Nodular sclerosis Hodgkin lymphoma, intrathoracic lymph nodes
C81.14	(ICD10) Nodular sclerosis Hodgkin lymphoma, lymph nodes of axilla and upper limb



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C81.15	(ICD10) Nodular sclerosis Hodgkin lymphoma, lymph nodes of inguinal region and lower limb
C81.16	(ICD10) Nodular sclerosis Hodgkin lymphoma, intrapelvic lymph nodes
C81.20	(ICD10) Mixed cellularity Hodgkin lymphoma, unspecified site
C81.21	(ICD10) Mixed cellularity Hodgkin lymphoma, lymph nodes of head, face, and neck
C81.22	(ICD10) Mixed cellularity Hodgkin lymphoma, intrathoracic lymph nodes
C81.23	(ICD10) Mixed cellularity Hodgkin lymphoma, intra-abdominal lymph nodes
C81.24	(ICD10) Mixed cellularity Hodgkin lymphoma, lymph nodes of axilla and upper limb
C81.26	(ICD10) Mixed cellularity Hodgkin lymphoma, intrapelvic lymph nodes
C81.28	(ICD10) Mixed cellularity Hodgkin lymphoma, lymph nodes of multiple sites
C81.29	(ICD10) Mixed cellularity Hodgkin lymphoma, extranodal and solid organ sites
C81.32	(ICD10) Lymphocyte depleted Hodgkin lymphoma, intrathoracic lymph nodes
C81.33	(ICD10) Lymphocyte depleted Hodgkin lymphoma, intra-abdominal lymph nodes
C81.36	(ICD10) Lymphocyte depleted Hodgkin lymphoma, intrapelvic lymph nodes
C81.37	(ICD10) Lymphocyte depleted Hodgkin lymphoma, spleen
C81.40	(ICD10) Lymphocyte rich Hodgkin lymphoma, unspecified site
C81.42	(ICD10) Lymphocyte rich Hodgkin lymphoma, intrathoracic lymph nodes
C81.44	(ICD10) Lymphocyte rich Hodgkin lymphoma, lymph nodes of axilla and upper limb
C81.45	(ICD10) Lymphocyte rich Hodgkin lymphoma, lymph nodes of inguinal region and lower limb
C81.46	(ICD10) Lymphocyte rich Hodgkin lymphoma, intrapelvic lymph nodes
C81.47	(ICD10) Lymphocyte rich Hodgkin lymphoma, spleen
C81.48	(ICD10) Lymphocyte rich Hodgkin lymphoma, lymph nodes of multiple sites
C81.49	(ICD10) Lymphocyte rich Hodgkin lymphoma, extranodal and solid organ sites
C81.71	(ICD10) Other Hodgkin lymphoma, lymph nodes of head, face, and neck
C81.72	(ICD10) Other Hodgkin lymphoma, intrathoracic lymph nodes
C81.76	(ICD10) Other Hodgkin lymphoma, intrapelvic lymph nodes
C81.78	(ICD10) Other Hodgkin lymphoma, lymph nodes of multiple sites
C81.79	(ICD10) Other Hodgkin lymphoma, extranodal and solid organ sites
C81.90	(ICD10) Hodgkin lymphoma, unspecified, unspecified site
C81.91	(ICD10) Hodgkin lymphoma, unspecified, lymph nodes of head, face, and neck
C81.94	(ICD10) Hodgkin lymphoma, unspecified, lymph nodes of axilla and upper limb
C81.95	(ICD10) Hodgkin lymphoma, unspecified, lymph nodes of inguinal region and lower limb
C81.97	(ICD10) Hodgkin lymphoma, unspecified, spleen
C81.98	(ICD10) Hodgkin lymphoma, unspecified, lymph nodes of multiple sites

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C81.99	(ICD10) Hodgkin lymphoma, unspecified, extranodal and solid organ sites
C82.00	(ICD10) Follicular lymphoma grade I, unspecified site
C82.01	(ICD10) Follicular lymphoma grade I, lymph nodes of head, face, and neck
C82.03	(ICD10) Follicular lymphoma grade I, intra-abdominal lymph nodes
C82.06	(ICD10) Follicular lymphoma grade I, intrapelvic lymph nodes
C82.07	(ICD10) Follicular lymphoma grade I, spleen
C82.08	(ICD10) Follicular lymphoma grade I, lymph nodes of multiple sites
C82.10	(ICD10) Follicular lymphoma grade II, unspecified site
C82.11	(ICD10) Follicular lymphoma grade II, lymph nodes of head, face, and neck
C82.14	(ICD10) Follicular lymphoma grade II, lymph nodes of axilla and upper limb
C82.15	(ICD10) Follicular lymphoma grade II, lymph nodes of inguinal region and lower limb
C82.16	(ICD10) Follicular lymphoma grade II, intrapelvic lymph nodes
C82.19	(ICD10) Follicular lymphoma grade II, extranodal and solid organ sites
C82.20	(ICD10) Follicular lymphoma grade III, unspecified, unspecified site
C82.21	(ICD10) Follicular lymphoma grade III, unspecified, lymph nodes of head, face, and neck
C82.25	(ICD10) Follicular lymphoma grade III, unspecified, lymph nodes of inguinal region and lower limb
C82.26	(ICD10) Follicular lymphoma grade III, unspecified, intrapelvic lymph nodes
C82.28	(ICD10) Follicular lymphoma grade III, unspecified, lymph nodes of multiple sites
C82.30	(ICD10) Follicular lymphoma grade IIIa, unspecified site
C82.31	(ICD10) Follicular lymphoma grade IIIa, lymph nodes of head, face, and neck
C82.32	(ICD10) Follicular lymphoma grade IIIa, intrathoracic lymph nodes
C82.34	(ICD10) Follicular lymphoma grade IIIa, lymph nodes of axilla and upper limb
C82.35	(ICD10) Follicular lymphoma grade IIIa, lymph nodes of inguinal region and lower limb
C82.43	(ICD10) Follicular lymphoma grade IIIb, intra-abdominal lymph nodes
C82.44	(ICD10) Follicular lymphoma grade IIIb, lymph nodes of axilla and upper limb
C82.46	(ICD10) Follicular lymphoma grade IIIb, intrapelvic lymph nodes
C82.48	(ICD10) Follicular lymphoma grade IIIb, lymph nodes of multiple sites
C82.49	(ICD10) Follicular lymphoma grade IIIb, extranodal and solid organ sites
C82.84	(ICD10) Other types of follicular lymphoma, lymph nodes of axilla and upper limb
C82.88	(ICD10) Other types of follicular lymphoma, lymph nodes of multiple sites
C82.89	(ICD10) Other types of follicular lymphoma, extranodal and solid organ sites
C82.90	(ICD10) Follicular lymphoma, unspecified, unspecified site
C82.91	(ICD10) Follicular lymphoma, unspecified, lymph nodes of head, face, and neck

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C82.93	(ICD10) Follicular lymphoma, unspecified, intra-abdominal lymph nodes
C82.95	(ICD10) Follicular lymphoma, unspecified, lymph nodes of inguinal region and lower limb
C83.00	(ICD10) Small cell B cell lymphoma, unspecified site
C83.02	(ICD10) Small cell B cell lymphoma, intrathoracic lymph nodes
C83.03	(ICD10) Small cell B cell lymphoma, intra
C83.04	(ICD10) Small cell B cell lymphoma, lymph nodes of axilla and upper limb
C83.05	(ICD10) Small cell B cell lymphoma, lymph nodes of inguinal region and lower limb
C83.08	(ICD10) Small cell B cell lymphoma, lymph nodes of multiple sites
C83.09	(ICD10) Small cell B cell lymphoma, extranodal and solid organ sites
C83.10	(ICD10) Mantle cell lymphoma, unspecified site
C83.11	(ICD10) Mantle cell lymphoma, lymph nodes of head, face, and neck
C83.12	(ICD10) Mantle cell lymphoma, intrathoracic lymph nodes
C83.15	(ICD10) Mantle cell lymphoma, lymph nodes of inguinal region and lower limb
C83.16	(ICD10) Mantle cell lymphoma, intrapelvic lymph nodes
C83.19	(ICD10) Mantle cell lymphoma, extranodal and solid organ sites
C83.30	(ICD10) Diffuse large B cell lymphoma, unspecified site
C83.31	(ICD10) Diffuse large B cell lymphoma, lymph nodes of head, face, and neck
C83.33	(ICD10) Diffuse large B cell lymphoma, intra
C83.34	(ICD10) Diffuse large B cell lymphoma, lymph nodes of axilla and upper limb
C83.55	(ICD10) Lymphoblastic (diffuse) lymphoma, lymph nodes of inguinal region and lower limb
C83.56	(ICD10) Lymphoblastic (diffuse) lymphoma, intrapelvic lymph nodes
C83.59	(ICD10) Lymphoblastic (diffuse) lymphoma, extranodal and solid organ sites
C83.71	(ICD10) Burkitt lymphoma, lymph nodes of head, face, and neck
C83.76	(ICD10) Burkitt lymphoma, intrapelvic lymph nodes
C83.77	(ICD10) Burkitt lymphoma, spleen
C83.78	(ICD10) Burkitt lymphoma, lymph nodes of multiple sites
C83.80	(ICD10) Other non follicular lymphoma, unspecified site
C83.81	(ICD10) Other non follicular lymphoma, lymph nodes of head, face, and neck
C83.82	(ICD10) Other non follicular lymphoma, intrathoracic lymph nodes
C83.84	(ICD10) Other non follicular lymphoma, lymph nodes of axilla and upper limb
C83.85	(ICD10) Other non follicular lymphoma, lymph nodes of inguinal region and lower limb
C83.89	(ICD10) Other non follicular lymphoma, extranodal and solid organ sites
C83.90	(ICD10) Non follicular (diffuse) lymphoma, unspecified, unspecified site

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C83.91	(ICD10) Non follicular (diffuse) lymphoma, unspecified, lymph nodes of head, face, and neck
C83.94	(ICD10) Non follicular (diffuse) lymphoma, unspecified, lymph nodes of axilla and upper limb
C83.96	(ICD10) Non follicular (diffuse) lymphoma, unspecified, intrapelvic lymph nodes
C83.97	(ICD10) Non follicular (diffuse) lymphoma, unspecified, spleen
C83.98	(ICD10) Non follicular (diffuse) lymphoma, unspecified, lymph nodes of multiple sites
C84.00	(ICD10) Mycosis fungoides, unspecified site
C84.01	(ICD10) Mycosis fungoides, lymph nodes of head, face, and neck
C84.02	(ICD10) Mycosis fungoides, intrathoracic lymph nodes
C84.05	(ICD10) Mycosis fungoides, lymph nodes of inguinal region and lower limb
C84.06	(ICD10) Mycosis fungoides, intrapelvic lymph nodes
C84.08	(ICD10) Mycosis fungoides, lymph nodes of multiple sites
C84.09	(ICD10) Mycosis fungoides, extranodal and solid organ sites
C84.11	(ICD10) Sezary disease, lymph nodes of head, face, and neck
C84.14	(ICD10) Sezary disease, lymph nodes of axilla and upper limb
C84.16	(ICD10) Sezary disease, intrapelvic lymph nodes
C84.17	(ICD10) Sezary disease, spleen
C84.19	(ICD10) Sezary disease, extranodal and solid organ sites
C84.40	(ICD10) Peripheral T cell lymphoma, not classified, unspecified site
C84.42	(ICD10) Peripheral T cell lymphoma, not classified, intrathoracic lymph nodes
C84.43	(ICD10) Peripheral T cell lymphoma, not classified, intra
C84.46	(ICD10) Peripheral T cell lymphoma, not classified, intrapelvic lymph nodes
C84.49	(ICD10) Peripheral T cell lymphoma, not classified, extranodal and solid organ sites
C84.60	(ICD10) Anaplastic large cell lymphoma, ALK positive, unspecified site
C84.61	(ICD10) Anaplastic large cell lymphoma, ALK positive, lymph nodes of head, face, and neck
C84.62	(ICD10) Anaplastic large cell lymphoma, ALK positive, intrathoracic lymph nodes
C84.66	(ICD10) Anaplastic large cell lymphoma, ALK positive, intrapelvic lymph nodes
C84.67	(ICD10) Anaplastic large cell lymphoma, ALK positive, spleen
C84.68	(ICD10) Anaplastic large cell lymphoma, ALK positive, lymph nodes of multiple sites
C84.70	(ICD10) Anaplastic large cell lymphoma, ALK negative, unspecified site
C84.71	(ICD10) Anaplastic large cell lymphoma, ALK negative, lymph nodes of head, face, and neck
C84.79	(ICD10) Anaplastic large cell lymphoma, ALK negative, extranodal and solid organ sites
C84.90	(ICD10) Mature T/NK cell lymphomas, unspecified, unspecified site
C84.91	(ICD10) Mature T/NK cell lymphomas, unspecified, lymph nodes of head, face, and neck

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C84.92	(ICD10) Mature T/NK cell lymphomas, unspecified, intrathoracic lymph nodes
C84.93	(ICD10) Mature T/NK cell lymphomas, unspecified, intra
C84.A0	(ICD10) Cutaneous T cell lymphoma, unspecified, unspecified site
C84.A1	(ICD10) Cutaneous T cell lymphoma, unspecified lymph nodes of head, face, and neck
C84.A2	(ICD10) Cutaneous T cell lymphoma, unspecified, intrathoracic lymph nodes
C84.A3	(ICD10) Cutaneous T cell lymphoma, unspecified, intra
C84.A4	(ICD10) Cutaneous T cell lymphoma, unspecified, lymph nodes of axilla and upper limb
C84.A5	(ICD10) Cutaneous T cell lymphoma, unspecified, lymph nodes of inguinal region and lower limb
C84.A6	(ICD10) Cutaneous T cell lymphoma, unspecified, intrapelvic lymph nodes
C84.A9	(ICD10) Cutaneous T cell lymphoma, unspecified, extranodal and solid organ sites
C84.Z2	(ICD10) Other mature T/NK cell lymphomas, intrathoracic lymph nodes
C84.Z3	(ICD10) Other mature T/NK cell lymphomas, intra
C84.Z5	(ICD10) Other mature T/NK cell lymphomas, lymph nodes of inguinal region and lower limb
C84.Z7	(ICD10) Other mature T/NK cell lymphomas, spleen
C85.10	(ICD10) Unspecified B cell lymphoma, unspecified site
C85.14	(ICD10) Unspecified B cell lymphoma, lymph nodes of axilla and upper limb
C85.15	(ICD10) Unspecified B cell lymphoma, lymph nodes of inguinal region and lower limb
C85.17	(ICD10) Unspecified B cell lymphoma, spleen
C85.18	(ICD10) Unspecified B cell lymphoma, lymph nodes of multiple sites
C85.19	(ICD10) Unspecified B cell lymphoma, extranodal and solid organ sites
C85.20	(ICD10) Mediastinal (thymic) large B cell lymphoma, unspecified site
C85.21	(ICD10) Mediastinal (thymic) large B cell lymphoma, lymph nodes of head, face, and neck
C85.22	(ICD10) Mediastinal (thymic) large B cell lymphoma, intrathoracic lymph nodes
C85.25	(ICD10) Mediastinal (thymic) large B cell lymphoma, lymph nodes of inguinal region and lower limb
C85.81	(ICD10) Other specified types of non Hodgkin lymphoma, lymph nodes of head, face, and neck
C85.82	(ICD10) Other specified types of non Hodgkin lymphoma, intrathoracic lymph nodes
C85.83	(ICD10) Other specified types of non Hodgkin lymphoma, intra
C85.86	(ICD10) Other specified types of non Hodgkin lymphoma, intrapelvic lymph nodes
C85.88	(ICD10) Other specified types of non Hodgkin lymphoma, lymph nodes of multiple sites
C85.89	(ICD10) Other specified types of non Hodgkin lymphoma, extranodal and solid organ sites
C85.92	(ICD10) Non Hodgkin lymphoma, unspecified, intrathoracic lymph nodes
C85.93	(ICD10) Non Hodgkin lymphoma, unspecified, intra
C85.96	(ICD10) Non Hodgkin lymphoma, unspecified, intrapelvic lymph nodes

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C85.97	(ICD10) Non Hodgkin lymphoma, unspecified, spleen
C85.98	(ICD10) Non Hodgkin lymphoma, unspecified, lymph nodes of multiple sites
C85.99	(ICD10) Non Hodgkin lymphoma, unspecified, extranodal and solid organ sites
C86.0	(ICD10) Extranodal NK/T cell lymphoma, nasal type
C86.1	(ICD10) Hepatosplenic T cell lymphoma
C86.3	(ICD10) Subcutaneous panniculitis-like T-cell lymphoma
C86.5	(ICD10) Angioimmunoblastic T-cell lymphoma
C86.6	(ICD10) Primary cutaneous CD30-positive T-cell proliferations
C88.2	(ICD10) Heavy chain disease
C88.3	(ICD10) Immunoproliferative small intestinal disease
C88.8	(ICD10) Other malignant immunoproliferative diseases
C88.9	(ICD10) Malignant immunoproliferative disease, unspecified
C90.02	(ICD10) Multiple myeloma in relapse
C90.10	(ICD10) Plasma cell leukemia not having achieved remission
C90.11	(ICD10) Plasma cell leukemia in remission
C90.22	(ICD10) Extramedullary plasmacytoma in relapse
C90.30	(ICD10) Solitary plasmacytoma not having achieved remission
C91.01	(ICD10) Acute lymphoblastic leukemia, in remission
C91.10	(ICD10) Chronic lymphocytic leukemia of B-cell type not having achieved remission
C91.32	(ICD10) Prolymphocytic leukemia of B-cell type, in relapse
C91.50	(ICD10) Adult T-cell lymphoma/leukemia (HTLV-1-associated) not having achieved remission
C91.51	(ICD10) Adult T-cell lymphoma/leukemia (HTLV-1-associated), in remission
C91.52	(ICD10) Adult T-cell lymphoma/leukemia (HTLV-1-associated), in relapse
C91.62	(ICD10) Prolymphocytic leukemia of T-cell type, in relapse
C91.90	(ICD10) Lymphoid leukemia, unspecified not having achieved remission
C91.92	(ICD10) Lymphoid leukemia, unspecified, in relapse
C91.A0	(ICD10) Mature B-cell leukemia Burkitt-type not having achieved remission
C91.A2	(ICD10) Mature B-cell leukemia Burkitt-type, in relapse
C92.11	(ICD10) Chronic myeloid leukemia, BCR/ABL-positive, in remission
C92.12	(ICD10) Chronic myeloid leukemia, BCR/ABL-positive, in relapse
C92.41	(ICD10) Acute promyelocytic leukemia, in remission
C92.42	(ICD10) Acute promyelocytic leukemia, in relapse
C92.51	(ICD10) Acute myelomonocytic leukemia, in remission

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C92.52	(ICD10) Acute myelomonocytic leukemia, in relapse
C92.60	(ICD10) Acute myeloid leukemia with 11q23-abnormality not having achieved remission
C92.62	(ICD10) Acute myeloid leukemia with 11q23-abnormality in relapse
C92.90	(ICD10) Myeloid leukemia, unspecified, not having achieved remission
C92.A0	(ICD10) Acute myeloid leukemia with multilineage dysplasia, not having achieved remission
C92.A1	(ICD10) Acute myeloid leukemia with multilineage dysplasia, in remission
C92.Z0	(ICD10) Other myeloid leukemia not having achieved remission
C92.Z1	(ICD10) Other myeloid leukemia, in remission
C93.00	(ICD10) Acute monoblastic/monocytic leukemia, not having achieved remission
C93.01	(ICD10) Acute monoblastic/monocytic leukemia, in remission
C93.11	(ICD10) Chronic myelomonocytic leukemia, in remission
C93.32	(ICD10) Juvenile myelomonocytic leukemia, in relapse
C93.90	(ICD10) Monocytic leukemia, unspecified, not having achieved remission
C93.Z1	(ICD10) Other monocytic leukemia, in remission
C94.00	(ICD10) Acute erythroid leukemia, not having achieved remission
C94.02	(ICD10) Acute erythroid leukemia, in relapse
C94.21	(ICD10) Acute megakaryoblastic leukemia, in remission
C94.22	(ICD10) Acute megakaryoblastic leukemia, in relapse
C94.40	(ICD10) Acute panmyelosis with myelofibrosis not having achieved remission
C94.41	(ICD10) Acute panmyelosis with myelofibrosis, in remission
C94.42	(ICD10) Acute panmyelosis with myelofibrosis, in relapse
C94.81	(ICD10) Other specified leukemias, in remission
C94.82	(ICD10) Other specified leukemias, in relapse
C95.01	(ICD10) Acute leukemia of unspecified cell type, in remission
C95.12	(ICD10) Chronic leukemia of unspecified cell type, in relapse
C95.90	(ICD10) Leukemia, unspecified not having achieved remission
C95.91	(ICD10) Leukemia, unspecified, in remission
C95.92	(ICD10) Leukemia, unspecified, in relapse
C96.4	(ICD10) Sarcoma of dendritic cells (accessory cells)
C96.5	(ICD10) Multifocal and unisystemic Langerhans-cell histiocytosis
C96.6	(ICD10) Unifocal Langerhans-cell histiocytosis
C96.9	(ICD10) Malignant neoplasm of lymphoid, hematopoietic and related tissue, unspecified
D45	(ICD10) Polycythemia vera

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C00.0	(ICD10) Malignant neoplasm of external upper lip
C00.1	(ICD10) Malignant neoplasm of external lower lip
C00.3	(ICD10) Malignant neoplasm of upper lip, inner aspect
C00.4	(ICD10) Malignant neoplasm of lower lip, inner aspect
C00.8	(ICD10) Malignant neoplasm of overlapping sites of lip
C02.4	(ICD10) Malignant neoplasm of lingual tonsil
C02.8	(ICD10) Malignant neoplasm of overlapping sites of tongue
C02.9	(ICD10) Malignant neoplasm of tongue, unspecified
C03.1	(ICD10) Malignant neoplasm of lower gum
C04.0	(ICD10) Malignant neoplasm of anterior floor of mouth
C04.1	(ICD10) Malignant neoplasm of lateral floor of mouth
C04.8	(ICD10) Malignant neoplasm of overlapping sites of floor of mouth
C05.1	(ICD10) Malignant neoplasm of soft palate
C05.9	(ICD10) Malignant neoplasm of palate, unspecified
C06.0	(ICD10) Malignant neoplasm of cheek mucosa
C06.1	(ICD10) Malignant neoplasm of vestibule of mouth
C06.80	(ICD10) Malignant neoplasm of overlapping sites of unspecified parts of mouth
C06.89	(ICD10) Malignant neoplasm of overlapping sites of other parts of mouth
C06.9	(ICD10) Malignant neoplasm of mouth, unspecified
C07	(ICD10) Malignant neoplasm of parotid gland
C08.0	(ICD10) Malignant neoplasm of submandibular gland
C08.9	(ICD10) Malignant neoplasm of major salivary gland, unspecified
C09.0	(ICD10) Malignant neoplasm of tonsillar fossa
C09.9	(ICD10) Malignant neoplasm of tonsil, unspecified
C10.2	(ICD10) Malignant neoplasm of lateral wall of oropharynx
C11.1	(ICD10) Malignant neoplasm of posterior wall of nasopharynx
C11.3	(ICD10) Malignant neoplasm of anterior wall of nasopharynx
C11.8	(ICD10) Malignant neoplasm of overlapping sites of nasopharynx
C13.0	(ICD10) Malignant neoplasm of postcricoid region
C13.2	(ICD10) Malignant neoplasm of posterior wall of hypopharynx
C13.8	(ICD10) Malignant neoplasm of overlapping sites of hypopharynx
C13.9	(ICD10) Malignant neoplasm of hypopharynx, unspecified
C14.0	(ICD10) Malignant neoplasm of pharynx, unspecified



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C15.4	(ICD10) Malignant neoplasm of middle third of esophagus
C15.5	(ICD10) Malignant neoplasm of lower third of esophagus
C15.9	(ICD10) Malignant neoplasm of esophagus, unspecified
C16.1	(ICD10) Malignant neoplasm of fundus of stomach
C16.6	(ICD10) Malignant neoplasm of greater curvature of stomach, unspecified
C16.8	(ICD10) Malignant neoplasm of overlapping sites of stomach
C17.0	(ICD10) Malignant neoplasm of duodenum
C17.2	(ICD10) Malignant neoplasm of ileum
C17.8	(ICD10) Malignant neoplasm of overlapping sites of small intestine
C18.0	(ICD10) Malignant neoplasm of cecum
C18.1	(ICD10) Malignant neoplasm of appendix
C18.2	(ICD10) Malignant neoplasm of ascending colon
C18.4	(ICD10) Malignant neoplasm of transverse colon
C18.9	(ICD10) Malignant neoplasm of colon, unspecified
C19	(ICD10) Malignant neoplasm of rectosigmoid junction
C20	(ICD10) Malignant neoplasm of rectum
C21.0	(ICD10) Malignant neoplasm of anus, unspecified
C21.1	(ICD10) Malignant neoplasm of anal canal
C21.2	(ICD10) Malignant neoplasm of cloacogenic zone
C22.1	(ICD10) Intrahepatic bile duct carcinoma
C22.3	(ICD10) Angiosarcoma of liver
C24.0	(ICD10) Malignant neoplasm of extrahepatic bile duct
C24.1	(ICD10) Malignant neoplasm of ampulla of Vater
C24.8	(ICD10) Malignant neoplasm of overlapping sites of biliary tract
C24.9	(ICD10) Malignant neoplasm of biliary tract, unspecified
C25.0	(ICD10) Malignant neoplasm of head of pancreas
C25.1	(ICD10) Malignant neoplasm of body of pancreas
C25.2	(ICD10) Malignant neoplasm of tail of pancreas
C25.4	(ICD10) Malignant neoplasm of endocrine pancreas
C26.0	(ICD10) Malignant neoplasm of intestinal tract, part unspecified
C26.1	(ICD10) Malignant neoplasm of spleen
C26.9	(ICD10) Malignant neoplasm of ill-defined sites within the digestive system
C30.0	(ICD10) Malignant neoplasm of nasal cavity

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C30.1	(ICD10) Malignant neoplasm of middle ear
C31.0	(ICD10) Malignant neoplasm of maxillary sinus
C31.1	(ICD10) Malignant neoplasm of ethmoidal sinus
C31.3	(ICD10) Malignant neoplasm of sphenoid sinus
C32.0	(ICD10) Malignant neoplasm of glottis
C32.1	(ICD10) Malignant neoplasm of supraglottis
C32.2	(ICD10) Malignant neoplasm of subglottis
C32.8	(ICD10) Malignant neoplasm of overlapping sites of larynx
C32.9	(ICD10) Malignant neoplasm of larynx, unspecified
C33	(ICD10) Malignant neoplasm of trachea
C34.00	(ICD10) Malignant neoplasm of unspecified main bronchus
C34.10	(ICD10) Malignant neoplasm of upper lobe, unspecified bronchus or lung
C34.30	(ICD10) Malignant neoplasm of lower lobe, unspecified bronchus or lung
C34.31	(ICD10) Malignant neoplasm of lower lobe, right bronchus or lung
C34.82	(ICD10) Malignant neoplasm of overlapping sites of left bronchus and lung
C34.90	(ICD10) Malignant neoplasm of unspecified part of unspecified bronchus or lung
C37	(ICD10) Malignant neoplasm of thymus
C38.0	(ICD10) Malignant neoplasm of heart
C38.1	(ICD10) Malignant neoplasm of anterior mediastinum
C38.3	(ICD10) Malignant neoplasm of mediastinum, part unspecified
C38.8	(ICD10) Malignant neoplasm of overlapping sites of heart, mediastinum and pleura
C40.21	(ICD10) Malignant neoplasm of long bones of right lower limb
C40.22	(ICD10) Malignant neoplasm of long bones of left lower limb
C40.31	(ICD10) Malignant neoplasm of short bones of right lower limb
C40.32	(ICD10) Malignant neoplasm of short bones of left lower limb
C40.80	(ICD10) Malignant neoplasm of overlapping sites of bone and articular cartilage of unspecified limb
C40.81	(ICD10) Malignant neoplasm of overlapping sites of bone and articular cartilage of right limb
C40.82	(ICD10) Malignant neoplasm of overlapping sites of bone and articular cartilage of left limb
C41.0	(ICD10) Malignant neoplasm of bones of skull and face
C41.1	(ICD10) Malignant neoplasm of mandible
C41.2	(ICD10) Malignant neoplasm of vertebral column
C41.3	(ICD10) Malignant neoplasm of ribs, sternum and clavicle
C41.4	(ICD10) Malignant neoplasm of pelvic bones, sacrum and coccyx

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C41.9	(ICD10) Malignant neoplasm of bone and articular cartilage, unspecified
C43.111	(ICD10) Malignant melanoma of right upper eyelid, including canthus
C43.112	(ICD10) Malignant melanoma of right lower eyelid, including canthus
C43.12	(ICD10) Malignant melanoma of left eyelid, including canthus
C43.121	(ICD10) Malignant melanoma of left upper eyelid, including canthus
C43.20	(ICD10) Malignant melanoma of unspecified ear and external auricular canal
C43.21	(ICD10) Malignant melanoma of right ear and external auricular canal
C43.22	(ICD10) Malignant melanoma of left ear and external auricular canal
C43.4	(ICD10) Malignant melanoma of scalp and neck
C43.51	(ICD10) Malignant melanoma of anal skin
C43.59	(ICD10) Malignant melanoma of other part of trunk
C43.60	(ICD10) Malignant melanoma of unspecified upper limb, including shoulder
C43.70	(ICD10) Malignant melanoma of unspecified lower limb, including hip
C43.71	(ICD10) Malignant melanoma of right lower limb, including hip
C45.9	(ICD10) Mesothelioma, unspecified
C46.0	(ICD10) Kaposi's sarcoma of skin
C46.1	(ICD10) Kaposi's sarcoma of soft tissue
C46.2	(ICD10) Kaposi's sarcoma of palate
C46.3	(ICD10) Kaposi's sarcoma of lymph nodes
C46.50	(ICD10) Kaposi's sarcoma of unspecified lung
C46.51	(ICD10) Kaposi's sarcoma of right lung
C46.52	(ICD10) Kaposi's sarcoma of left lung
C47.0	(ICD10) Malignant neoplasm of peripheral nerves of head, face and neck
C47.11	(ICD10) Malignant neoplasm of peripheral nerves of right upper limb, including shoulder
C47.20	(ICD10) Malignant neoplasm of peripheral nerves of unspecified lower limb, including hip
C47.4	(ICD10) Malignant neoplasm of peripheral nerves of abdomen
C47.9	(ICD10) Malignant neoplasm of peripheral nerves and autonomic nervous system, unspecified
C48.0	(ICD10) Malignant neoplasm of retroperitoneum
C48.2	(ICD10) Malignant neoplasm of peritoneum, unspecified
C48.8	(ICD10) Malignant neoplasm of overlapping sites of retroperitoneum and peritoneum
C49.0	(ICD10) Malignant neoplasm of connective and soft tissue of head, face and neck
C49.10	(ICD10) Malignant neoplasm of connective and soft tissue of unspecified upper limb, including shoulder
C49.12	(ICD10) Malignant neoplasm of connective and soft tissue of left upper limb, including shoulder

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C49.22	(ICD10) Malignant neoplasm of connective and soft tissue of left lower limb, including hip
C49.4	(ICD10) Malignant neoplasm of connective and soft tissue of abdomen
C49.5	(ICD10) Malignant neoplasm of connective and soft tissue of pelvis
C49.A2	(ICD10) Gastrointestinal stromal tumor of stomach
C49.A4	(ICD10) Gastrointestinal stromal tumor of large intestine
C49.A5	(ICD10) Gastrointestinal stromal tumor of rectum
C49.A9	(ICD10) Gastrointestinal stromal tumor of other sites
C50.012	(ICD10) Malignant neoplasm of nipple and areola, left female breast
C50.019	(ICD10) Malignant neoplasm of nipple and areola, unspecified female breast
C50.029	(ICD10) Malignant neoplasm of nipple and areola, unspecified male breast
C50.111	(ICD10) Malignant neoplasm of central portion of right female breast
C50.112	(ICD10) Malignant neoplasm of central portion of left female breast
C50.211	(ICD10) Malignant neoplasm of upper inner quadrant of right female breast
C50.212	(ICD10) Malignant neoplasm of upper inner quadrant of left female breast
C50.219	(ICD10) Malignant neoplasm of upper inner quadrant of unspecified female breast
C50.311	(ICD10) Malignant neoplasm of lower inner quadrant of right female breast
C50.419	(ICD10) Malignant neoplasm of upper outer quadrant of unspecified female breast
C50.422	(ICD10) Malignant neoplasm of upper outer quadrant of left male breast
C50.511	(ICD10) Malignant neoplasm of lower outer quadrant of right female breast
C50.519	(ICD10) Malignant neoplasm of lower outer quadrant of unspecified female breast
C50.522	(ICD10) Malignant neoplasm of lower outer quadrant of left male breast
C50.612	(ICD10) Malignant neoplasm of axillary tail of left female breast
C50.619	(ICD10) Malignant neoplasm of axillary tail of unspecified female breast
C50.622	(ICD10) Malignant neoplasm of axillary tail of left male breast
C50.912	(ICD10) Malignant neoplasm of unspecified site of left female breast
C50.919	(ICD10) Malignant neoplasm of unspecified site of unspecified female breast
C50.921	(ICD10) Malignant neoplasm of unspecified site of right male breast
C50.922	(ICD10) Malignant neoplasm of unspecified site of left male breast
C50.929	(ICD10) Malignant neoplasm of unspecified site of unspecified male breast
C51.2	(ICD10) Malignant neoplasm of clitoris
C51.9	(ICD10) Malignant neoplasm of vulva, unspecified
C52	(ICD10) Malignant neoplasm of vagina
C53.0	(ICD10) Malignant neoplasm of endocervix

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C54.1	(ICD10) Malignant neoplasm of endometrium
C54.8	(ICD10) Malignant neoplasm of overlapping sites of corpus uteri
C54.9	(ICD10) Malignant neoplasm of corpus uteri, unspecified
C55	(ICD10) Malignant neoplasm of uterus, part unspecified
C57.02	(ICD10) Malignant neoplasm of left fallopian tube
C57.10	(ICD10) Malignant neoplasm of unspecified broad ligament
C57.11	(ICD10) Malignant neoplasm of right broad ligament
C57.12	(ICD10) Malignant neoplasm of left broad ligament
C57.20	(ICD10) Malignant neoplasm of unspecified round ligament
C57.22	(ICD10) Malignant neoplasm of left round ligament
C57.3	(ICD10) Malignant neoplasm of parametrium
C58	(ICD10) Malignant neoplasm of placenta
C62.02	(ICD10) Malignant neoplasm of undescended left testis
C62.12	(ICD10) Malignant neoplasm of descended left testis
C63.10	(ICD10) Malignant neoplasm of unspecified spermatic cord
C63.12	(ICD10) Malignant neoplasm of left spermatic cord
C63.2	(ICD10) Malignant neoplasm of scrotum
C63.9	(ICD10) Malignant neoplasm of male genital organ, unspecified
C64.2	(ICD10) Malignant neoplasm of left kidney, except renal pelvis
C64.9	(ICD10) Malignant neoplasm of unspecified kidney, except renal pelvis
C65.2	(ICD10) Malignant neoplasm of left renal pelvis
C66.1	(ICD10) Malignant neoplasm of right ureter
C66.9	(ICD10) Malignant neoplasm of unspecified ureter
C67.1	(ICD10) Malignant neoplasm of dome of bladder
C67.2	(ICD10) Malignant neoplasm of lateral wall of bladder
C67.3	(ICD10) Malignant neoplasm of anterior wall of bladder
C67.4	(ICD10) Malignant neoplasm of posterior wall of bladder
C67.9	(ICD10) Malignant neoplasm of bladder, unspecified
C68.0	(ICD10) Malignant neoplasm of urethra
C68.1	(ICD10) Malignant neoplasm of paraurethral glands
C68.8	(ICD10) Malignant neoplasm of overlapping sites of urinary organs
C68.9	(ICD10) Malignant neoplasm of urinary organ, unspecified
C69.00	(ICD10) Malignant neoplasm of unspecified conjunctiva

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C69.01	(ICD10) Malignant neoplasm of right conjunctiva
C69.30	(ICD10) Malignant neoplasm of unspecified choroid
C69.31	(ICD10) Malignant neoplasm of right choroid
C69.41	(ICD10) Malignant neoplasm of right ciliary body
C69.42	(ICD10) Malignant neoplasm of left ciliary body
C69.51	(ICD10) Malignant neoplasm of right lacrimal gland and duct
C69.60	(ICD10) Malignant neoplasm of unspecified orbit
C69.80	(ICD10) Malignant neoplasm of overlapping sites of unspecified eye and adnexa
C69.81	(ICD10) Malignant neoplasm of overlapping sites of right eye and adnexa
C69.91	(ICD10) Malignant neoplasm of unspecified site of right eye
C69.92	(ICD10) Malignant neoplasm of unspecified site of left eye
C70.1	(ICD10) Malignant neoplasm of spinal meninges
C71.2	(ICD10) Malignant neoplasm of temporal lobe
C71.3	(ICD10) Malignant neoplasm of parietal lobe
C71.4	(ICD10) Malignant neoplasm of occipital lobe
C71.5	(ICD10) Malignant neoplasm of cerebral ventricle
C71.6	(ICD10) Malignant neoplasm of cerebellum
C71.7	(ICD10) Malignant neoplasm of brain stem
C72.0	(ICD10) Malignant neoplasm of spinal cord
C72.20	(ICD10) Malignant neoplasm of unspecified olfactory nerve
C72.21	(ICD10) Malignant neoplasm of right olfactory nerve
C72.41	(ICD10) Malignant neoplasm of right acoustic nerve
C72.42	(ICD10) Malignant neoplasm of left acoustic nerve
C72.9	(ICD10) Malignant neoplasm of central nervous system, unspecified
C74.02	(ICD10) Malignant neoplasm of cortex of left adrenal gland
C74.10	(ICD10) Malignant neoplasm of medulla of unspecified adrenal gland
C74.90	(ICD10) Malignant neoplasm of unspecified part of unspecified adrenal gland
C74.92	(ICD10) Malignant neoplasm of unspecified part of left adrenal gland
C75.1	(ICD10) Malignant neoplasm of pituitary gland
C75.2	(ICD10) Malignant neoplasm of craniopharyngeal duct
C75.5	(ICD10) Malignant neoplasm of aortic body and other paraganglia
C75.8	(ICD10) Malignant neoplasm with pluriglandular involvement, unspecified
C75.9	(ICD10) Malignant neoplasm of endocrine gland, unspecified

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C76.3	(ICD10) Malignant neoplasm of pelvis
C76.50	(ICD10) Malignant neoplasm of unspecified lower limb
C76.51	(ICD10) Malignant neoplasm of right lower limb
C76.52	(ICD10) Malignant neoplasm of left lower limb
C76.8	(ICD10) Malignant neoplasm of other specified ill-defined sites
C77.0	(ICD10) Secondary and unspecified malignant neoplasm of lymph nodes of head, face and neck
C77.1	(ICD10) Secondary and unspecified malignant neoplasm of intrathoracic lymph nodes
C77.2	(ICD10) Secondary and unspecified malignant neoplasm of intra-abdominal lymph nodes
C77.5	(ICD10) Secondary and unspecified malignant neoplasm of intrapelvic lymph nodes
C77.9	(ICD10) Secondary and unspecified malignant neoplasm of lymph node, unspecified
C78.01	(ICD10) Secondary malignant neoplasm of right lung
C78.02	(ICD10) Secondary malignant neoplasm of left lung
C78.1	(ICD10) Secondary malignant neoplasm of mediastinum
C78.2	(ICD10) Secondary malignant neoplasm of pleura
C78.30	(ICD10) Secondary malignant neoplasm of unspecified respiratory organ
C78.6	(ICD10) Secondary malignant neoplasm of retroperitoneum and peritoneum
C78.89	(ICD10) Secondary malignant neoplasm of other digestive organs
C79.00	(ICD10) Secondary malignant neoplasm of unspecified kidney and renal pelvis
C79.01	(ICD10) Secondary malignant neoplasm of right kidney and renal pelvis
C79.02	(ICD10) Secondary malignant neoplasm of left kidney and renal pelvis
C79.10	(ICD10) Secondary malignant neoplasm of unspecified urinary organs
C79.19	(ICD10) Secondary malignant neoplasm of other urinary organs
C79.2	(ICD10) Secondary malignant neoplasm of skin
C79.49	(ICD10) Secondary malignant neoplasm of other parts of nervous system
C79.51	(ICD10) Secondary malignant neoplasm of bone
C79.62	(ICD10) Secondary malignant neoplasm of left ovary
C79.70	(ICD10) Secondary malignant neoplasm of unspecified adrenal gland
C79.72	(ICD10) Secondary malignant neoplasm of left adrenal gland
C79.81	(ICD10) Secondary malignant neoplasm of breast
C7A.0	(ICD10) Malignant carcinoid tumors
C7A.01	(ICD10) Malignant carcinoid tumors of the small intestine
C7A.012	(ICD10) Malignant carcinoid tumor of the ileum
C7A.02	(ICD10) Malignant carcinoid tumors of the appendix, large intestine, and rectum

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C7A.022	(ICD10) Malignant carcinoid tumor of the ascending colon
C7A.023	(ICD10) Malignant carcinoid tumor of the transverse colon
C7A.029	(ICD10) Malignant carcinoid tumor of the large intestine, unspecified portion
C7A.095	(ICD10) Malignant carcinoid tumor of the midgut, unspecified
C7B.0	(ICD10) Secondary carcinoid tumors
C7B.00	(ICD10) Secondary carcinoid tumors, unspecified site
C7B.01	(ICD10) Secondary carcinoid tumors of distant lymph nodes
C7B.02	(ICD10) Secondary carcinoid tumors of liver
C7B.04	(ICD10) Secondary carcinoid tumors of peritoneum
C7B.09	(ICD10) Secondary carcinoid tumors of other sites
C7B.1	(ICD10) Secondary Merkel cell carcinoma
C7B.8	(ICD10) Other secondary neuroendocrine tumors
C80.0	(ICD10) Disseminated malignant neoplasm, unspecified
C81.02	(ICD10) Nodular lymphocyte predominant Hodgkin lymphoma, intrathoracic lymph nodes
C81.05	(ICD10) Nodular lymphocyte predominant Hodgkin lymphoma, lymph nodes of inguinal region and lower
C81.06	(ICD10) Nodular lymphocyte predominant Hodgkin lymphoma, intrapelvic lymph nodes
C81.07	(ICD10) Nodular lymphocyte predominant Hodgkin lymphoma, spleen
C81.09	(ICD10) Nodular lymphocyte predominant Hodgkin lymphoma, extranodal and solid organ sites
C81.10	(ICD10) Nodular sclerosis Hodgkin lymphoma, unspecified site
C81.13	(ICD10) Nodular sclerosis Hodgkin lymphoma, intra-abdominal lymph nodes
C81.17	(ICD10) Nodular sclerosis Hodgkin lymphoma, spleen
C81.18	(ICD10) Nodular sclerosis Hodgkin lymphoma, lymph nodes of multiple sites
C81.19	(ICD10) Nodular sclerosis Hodgkin lymphoma, extranodal and solid organ sites
C81.25	(ICD10) Mixed cellularity Hodgkin lymphoma, lymph nodes of inguinal region and lower limb
C81.27	(ICD10) Mixed cellularity Hodgkin lymphoma, spleen
C81.30	(ICD10) Lymphocyte depleted Hodgkin lymphoma, unspecified site
C81.31	(ICD10) Lymphocyte depleted Hodgkin lymphoma, lymph nodes of head, face, and neck
C81.34	(ICD10) Lymphocyte depleted Hodgkin lymphoma, lymph nodes of axilla and upper limb
C81.35	(ICD10) Lymphocyte depleted Hodgkin lymphoma, lymph nodes of inguinal region and lower limb
C81.38	(ICD10) Lymphocyte depleted Hodgkin lymphoma, lymph nodes of multiple sites
C81.39	(ICD10) Lymphocyte depleted Hodgkin lymphoma, extranodal and solid organ sites
C81.41	(ICD10) Lymphocyte-rich Hodgkin lymphoma, lymph nodes of head, face, and neck
C81.43	(ICD10) Lymphocyte-rich Hodgkin lymphoma, intra-abdominal lymph nodes



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C81.70	(ICD10) Other Hodgkin lymphoma, unspecified site
C81.73	(ICD10) Other Hodgkin lymphoma, intra-abdominal lymph nodes
C81.74	(ICD10) Other Hodgkin lymphoma, lymph nodes of axilla and upper limb
C81.75	(ICD10) Other Hodgkin lymphoma, lymph nodes of inguinal region and lower limb
C81.77	(ICD10) Other Hodgkin lymphoma, spleen
C81.92	(ICD10) Hodgkin lymphoma, unspecified, intrathoracic lymph nodes
C81.93	(ICD10) Hodgkin lymphoma, unspecified, intra-abdominal lymph nodes
C81.96	(ICD10) Hodgkin lymphoma, unspecified, intrapelvic lymph nodes
C82.02	(ICD10) Follicular lymphoma grade I, intrathoracic lymph nodes
C82.04	(ICD10) Follicular lymphoma grade I, lymph nodes of axilla and upper limb
C82.05	(ICD10) Follicular lymphoma grade I, lymph nodes of inguinal region and lower limb
C82.09	(ICD10) Follicular lymphoma grade I, extranodal and solid organ sites
C82.12	(ICD10) Follicular lymphoma grade II, intrathoracic lymph nodes
C82.13	(ICD10) Follicular lymphoma grade II, intra-abdominal lymph nodes
C82.17	(ICD10) Follicular lymphoma grade II, spleen
C82.18	(ICD10) Follicular lymphoma grade II, lymph nodes of multiple sites
C82.22	(ICD10) Follicular lymphoma grade III, unspecified, intrathoracic lymph nodes
C82.23	(ICD10) Follicular lymphoma grade III, unspecified, intra-abdominal lymph nodes
C82.24	(ICD10) Follicular lymphoma grade III, unspecified, lymph nodes of axilla and upper limb
C82.27	(ICD10) Follicular lymphoma grade III, unspecified, spleen
C82.29	(ICD10) Follicular lymphoma grade III, unspecified, extranodal and solid organ sites
C82.33	(ICD10) Follicular lymphoma grade IIIa, intra-abdominal lymph nodes
C82.36	(ICD10) Follicular lymphoma grade IIIa, intrapelvic lymph nodes
C82.37	(ICD10) Follicular lymphoma grade IIIa, spleen
C82.38	(ICD10) Follicular lymphoma grade IIIa, lymph nodes of multiple sites
C82.39	(ICD10) Follicular lymphoma grade IIIa, extranodal and solid organ sites
C82.40	(ICD10) Follicular lymphoma grade IIIb, unspecified site
C82.41	(ICD10) Follicular lymphoma grade IIIb, lymph nodes of head, face, and neck
C82.42	(ICD10) Follicular lymphoma grade IIIb, intrathoracic lymph nodes
C82.45	(ICD10) Follicular lymphoma grade IIIb, lymph nodes of inguinal region and lower limb
C82.47	(ICD10) Follicular lymphoma grade IIIb, spleen
C82.81	(ICD10) Other types of follicular lymphoma, lymph nodes of head, face, and neck
C82.82	(ICD10) Other types of follicular lymphoma, intrathoracic lymph nodes

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C82.83	(ICD10) Other types of follicular lymphoma, intra-abdominal lymph nodes-abdominal lymph nodes
C82.85	(ICD10) Other types of follicular lymphoma, lymph nodes of inguinal region and lower limb
C82.86	(ICD10) Other types of follicular lymphoma, intrapelvic lymph nodes
C82.87	(ICD10) Other types of follicular lymphoma, spleen
C82.92	(ICD10) Follicular lymphoma, unspecified, intrathoracic lymph nodes
C82.94	(ICD10) Follicular lymphoma, unspecified, lymph nodes of axilla and upper limb
C82.96	(ICD10) Follicular lymphoma, unspecified, intrapelvic lymph nodes
C82.97	(ICD10) Follicular lymphoma, unspecified, spleen
C82.98	(ICD10) Follicular lymphoma, unspecified, lymph nodes of multiple sites
C82.99	(ICD10) Follicular lymphoma, unspecified, extranodal and solid organ sites
C83.01	(ICD10) Small cell B-cell lymphoma, lymph nodes of head, face, and neck
C83.06	(ICD10) Small cell B-cell lymphoma, intrapelvic lymph nodes
C83.07	(ICD10) Small cell B-cell lymphoma, spleen
C83.13	(ICD10) Mantle cell lymphoma, intra-abdominal lymph nodes
C83.14	(ICD10) Mantle cell lymphoma, lymph nodes of axilla and upper limb
C83.17	(ICD10) Mantle cell lymphoma, spleen
C83.18	(ICD10) Mantle cell lymphoma, lymph nodes of multiple sites
C83.32	(ICD10) Diffuse large B cell lymphoma, intrathoracic lymph nodes
C83.35	(ICD10) Diffuse large B cell lymphoma, lymph nodes of inguinal region and lower limb
C83.36	(ICD10) Diffuse large B cell lymphoma, intrapelvic lymph nodes
C83.37	(ICD10) Diffuse large B cell lymphoma, spleen
C83.38	(ICD10) Diffuse large B cell lymphoma, lymph nodes of multiple sites
C83.39	(ICD10) Diffuse large B cell lymphoma, extranodal and solid organ sites
C83.50	(ICD10) Lymphoblastic (diffuse) lymphoma, unspecified site
C83.51	(ICD10) Lymphoblastic (diffuse) lymphoma, lymph nodes of head, face, and neck
C83.52	(ICD10) Lymphoblastic (diffuse) lymphoma, intrathoracic lymph nodes
C83.53	(ICD10) Lymphoblastic (diffuse) lymphoma, intra-abdominal lymph nodes
C83.54	(ICD10) Lymphoblastic (diffuse) lymphoma, lymph nodes of axilla and upper limb
C83.57	(ICD10) Lymphoblastic (diffuse) lymphoma, spleen
C83.58	(ICD10) Lymphoblastic (diffuse) lymphoma, lymph nodes of multiple sites
C83.70	(ICD10) Burkitt lymphoma, unspecified site
C83.72	(ICD10) Burkitt lymphoma, intrathoracic lymph nodes
C83.73	(ICD10) Burkitt lymphoma, intra-abdominal lymph nodes

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C83.74	(ICD10) Burkitt lymphoma, lymph nodes of axilla and upper limb
C83.75	(ICD10) Burkitt lymphoma, lymph nodes of inguinal region and lower limb
C83.79	(ICD10) Burkitt lymphoma, extranodal and solid organ sites
C83.83	(ICD10) Other non follicular lymphoma, intra-abdominal lymph nodes
C83.86	(ICD10) Other non follicular lymphoma, intrapelvic lymph nodes
C83.87	(ICD10) Other non follicular lymphoma, spleen
C83.88	(ICD10) Other non follicular lymphoma, lymph nodes of multiple sites
C83.92	(ICD10) Non follicular (diffuse) lymphoma, unspecified, intrathoracic lymph nodes
C83.93	(ICD10) Non follicular (diffuse) lymphoma, unspecified, intra
C83.95	(ICD10) Non follicular (diffuse) lymphoma, unspecified, lymph nodes of inguinal region and lower limb
C83.99	(ICD10) Non follicular (diffuse) lymphoma, unspecified, extranodal and solid organ sites
C84.03	(ICD10) Mycosis fungoides, intra abdominal lymph nodes
C84.04	(ICD10) Mycosis fungoides, lymph nodes of axilla and upper limb
C84.07	(ICD10) Mycosis fungoides, spleen
C84.10	(ICD10) Sezary disease, unspecified site
C84.12	(ICD10) Sezary disease, intrathoracic lymph nodes
C84.13	(ICD10) Sezary disease, intra-abdominal lymph nodes
C84.15	(ICD10) Sezary disease, lymph nodes of inguinal region and lower limb
C84.18	(ICD10) Sezary disease, lymph nodes of multiple sites
C84.41	(ICD10) Peripheral T cell lymphoma, not classified, lymph nodes of head, face, and neck
C84.44	(ICD10) Peripheral T cell lymphoma, not classified, lymph nodes of axilla and upper limb
C84.45	(ICD10) Peripheral T cell lymphoma, not classified, lymph nodes of inguinal region and lower limb
C84.47	(ICD10) Peripheral T cell lymphoma, not classified, spleen
C84.48	(ICD10) Peripheral T cell lymphoma, not classified, lymph nodes of multiple sites
C84.63	(ICD10) Anaplastic large cell lymphoma, ALK positive, intra
C84.64	(ICD10) Anaplastic large cell lymphoma, ALK positive, lymph nodes of axilla and upper limb
C84.65	(ICD10) Anaplastic large cell lymphoma, ALK positive, lymph nodes of inguinal region and lower limb
C84.69	(ICD10) Anaplastic large cell lymphoma, ALK positive, extranodal and solid organ sites
C84.72	(ICD10) Anaplastic large cell lymphoma, ALK negative, intrathoracic lymph nodes
C84.73	(ICD10) Anaplastic large cell lymphoma, ALK negative, intra
C84.74	(ICD10) Anaplastic large cell lymphoma, ALK negative, lymph nodes of axilla and upper limb
C84.75	(ICD10) Anaplastic large cell lymphoma, ALK negative, lymph nodes of inguinal region and lower limb
C84.76	(ICD10) Anaplastic large cell lymphoma, ALK negative, intrapelvic lymph nodes

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C84.77	(ICD10) Anaplastic large cell lymphoma, ALK negative, spleen
C84.78	(ICD10) Anaplastic large cell lymphoma, ALK negative, lymph nodes of multiple sites
C84.94	(ICD10) Mature T/NK cell lymphomas, unspecified, lymph nodes of axilla and upper limb
C84.95	(ICD10) Mature T/NK cell lymphomas, unspecified, lymph nodes of inguinal region and lower limb
C84.96	(ICD10) Mature T/NK cell lymphomas, unspecified, intrapelvic lymph nodes
C84.97	(ICD10) Mature T/NK cell lymphomas, unspecified, spleen
C84.98	(ICD10) Mature T/NK cell lymphomas, unspecified, lymph nodes of multiple sites
C84.99	(ICD10) Mature T/NK cell lymphomas, unspecified, extranodal and solid organ sites
C84.A7	(ICD10) Cutaneous T cell lymphoma, unspecified, spleen
C84.A8	(ICD10) Cutaneous T cell lymphoma, unspecified, lymph nodes of multiple sites
C84.Z0	(ICD10) Other mature T/NK cell lymphomas, unspecified site
C84.Z1	(ICD10) Other mature T/NK cell lymphomas, lymph nodes of head, face, and neck
C84.Z4	(ICD10) Other mature T/NK cell lymphomas, lymph nodes of axilla and upper limb
C84.Z6	(ICD10) Other mature T/NK cell lymphomas, intrapelvic lymph nodes
C84.Z8	(ICD10) Other mature T/NK cell lymphomas, lymph nodes of multiple sites
C84.Z9	(ICD10) Other mature T/NK cell lymphomas, extranodal and solid organ sites
C85.11	(ICD10) Unspecified B cell lymphoma, lymph nodes of head, face, and neck
C85.12	(ICD10) Unspecified B cell lymphoma, intrathoracic lymph nodes
C85.13	(ICD10) Unspecified B cell lymphoma, intra-abdominal lymph nodes
C85.16	(ICD10) Unspecified B cell lymphoma, intrapelvic lymph nodes
C85.23	(ICD10) Mediastinal (thymic) large B cell lymphoma, intra-abdominal lymph nodes
C85.24	(ICD10) Mediastinal (thymic) large B cell lymphoma, lymph nodes of axilla and upper limb
C85.26	(ICD10) Mediastinal (thymic) large B cell lymphoma, intrapelvic lymph nodes
C85.27	(ICD10) Mediastinal (thymic) large B cell lymphoma, spleen
C85.28	(ICD10) Mediastinal (thymic) large B cell lymphoma, lymph nodes of multiple sites
C85.29	(ICD10) Mediastinal (thymic) large B cell lymphoma, extranodal and solid organ sites
C85.80	(ICD10) Other specified types of non Hodgkin lymphoma, unspecified site
C85.84	(ICD10) Other specified types of non Hodgkin lymphoma, lymph nodes of axilla and upper limb
C85.85	(ICD10) Other specified types of non Hodgkin lymphoma, lymph nodes of inguinal region and lower limb
C85.87	(ICD10) Other specified types of non Hodgkin lymphoma, spleen
C85.91	(ICD10) Non Hodgkin lymphoma, unspecified, lymph nodes of head, face, and neck
C85.94	(ICD10) Non Hodgkin lymphoma, unspecified, lymph nodes of axilla and upper limb
C85.95	(ICD10) Non Hodgkin lymphoma, unspecified, lymph nodes of inguinal region and lower limb

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C86.2	(ICD10) Enteropathy type (intestinal) T-cell lymphoma
C86.4	(ICD10) Blastic NK cell lymphoma
C88.0	(ICD10) Waldenstrom macroglobulinemia
C88.4	(ICD10) Extranodal marginal zone B-cell lymphoma of mucosa-associated lymphoid tissue [MALT-
C90.00	(ICD10) Multiple myeloma not having achieved remission
C90.01	(ICD10) Multiple myeloma in remission
C90.12	(ICD10) Plasma cell leukemia in relapse
C90.20	(ICD10) Extramedullary plasmacytoma not having achieved remission
C90.21	(ICD10) Extramedullary plasmacytoma in remission
C90.31	(ICD10) Solitary plasmacytoma in remission
C90.32	(ICD10) Solitary plasmacytoma in relapse
C91.00	(ICD10) Acute lymphoblastic leukemia not having achieved remission
C91.02	(ICD10) Acute lymphoblastic leukemia, in relapse
C91.11	(ICD10) Chronic lymphocytic leukemia of Bcell type in remission
C91.12	(ICD10) Chronic lymphocytic leukemia of Bcell type in relapse
C91.30	(ICD10) Prolymphocytic leukemia of Bcell type not having achieved remission
C91.31	(ICD10) Prolymphocytic leukemia of Bcell type, in remission
C91.40	(ICD10) Hairy cell leukemia not having achieved remission
C91.41	(ICD10) Hairy cell leukemia, in remission
C91.42	(ICD10) Hairy cell leukemia, in relapse
C91.60	(ICD10) Prolymphocytic leukemia of T-cell type not having achieved remission
C91.61	(ICD10) Prolymphocytic leukemia of T-cell type, in remission
C91.91	(ICD10) Lymphoid leukemia, unspecified, in remission
C91.A1	(ICD10) Mature B-cell leukemia Burkitt-type, in remission
C91.Z0	(ICD10) Other lymphoid leukemia not having achieved remission
C91.Z1	(ICD10) Other lymphoid leukemia, in remission
C91.Z2	(ICD10) Other lymphoid leukemia, in relapse
C92.00	(ICD10) Acute myeloblastic leukemia, not having achieved remission
C92.01	(ICD10) Acute myeloblastic leukemia, in remission
C92.02	(ICD10) Acute myeloblastic leukemia, in relapse
C92.10	(ICD10) Chronic myeloid leukemia, BCR/ABL-positive, not having achieved remission
C92.20	(ICD10) Atypical chronic myeloid leukemia, BCR/ABL-negative, not having achieved remission
C92.21	(ICD10) Atypical chronic myeloid leukemia, BCR/ABL-negative, in remission

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C92.22	(ICD10) Atypical chronic myeloid leukemia, BCR/ABL-negative, in relapse
C92.30	(ICD10) Myeloid sarcoma, not having achieved remission
C92.31	(ICD10) Myeloid sarcoma, in remission
C92.32	(ICD10) Myeloid sarcoma, in relapse
C92.40	(ICD10) Acute promyelocytic leukemia, not having achieved remission
C92.50	(ICD10) Acute myelomonocytic leukemia, not having achieved remission
C92.61	(ICD10) Acute myeloid leukemia with 11q23-abnormality in remission
C92.91	(ICD10) Myeloid leukemia, unspecified in remission
C92.92	(ICD10) Myeloid leukemia, unspecified in relapse
C92.A2	(ICD10) Acute myeloid leukemia with multilineage dysplasia, in relapse
C92.Z2	(ICD10) Other myeloid leukemia, in relapse
C93.02	(ICD10) Acute monoblastic/monocytic leukemia, in relapse
C93.10	(ICD10) Chronic myelomonocytic leukemia not having achieved remission
C93.12	(ICD10) Chronic myelomonocytic leukemia, in relapse
C93.30	(ICD10) Juvenile myelomonocytic leukemia, not having achieved remission
C93.31	(ICD10) Juvenile myelomonocytic leukemia, in remission
C93.91	(ICD10) Monocytic leukemia, unspecified in remission
C93.92	(ICD10) Monocytic leukemia, unspecified in relapse
C93.Z0	(ICD10) Other monocytic leukemia, not having achieved remission
C93.Z2	(ICD10) Other monocytic leukemia, in relapse
C94.01	(ICD10) Acute erythroid leukemia, in remission
C94.20	(ICD10) Acute megakaryoblastic leukemia not having achieved remission
C94.30	(ICD10) Mast cell leukemia not having achieved remission
C94.31	(ICD10) Mast cell leukemia, in remission
C94.32	(ICD10) Mast cell leukemia, in relapse
C94.6	(ICD10) Myelodysplastic disease, not classified
C94.80	(ICD10) Other specified leukemias not having achieved remission
C95.00	(ICD10) Acute leukemia of unspecified cell type not having achieved remission
C95.02	(ICD10) Acute leukemia of unspecified cell type, in relapse
C95.10	(ICD10) Chronic leukemia of unspecified cell type not having achieved remission
C95.11	(ICD10) Chronic leukemia of unspecified cell type, in remission
C96.0	(ICD10) Multifocal and multisystemic (disseminated) Langerhans-cell histiocytosis
C96.20	(ICD10) Malignant mast cell neoplasm, unspecified

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C96.21	(ICD10) Aggressive systemic mastocytosis
C96.22	(ICD10) Mast cell sarcoma
C96.29	(ICD10) Other malignant mast cell neoplasm
C96.A	(ICD10) Histiocytic sarcoma
C96.Z	(ICD10) Other specified malignant neoplasms of lymphoid, hematopoietic and related tissue
C73	(ICD10) Malignant neoplasm of thyroid gland
D03.0	(ICD10) Melanoma in situ of lip
D03.10	(ICD10) Melanoma in situ of unspecified eyelid, including canthus
D03.12	(ICD10) Melanoma in situ of left eyelid, including canthus
D03.21	(ICD10) Melanoma in situ of right ear and external auricular canal
D03.22	(ICD10) Melanoma in situ of left ear and external auricular canal
D03.39	(ICD10) Melanoma in situ of other parts of face
D03.4	(ICD10) Melanoma in situ of scalp and neck
D03.51	(ICD10) Melanoma in situ of anal skin
D03.59	(ICD10) Melanoma in situ of other part of trunk
D03.62	(ICD10) Melanoma in situ of left upper limb, including shoulder
D03.70	(ICD10) Melanoma in situ of unspecified lower limb, including hip
D03.9	(ICD10) Melanoma in situ, unspecified
D03.11	(ICD10) Melanoma in situ of right eyelid, including canthus
D03.20	(ICD10) Melanoma in situ of unspecified ear and external auricular canal
D03.30	(ICD10) Melanoma in situ of unspecified part of face
D03.52	(ICD10) Melanoma in situ of breast (skin) (soft tissue)
D03.60	(ICD10) Melanoma in situ of unspecified upper limb, including shoulder
D03.61	(ICD10) Melanoma in situ of right upper limb, including shoulder
D03.71	(ICD10) Melanoma in situ of right lower limb, including hip
D03.72	(ICD10) Melanoma in situ of left lower limb, including hip
D03.8	(ICD10) Melanoma in situ of other sites
Z85	(ICD10) Personal history of malignant neoplasm
Z85.0	(ICD10) Personal history of malignant neoplasm of digestive organs
Z85.00	(ICD10) Personal history of malignant neoplasm of unspecified digestive organ
Z85.01	(ICD10) Personal history of malignant neoplasm of esophagus
Z85.02	(ICD10) Personal history of malignant neoplasm of stomach
Z85.020	(ICD10) Personal history of malignant carcinoid tumor of stomach

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Z85.028	(ICD10) Personal history of other malignant neoplasm of stomach
Z85.03	(ICD10) Personal history of malignant neoplasm of large intestine
Z85.030	(ICD10) Personal history of malignant carcinoid tumor of large intestine
Z85.038	(ICD10) Personal history of other malignant neoplasm of large intestine
Z85.04	(ICD10) Personal history of malignant neoplasm of rectum, rectosigmoid junction, and anus
Z85.040	(ICD10) Personal history of malignant carcinoid tumor of rectum
Z85.048	(ICD10) Personal history of other malignant neoplasm of rectum, rectosigmoid junction, and anus
Z85.05	(ICD10) Personal history of malignant neoplasm of liver
Z85.06	(ICD10) Personal history of malignant neoplasm of small intestine
Z85.060	(ICD10) Personal history of malignant carcinoid tumor of small intestine
Z85.068	(ICD10) Personal history of other malignant neoplasm of small intestine
Z85.07	(ICD10) Personal history of malignant neoplasm of pancreas
Z85.09	(ICD10) Personal history of malignant neoplasm of other digestive organs
Z85.1	(ICD10) Personal history of malignant neoplasm of trachea, bronchus and lung
Z85.11	(ICD10) Personal history of malignant neoplasm of bronchus and lung
Z85.110	(ICD10) Personal history of malignant carcinoid tumor of bronchus and lung
Z85.118	(ICD10) Personal history of other malignant neoplasm of bronchus and lung
Z85.12	(ICD10) Personal history of malignant neoplasm of trachea
Z85.2	(ICD10) Personal history of malignant neoplasm of other respiratory and intrathoracic organs
Z85.20	(ICD10) Personal history of malignant neoplasm of unspecified respiratory organ
Z85.21	(ICD10) Personal history of malignant neoplasm of larynx
Z85.22	(ICD10) Personal history of malignant neoplasm of nasal cavities, middle ear, and accessory sinuses
Z85.23	(ICD10) Personal history of malignant neoplasm of thymus
Z85.230	(ICD10) Personal history of malignant carcinoid tumor of thymus
Z85.238	(ICD10) Personal history of other malignant neoplasm of thymus
Z85.29	(ICD10) Personal history of malignant neoplasm of other respiratory and intrathoracic organs
Z85.3	(ICD10) Personal history of malignant neoplasm of breast
Z85.4	(ICD10) Personal history of malignant neoplasm of genital organs
Z85.40	(ICD10) Personal history of malignant neoplasm of unspecified female genital organ
Z85.41	(ICD10) Personal history of malignant neoplasm of cervix uteri
Z85.42	(ICD10) Personal history of malignant neoplasm of other parts of uterus
Z85.43	(ICD10) Personal history of malignant neoplasm of ovary
Z85.44	(ICD10) Personal history of malignant neoplasm of other female genital organs



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Z85.45	(ICD10) Personal history of malignant neoplasm of unspecified male genital organ
Z85.46	(ICD10) Personal history of malignant neoplasm of prostate
Z85.47	(ICD10) Personal history of malignant neoplasm of testis
Z85.48	(ICD10) Personal history of malignant neoplasm of epididymis
Z85.49	(ICD10) Personal history of malignant neoplasm of other male genital organs
Z85.5	(ICD10) Personal history of malignant neoplasm of urinary tract
Z85.50	(ICD10) Personal history of malignant neoplasm of unspecified urinary tract organ
Z85.51	(ICD10) Personal history of malignant neoplasm of bladder
Z85.52	(ICD10) Personal history of malignant neoplasm of kidney
Z85.520	(ICD10) Personal history of malignant carcinoid tumor of kidney
Z85.528	(ICD10) Personal history of other malignant neoplasm of kidney
Z85.53	(ICD10) Personal history of malignant neoplasm of renal pelvis
Z85.54	(ICD10) Personal history of malignant neoplasm of ureter
Z85.59	(ICD10) Personal history of malignant neoplasm of other urinary tract organ
Z85.6	(ICD10) Personal history of leukemia
Z85.7	(ICD10) Personal history of other malignant neoplasms of lymphoid, hematopoietic and related tissues
Z85.71	(ICD10) Personal history of Hodgkin lymphoma
Z85.72	(ICD10) Personal history of non-Hodgkin lymphomas
Z85.79	(ICD10) Personal history of other malignant neoplasms of lymphoid, hematopoietic and related tissues
Z85.8	(ICD10) Personal history of malignant neoplasms of other organs and systems
Z85.81	(ICD10) Personal history of malignant neoplasm of lip, oral cavity, and pharynx
Z85.810	(ICD10) Personal history of malignant neoplasm of tongue
Z85.818	(ICD10) Personal history of malignant neoplasm of other sites of lip, oral cavity, and pharynx
Z85.819	(ICD10) Personal history of malignant neoplasm of unspecified site of lip, oral cavity, and pharynx
Z85.82	(ICD10) Personal history of malignant neoplasm of skin
Z85.820	(ICD10) Personal history of malignant melanoma of skin
Z85.821	(ICD10) Personal history of Merkel cell carcinoma
Z85.828	(ICD10) Personal history of other malignant neoplasm of skin
Z85.83	(ICD10) Personal history of malignant neoplasm of bone and soft tissue
Z85.830	(ICD10) Personal history of malignant neoplasm of bone
Z85.831	(ICD10) Personal history of malignant neoplasm of soft tissue
Z85.84	(ICD10) Personal history of malignant neoplasm of eye and nervous tissue
Z85.840	(ICD10) Personal history of malignant neoplasm of eye

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Z85.841	(ICD10) Personal history of malignant neoplasm of brain
Z85.848	(ICD10) Personal history of malignant neoplasm of other parts of nervous tissue
Z85.85	(ICD10) Personal history of malignant neoplasm of endocrine glands
Z85.850	(ICD10) Personal history of malignant neoplasm of thyroid
Z85.858	(ICD10) Personal history of malignant neoplasm of other endocrine glands
Z85.89	(ICD10) Personal history of malignant neoplasm of other organs and systems
Z85.9	(ICD10) Personal history of malignant neoplasm, unspecified

## Appendix A

Major bleeding exclusion criteria: 1 inpatient (any position) or 2 outpatient diagnosis	
562.02	(ICD9) DIVERTICULOSIS OF SMALL INTESTINE WITH HEMORRHAGE
562.03	(ICD9) DIVERTICULITIS OF SMALL INTESTINE WITH HEMORRHAGE
562.12	(ICD9) DIVERTICULOSIS OF COLON WITH HEMORRHAGE
562.13	(ICD9) DIVERTICULITIS OF COLON WITH HEMORRHAGE
568.81	(ICD9) HEMOPERITONEUM (NONTRAUMATIC)
569.3	(ICD9) HEMORRHAGE OF RECTUM AND ANUS
569.83	(ICD9) PERFORATION OF INTESTINE
569.85	(ICD9) ANGIODYSPLASIA OF INTESTINE WITH HEMORRHAGE
569.86	(ICD9) DIEULAFOY LESION (HEMORRHAGIC) OF INTESTINE
578	(ICD9) HEMATEMESIS
578.9	(ICD9) HEMORRHAGE OF GASTROINTESTINAL TRACT UNSPECIFIED
423	(ICD9) HEMOPERICARDIUM
432	(ICD9) NONTRAUMATIC EXTRADURAL HEMORRHAGE
432.1	(ICD9) SUBDURAL HEMORRHAGE
432.9	(ICD9) UNSPECIFIED INTRACRANIAL HEMORRHAGE
459	(ICD9) HEMORRHAGE UNSPECIFIED
531	(ICD9) ACUTE GASTRIC ULCER WITH HEMORRHAGE
531	(ICD9) ACUTE GASTRIC ULCER WITH HEMORRHAGE WITHOUT OBSTRUCTION
531.01	(ICD9) ACUTE GASTRIC ULCER WITH HEMORRHAGE WITH OBSTRUCTION
531.2	(ICD9) ACUTE GASTRIC ULCER WITH HEMORRHAGE AND PERFORATION
531.2	(ICD9) ACUTE GASTRIC ULCER WITH HEMORRHAGE AND PERFORATION WITHOUT OBSTRUCTION
531.21	(ICD9) ACUTE GASTRIC ULCER WITH HEMORRHAGE AND PERFORATION WITH OBSTRUCTION
531.4	(ICD9) CHRONIC OR UNSPECIFIED GASTRIC ULCER WITH HEMORRHAGE
531.4	(ICD9) CHRONIC OR UNSPECIFIED GASTRIC ULCER WITH HEMORRHAGE WITHOUT OBSTRUCTION
531.41	(ICD9) CHRONIC OR UNSPECIFIED GASTRIC ULCER WITH HEMORRHAGE WITH OBSTRUCTION
531.6	(ICD9) CHRONIC OR UNSPECIFIED GASTRIC ULCER WITH HEMORRHAGE AND PERFORATION
531.6	(ICD9) CHRONIC OR UNSPECIFIED GASTRIC ULCER WITH HEMORRHAGE AND PERFORATION WITHOUT OBSTRUCTION
531.61	(ICD9) CHRONIC OR UNSPECIFIED GASTRIC ULCER WITH HEMORRHAGE AND PERFORATION WITH OBSTRUCTION
532	(ICD9) ACUTE DUODENAL ULCER WITH HEMORRHAGE
532	(ICD9) ACUTE DUODENAL ULCER WITH HEMORRHAGE WITHOUT OBSTRUCTION
532.01	(ICD9) ACUTE DUODENAL ULCER WITH HEMORRHAGE WITH OBSTRUCTION
532.2	(ICD9) ACUTE DUODENAL ULCER WITH HEMORRHAGE AND PERFORATION

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532.2	(ICD9) ACUTE DUODENAL ULCER WITH HEMORRHAGE AND PERFORATION WITHOUT OBSTRUCTION
532.21	(ICD9) ACUTE DUODENAL ULCER WITH HEMORRHAGE AND PERFORATION WITH OBSTRUCTION
532.4	(ICD9) CHRONIC OR UNSPECIFIED DUODENAL ULCER WITH HEMORRHAGE
532.4	(ICD9) CHRONIC OR UNSPECIFIED DUODENAL ULCER WITH HEMORRHAGE WITHOUT OBSTRUCTION
532.41	(ICD9) CHRONIC OR UNSPECIFIED DUODENAL ULCER WITH HEMORRHAGE WITH OBSTRUCTION
532.6	(ICD9) CHRONIC OR UNSPECIFIED DUODENAL ULCER WITH HEMORRHAGE AND PERFORATION
532.6	(ICD9) CHRONIC OR UNSPECIFIED DUODENAL ULCER WITH HEMORRHAGE AND PERFORATION WITHOUT OBSTRUCTION
532.61	(ICD9) CHRONIC OR UNSPECIFIED DUODENAL ULCER WITH HEMORRHAGE AND PERFORATION WITH OBSTRUCTION
533	(ICD9) ACUTE PEPTIC ULCER OF UNSPECIFIED SITE WITH HEMORRHAGE
533	(ICD9) ACUTE PEPTIC ULCER OF UNSPECIFIED SITE WITH HEMORRHAGE WITHOUT OBSTRUCTION
533.01	(ICD9) ACUTE PEPTIC ULCER OF UNSPECIFIED SITE WITH HEMORRHAGE WITH OBSTRUCTION
533.2	(ICD9) ACUTE PEPTIC ULCER OF UNSPECIFIED SITE WITH HEMORRHAGE AND PERFORATION
533.2	(ICD9) ACUTE PEPTIC ULCER OF UNSPECIFIED SITE WITH HEMORRHAGE AND PERFORATION WITHOUT OBSTRUCTION
533.21	(ICD9) ACUTE PEPTIC ULCER OF UNSPECIFIED SITE WITH HEMORRHAGE AND PERFORATION WITH OBSTRUCTION
533.4	(ICD9) CHRONIC OR UNSPECIFIED PEPTIC ULCER OF UNSPECIFIED SITE WITH HEMORRHAGE
533.4	(ICD9) CHRONIC OR UNSPECIFIED PEPTIC ULCER OF UNSPECIFIED SITE WITH HEMORRHAGE WITHOUT OBSTRUCTION
533.41	(ICD9) CHRONIC OR UNSPECIFIED PEPTIC ULCER OF UNSPECIFIED SITE WITH HEMORRHAGE WITH OBSTRUCTION
533.6	(ICD9) CHRONIC OR UNSPECIFIED PEPTIC ULCER OF UNSPECIFIED SITE WITH HEMORRHAGE AND PERFORATION
533.6	(ICD9) CHRONIC OR UNSPECIFIED PEPTIC ULCER OF UNSPECIFIED SITE WITH HEMORRHAGE AND PERFORATION WITHOUT OBSTRUCTION
533.61	(ICD9) CHRONIC OR UNSPECIFIED PEPTIC ULCER OF UNSPECIFIED SITE WITH HEMORRHAGE AND PERFORATION WITH OBSTRUCTION
534	(ICD9) ACUTE GASTROJEJUNAL ULCER WITH HEMORRHAGE
534	(ICD9) ACUTE GASTROJEJUNAL ULCER WITH HEMORRHAGE WITHOUT OBSTRUCTION
534.01	(ICD9) ACUTE GASTROJEJUNAL ULCER WITH HEMORRHAGE WITH OBSTRUCTION
534.2	(ICD9) ACUTE GASTROJEJUNAL ULCER WITH HEMORRHAGE AND PERFORATION
534.2	(ICD9) ACUTE GASTROJEJUNAL ULCER WITH HEMORRHAGE AND PERFORATION WITHOUT OBSTRUCTION
534.21	(ICD9) ACUTE GASTROJEJUNAL ULCER WITH HEMORRHAGE AND PERFORATION WITH OBSTRUCTION
534.4	(ICD9) CHRONIC OR UNSPECIFIED GASTROJEJUNAL ULCER WITH HEMORRHAGE
534.4	(ICD9) CHRONIC OR UNSPECIFIED GASTROJEJUNAL ULCER WITH HEMORRHAGE WITHOUT OBSTRUCTION
534.41	(ICD9) CHRONIC OR UNSPECIFIED GASTROJEJUNAL ULCER WITH HEMORRHAGE WITH OBSTRUCTION
534.6	(ICD9) CHRONIC OR UNSPECIFIED GASTROJEJUNAL ULCER WITH HEMORRHAGE AND PERFORATION
534.6	(ICD9) CHRONIC OR UNSPECIFIED GASTROJEJUNAL ULCER WITH HEMORRHAGE AND PERFORATION WITHOUT OBSTRUCTION

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534.61	(ICD9) CHRONIC OR UNSPECIFIED GASTROJEJUNAL ULCER WITH HEMORRHAGE AND PERFORATION WITH OBSTRUCTION
578.1	(ICD9) BLOOD IN STOOL
719.1	(ICD9) HEMARTHROSIS
719.1	(ICD9) HEMARTHROSIS SITE UNSPECIFIED
719.11	(ICD9) HERARTHROSIS INVOLVING SHOULDER REGION
719.12	(ICD9) HEMARTHORSIS INVOLVING UPPER ARM
719.13	(ICD9) HEMARTHROSIS INVOLVING FOREARM
719.14	(ICD9) HEMARTHROSIS INVOLVING HAND
719.15	(ICD9) HEMARTHROSIS INVOLVING PELVIC REGION AND THIGH
719.16	(ICD9) HEMARTHROSIS INVOLVING LOWER LEG
719.17	(ICD9) HEMARTHROSIS INVOLVING ANKLE AND FOOT
719.18	(ICD9) HEMARTHROSIS INVOLVING OTHER SPECIFIED SITES
719.19	(ICD9) HEMARTHROSIS INVOLVING MULTIPLE SITES
430	(ICD9) SUBARACHNOID HEMORRHAGE
431	(ICD9) INTRACEREBRAL HEMORRHAGE
I31.2	(ICD10) Hemopericardium, not elsewhere classified
I60.00	(ICD10) Nontraumatic subarachnoid hemorrhage from unspecified carotid siphon and bifurcation
I60.01	(ICD10) Nontraumatic subarachnoid hemorrhage from right carotid siphon and bifurcation
I60.02	(ICD10) Nontraumatic subarachnoid hemorrhage from left carotid siphon and bifurcation
I60.10	(ICD10) Nontraumatic subarachnoid hemorrhage from unspecified middle cerebral artery
I60.11	(ICD10) Nontraumatic subarachnoid hemorrhage from right middle cerebral artery
I60.12	(ICD10) Nontraumatic subarachnoid hemorrhage from left middle cerebral artery
I60.2	(ICD10) Nontraumatic subarachnoid hemorrhage from anterior communicating artery
I60.30	(ICD10) Nontraumatic subarachnoid hemorrhage from unspecified posterior communicating artery
I60.31	(ICD10) Nontraumatic subarachnoid hemorrhage from right posterior communicating artery
I60.32	(ICD10) Nontraumatic subarachnoid hemorrhage from left posterior communicating artery
I60.4	(ICD10) Nontraumatic subarachnoid hemorrhage from basilar artery
I60.50	(ICD10) Nontraumatic subarachnoid hemorrhage from unspecified vertebral artery
I60.51	(ICD10) Nontraumatic subarachnoid hemorrhage from right vertebral artery
I60.52	(ICD10) Nontraumatic subarachnoid hemorrhage from left vertebral artery
I60.6	(ICD10) Nontraumatic subarachnoid hemorrhage from other intracranial arteries
I60.7	(ICD10) Nontraumatic subarachnoid hemorrhage from unspecified intracranial artery
I60.8	(ICD10) Other nontraumatic subarachnoid hemorrhage

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I60.9	(ICD10) Nontraumatic subarachnoid hemorrhage, unspecified
I61.0	(ICD10) Nontraumatic intracerebral hemorrhage in hemisphere, subcortical
I61.1	(ICD10) Nontraumatic intracerebral hemorrhage in hemisphere, cortical
I61.2	(ICD10) Nontraumatic intracerebral hemorrhage in hemisphere, unspecified
I61.3	(ICD10) Nontraumatic intracerebral hemorrhage in brain stem
I61.4	(ICD10) Nontraumatic intracerebral hemorrhage in cerebellum
I61.5	(ICD10) Nontraumatic intracerebral hemorrhage, intraventricular
I61.6	(ICD10) Nontraumatic intracerebral hemorrhage, multiple localized
I61.8	(ICD10) Other nontraumatic intracerebral hemorrhage
I61.9	(ICD10) Nontraumatic intracerebral hemorrhage, unspecified
I62.00	(ICD10) Nontraumatic subdural hemorrhage, unspecified
I62.01	(ICD10) Nontraumatic acute subdural hemorrhage
I62.02	(ICD10) Nontraumatic subacute subdural hemorrhage
I62.03	(ICD10) Nontraumatic chronic subdural hemorrhage
I62.1	(ICD10) Nontraumatic extradural hemorrhage
I62.9	(ICD10) Nontraumatic intracranial hemorrhage, unspecified
K25.0	(ICD10) Acute gastric ulcer with hemorrhage
K25.2	(ICD10) Acute gastric ulcer with both hemorrhage and perforation
K25.4	(ICD10) Chronic or unspecified gastric ulcer with hemorrhage
K25.6	(ICD10) Chronic or unspecified gastric ulcer with both hemorrhage and perforation
K26.0	(ICD10) Acute duodenal ulcer with hemorrhage
K26.2	(ICD10) Acute duodenal ulcer with both hemorrhage and perforation
K26.4	(ICD10) Chronic or unspecified duodenal ulcer with hemorrhage
K26.6	(ICD10) Chronic or unspecified duodenal ulcer with both hemorrhage and perforation
K27.0	(ICD10) Acute peptic ulcer, site unspecified, with hemorrhage
K27.2	(ICD10) Acute peptic ulcer, site unspecified, with both hemorrhage and perforation
K27.4	(ICD10) Chronic or unspecified peptic ulcer, site unspecified, with hemorrhage
K27.6	(ICD10) Chronic or unspecified peptic ulcer, site unspecified, with both hemorrhage and perforation
K28.0	(ICD10) Acute gastrojejunal ulcer with hemorrhage
K28.2	(ICD10) Acute gastrojejunal ulcer with both hemorrhage and perforation
K28.4	(ICD10) Chronic or unspecified gastrojejunal ulcer with hemorrhage
K28.6	(ICD10) Chronic or unspecified gastrojejunal ulcer with both hemorrhage and perforation
K55.21	(ICD10) Angiodysplasia of colon with hemorrhage

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K56.60	(ICD10) Unspecified intestinal obstruction
K57.01	(ICD10) Diverticulitis of small intestine with perforation and abscess with bleeding
K57.11	(ICD10) Diverticulosis of small intestine without perforation or abscess with bleeding
K57.13	(ICD10) Diverticulitis of small intestine without perforation or abscess with bleeding
K57.21	(ICD10) Diverticulitis of large intestine with perforation and abscess with bleeding
K57.31	(ICD10) Diverticulosis of large intestine without perforation or abscess with bleeding
K57.33	(ICD10) Diverticulitis of large intestine without perforation or abscess with bleeding
K57.41	(ICD10) Diverticulitis of both small and large intestine with perforation and abscess with bleeding
K57.51	(ICD10) Diverticulosis of both small and large intestine without perforation or abscess with bleeding
K57.53	(ICD10) Diverticulitis of both small and large intestine without perforation or abscess with bleeding
K57.81	(ICD10) Diverticulitis of intestine, part unspecified, with perforation and abscess with bleeding
K57.91	(ICD10) Diverticulosis of intestine, part unspecified, without perforation or abscess with bleeding
K57.93	(ICD10) Diverticulitis of intestine, part unspecified, without perforation or abscess with bleeding
K62.5	(ICD10) Hemorrhage of anus and rectum
K63.1	(ICD10) Perforation of intestine (nontraumatic)
K63.81	(ICD10) Dieulafoy lesion of intestine
K66.1	(ICD10) Hemoperitoneum
K92.0	(ICD10) Hematemesis
K92.1	(ICD10) Melena
K92.2	(ICD10) Gastrointestinal hemorrhage, unspecified
M25.00	(ICD10) Hemarthrosis, unspecified joint
M25.011	(ICD10) Hemarthrosis, right shoulder
M25.012	(ICD10) Hemarthrosis, left shoulder
M25.019	(ICD10) Hemarthrosis, unspecified shoulder
M25.021	(ICD10) Hemarthrosis, right elbow
M25.022	(ICD10) Hemarthrosis, left elbow
M25.029	(ICD10) Hemarthrosis, unspecified elbow
M25.031	(ICD10) Hemarthrosis, right wrist
M25.032	(ICD10) Hemarthrosis, left wrist
M25.039	(ICD10) Hemarthrosis, unspecified wrist
M25.041	(ICD10) Hemarthrosis, right hand
M25.042	(ICD10) Hemarthrosis, left hand
M25.049	(ICD10) Hemarthrosis, unspecified hand

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M25.051	(ICD10) Hemarthrosis, right hip
M25.052	(ICD10) Hemarthrosis, left hip
M25.059	(ICD10) Hemarthrosis, unspecified hip
M25.061	(ICD10) Hemarthrosis, right knee
M25.062	(ICD10) Hemarthrosis, left knee
M25.069	(ICD10) Hemarthrosis, unspecified knee
M25.071	(ICD10) Hemarthrosis, right ankle
M25.072	(ICD10) Hemarthrosis, left ankle
M25.073	(ICD10) Hemarthrosis, unspecified ankle
M25.074	(ICD10) Hemarthrosis, right foot
M25.075	(ICD10) Hemarthrosis, left foot
M25.076	(ICD10) Hemarthrosis, unspecified foot
M25.08	(ICD10) Hemarthrosis, other specified site
R58	(ICD10) Hemorrhage, not elsewhere classified
R04	(ICD10) Hemorrhage from respiratory passages
R04.0	(ICD10) Epistaxis
R04.1	(ICD10) Hemorrhage from throat
R04.2	(ICD10) Hemoptysis
R04.8	(ICD10) Hemorrhage from other sites in respiratory passages
R04.81	(ICD10) Acute idiopathic pulmonary hemorrhage in infants
R04.89	(ICD10) Hemorrhage from other sites in respiratory passages
R04.9	(ICD10) Hemorrhage from respiratory passages, unspecified
R31	(ICD10) Hematuria
R31.0	(ICD10) Gross hematuria
R31.1	(ICD10) Benign essential microscopic hematuria
R31.2	(ICD10) Other microscopic hematuria
R31.21	
R31.29	
R31.9	(ICD10) Hematuria, unspecified
784.7	(ICD9) EPISTAXIS
784.8	(ICD9) HEMORRHAGE FROM THROAT
599.7	(ICD9) HEMATURIA
599.7	(ICD9) HEMATURIA UNSPECIFIED



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599.71	(ICD9) GROSS HEMATURIA
599.72	(ICD9) MICROSCOPIC HEMATURIA
786.3	(ICD9) HEMOPTYSIS
786.3	(ICD9) HEMOPTYSIS UNSPECIFIED
786.31	(ICD9) ACUTE IDIOPATHIC PULMONARY HEMORRHAGE IN INFANTS
786.39	(ICD9) OTHER HEMOPTYSIS
<b>The occurrence of Inpatient with the following attributes:</b>	
<b>Procedure Code (Any Position) is any of: { "44.43", "43255", "0W3P8ZZ" }</b>	
44.43	(ICD9) ENDOSCOPIC CONTROL OF GASTRIC OR DUODENAL BLEEDING
43255	(HCPCS) Esophagogastroduodenoscopy, flexible, transoral; with control of bleeding, any method / Upper gastrointestinal endoscopy including esophagus, stomach, and either the duodenum and/or jejunum as appropriate; with control of bleeding, any method
0W3P8ZZ	(ICD10) Control Bleeding in Gastrointestinal Tract, Via Natural or Artificial Opening Endoscopic

# Appendix A

## Dialysis

ESRD, defined as 2 codes (either inpatient or outpatient), separated by at least 30 days

Codes include:

- ICD9 prox codes:

39.95, Hemodialysis

54.98, Peritoneal dialysis

- ICD9 dx codes:

585.5x, Chronic kidney disease, Stage V (for ESRD with no mention of dialysis)

585.6x, End stage renal disease (for ESRD with dialysis)

V56.0x, encounter for dialysis NOS

V56.8x, encounter for peritoneal dialysis

V45.1x, renal dialysis status

- CPT4 codes:

90957, 90960, ESRD related services monthly, for patients 12-19 and 20 years of age and older; with 4 or more face-to-face physician visits per month

90958, 90961, ESRD related services monthly, for patients 12-19 and 20 years of age and older; with 2-3 face-to-face physician visits per month

90959, 90962, ESRD related services monthly, for patients 12-19 and 20 years of age and older; with 1 face-to-face physician visit per month

90920, 90921, ESRD related services per full month; for patients 12-19 and twenty years of age and over

90924, 90925, ESRD related services (less than full month), per day; for patients 12-19 and twenty years of age and over

90935, Hemodialysis procedure with single physician evaluation

90937, Hemodialysis procedure requiring repeated evaluation(s) with or without substantial revision of dialysis prescription

90945, Dialysis procedure other than hemodialysis (eg, peritoneal dialysis, hemofiltration, or other continuous renal replacement therapies), with single physician evaluation

90947, Dialysis procedure other than hemodialysis (eg, peritoneal dialysis, hemofiltration, or other continuous renal replacement therapies) requiring repeated physician evaluations, with or without substantial revision of dialysis prescription

90965, 90966, ESRD related services for home dialysis per full month, for patients 12-19 and 20 years of age and older

90969, 90970, ESRD related services for dialysis less than a full month of service, per day; for patients 12-19 and 20 years of age and older

90989, Dialysis training, patient, including helper where applicable, any mode, completed course

90993, Dialysis training, patient, including helper where applicable, any mode, course not completed, per training session

90999, Unlisted dialysis procedure, inpatient or outpatient

99512, Home visit for hemodialysis

- HCPCS codes:

G0257, Unscheduled or emergency dialysis treatment for ESRD patient in a hospital outpatient dept. that is not certified as an ESRD facility

G0314, G0317, ESRD related services during the course of treatment, for patients 12-19 and 20 yrs of age and over to include monitoring for the adequacy of nutrition, etc. w/4 or more physician visit per month

G0315, G0318, ESRD related services during the course of treatment, for patients 12-19 and 20yrs of age and over to include monitoring for the adequacy of nutrition, etc. w/2 or 3 physician visit per month

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G0316, G0319, ESRD related services during the course of treatment, for patients 12-19 and 20 yrs of age and over to include monitoring for the adequacy of nutrition, etc. w/1 physician visit per month

G0322, G0323, ESRD related services for home dialysis patients per full month: for patients 12-19 and 20 yrs of age and over to include monitoring for adequacy of nutrition and etc.

G0326, G0327, ESRD related services for home dialysis (less than full month), per day; for patients 12-19 and 20 yrs of age and over

S9335, Home therapy, hemodialysis; administrative services, professional pharmacy services, care coordination, and all necessary supplies and equipment (drugs and nursing services coded separately), per diem

S9339, Home therapy, peritoneal dialysis, administrative services, care coordination and all necessary supplies and equipment, per diem

OR

Kidney transplant, defined as either 1 inpatient or 1 outpatient code

Codes include:

-ICD9 dx codes:

V42.0x, Kidney transplant status

996.81 Complications of transplanted kidney

-ICD9 prox codes:

55.6x, Transplant of kidney (Exclude 55.61)

CPT4 codes:

## Appendix A

### Pregnancy

#### Dx codes

650 NORMAL DELIVERY  
660 OBSTRUCTED LABOR  
661 ABNORMALITY OF FORCES OF LABOR  
662 LONG LABOR  
663 UMBILICAL CORD COMPLICATIONS DURING LABOR AND DELIVERY  
664 TRAUMA TO PERINEUM AND VULVA DURING DELIVERY  
665 OTHER OBSTETRICAL TRAUMA  
667 RETAINED PLACENTA OR MEMBRANES WITHOUT HEMORRHAGE  
668 COMPLICATIONS OF THE ADMINISTRATION OF ANESTHETIC OR OTHER SEDATION IN LABOR AND DELIVERY  
669.94 UNSPECIFIED COMPLICATION OF LABOR AND DELIVERY POSTPARTUM CONDITION OR COMPLICATION  
V24 POSTPARTUM CARE AND EXAMINATION  
V24.0 POSTPARTUM CARE AND EXAMINATION IMMEDIATELY AFTER DELIVERY  
V24.1 POSTPARTUM CARE AND EXAMINATION OF LACTATING MOTHER  
V24.2 ROUTINE POSTPARTUM FOLLOW  
V27 OUTCOME OF DELIVERY  
V27.0 MOTHER WITH SINGLE LIVEBORN  
V27.1 MOTHER WITH SINGLE STILLBORN  
V27.2 MOTHER WITH TWINS BOTH LIVEBORN  
V27.3 MOTHER WITH TWINS ONE LIVEBORN AND ONE STILLBORN  
V27.4 MOTHER WITH TWINS BOTH STILLBORN  
V27.5 MOTHER WITH OTHER MULTIPLE BIRTH ALL LIVEBORN  
V27.6 MOTHER WITH OTHER MULTIPLE BIRTH SOME LIVEBORN  
V27.7 MOTHER WITH OTHER MULTIPLE BIRTH ALL STILLBORN  
V27.9 MOTHER WITH UNSPECIFIED OUTCOME OF DELIVERY

#### Procedure codes

72.0 LOW FORCEPS OPERATION  
72.1 LOW FORCEPS OPERATION WITH EPISIOTOMY  
72.2 MID FORCEPS OPERATION  
72.21 MID FORCEPS OPERATION WITH EPISIOTOMY  
72.29 OTHER MID FORCEPS OPERATION  
72.3 HIGH FORCEPS OPERATION  
72.31 HIGH FORCEPS OPERATION WITH EPISIOTOMY  
72.39 OTHER HIGH FORCEPS OPERATION

## Appendix A

- 72.4 FORCEPS ROTATION OF FETAL HEAD
- 72.5 BREECH EXTRACTION
  - 72.51 PARTIAL BREECH EXTRACTION WITH FORCEPS TO AFTERCOMING HEAD
  - 72.52 OTHER PARTIAL BREECH EXTRACTION
  - 72.53 TOTAL BREECH EXTRACTION WITH FORCEPS TO AFTERCOMING HEAD
  - 72.54 OTHER TOTAL BREECH EXTRACTION
- 72.6 FORCEPS APPLICATION TO AFTERCOMING HEAD
- 72.7 VACUUM EXTRACTION
  - 72.71 VACUUM EXTRACTION WITH EPISIOTOMY
  - 72.79 OTHER VACUUM EXTRACTION
- 72.8 OTHER SPECIFIED INSTRUMENTAL DELIVERY
- 72.9 UNSPECIFIED INSTRUMENTAL DELIVERY
- 73.0 ARTIFICIAL RUPTURE OF MEMBRANES
  - 73.01 INDUCTION OF LABOR BY ARTIFICIAL RUPTURE OF MEMBRANES
  - 73.09 OTHER ARTIFICIAL RUPTURE OF MEMBRANES
- 73.1 OTHER SURGICAL INDUCTION OF LABOR
- 73.2 INTERNAL AND COMBINED VERSION AND EXTRACTION
  - 73.21 INTERNAL AND COMBINED VERSION WITHOUT EXTRACTION
  - 73.22 INTERNAL AND COMBINED VERSION WITH EXTRACTION
- 73.3 FAILED FORCEPS
- 73.4 MEDICAL INDUCTION OF LABOR
- 73.5 MANUALLY ASSISTED DELIVERY
  - 73.51 MANUAL ROTATION OF FETAL HEAD
  - 73.59 OTHER MANUALLY ASSISTED DELIVERY
- 73.6 EPISIOTOMY
- 73.8 OPERATIONS ON FETUS TO FACILITATE DELIVERY
- 73.9 OTHER OPERATIONS ASSISTING DELIVERY
  - 73.91 EXTERNAL VERSION ASSISTING DELIVERY
  - 73.92 REPLACEMENT OF PROLAPSED UMBILICAL CORD
  - 73.93 INCISION OF CERVIX TO ASSIST DELIVERY
  - 73.94 PUBIOTOMY TO ASSIST DELIVERY
  - 73.99 OTHER OPERATIONS ASSISTING DELIVERY
- 74.0 CLASSICAL CESAREAN SECTION
  - 74.1 LOW CERVICAL CESAREAN SECTION
  - 74.2 EXTRAPERITONEAL CESAREAN SECTION

## Appendix A

74.3	REMOVAL OF EXTRATUBAL ECTOPIC PREGNANCY
74.4	CESAREAN SECTION OF OTHER SPECIFIED TYPE
74.9	CESAREAN SECTION OF UNSPECIFIED TYPE
74.91	HYSTEROTOMY TO TERMINATE PREGNANCY
74.99	OTHER CESAREAN SECTION OF UNSPECIFIED TYPE
75.4	MANUAL REMOVAL OF RETAINED PLACENTA
75.5	REPAIR OF CURRENT OBSTETRIC LACERATION OF UTERUS
75.6	REPAIR OF OTHER CURRENT OBSTETRIC LACERATION
75.7	MANUAL EXPLORATION OF UTERINE CAVITY, POSTPARTUM
75.9	OTHER OBSTETRIC OPERATIONS

# Appendix B

Optum

MarketScan

Medicare

BEFORE PS MATCHING

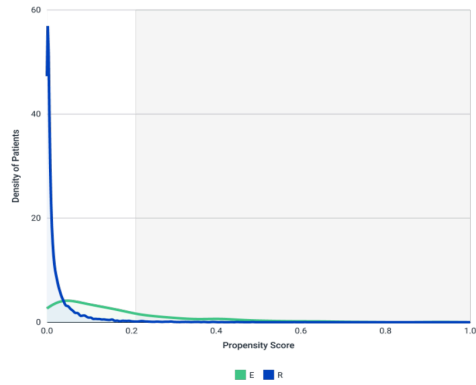


Figure 68: Pre-matching propensity score overlap

The c-statistics for the propensity score model, pre-matching was 0.88. The postmatching c-statistic was 0.68.

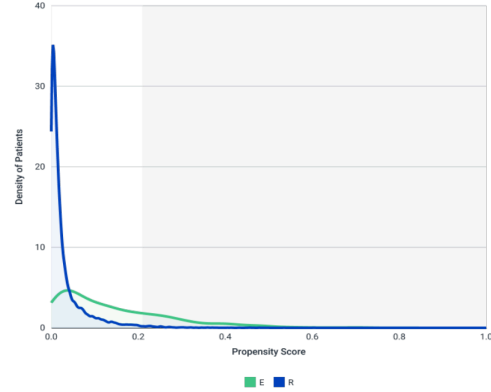


Figure 68: Pre-matching propensity score overlap

The c-statistics for the propensity score model, pre-matching was 0.833. The postmatching c-statistic was 0.626.

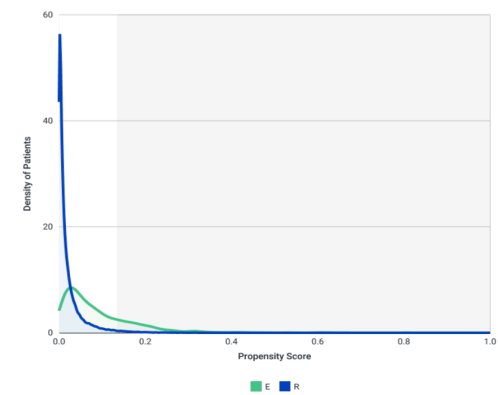


Figure 44: Pre-matching propensity score overlap

The c-statistics for the propensity score model, pre-matching was 0.841. The postmatching c-statistic was 0.583.

AFTER PS MATCHING

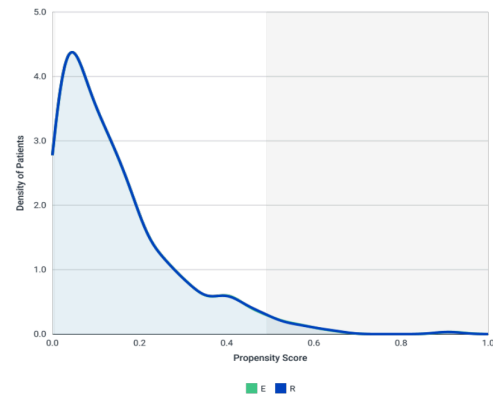


Figure 69: Post-matching propensity score overlap

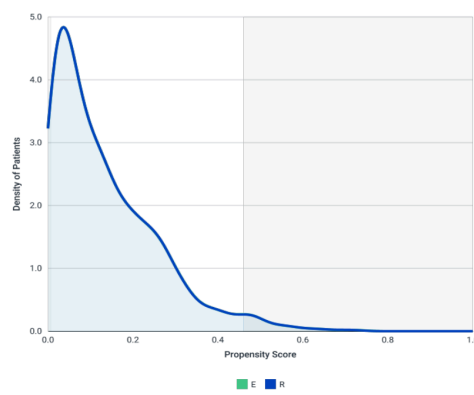


Figure 69: Post-matching propensity score overlap

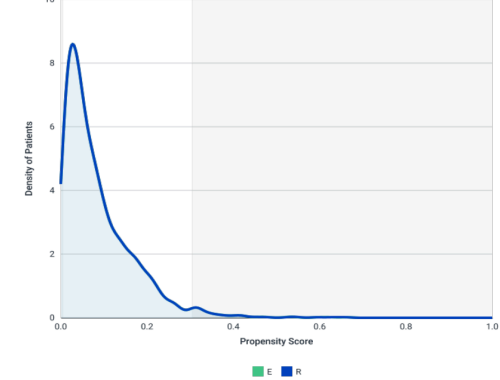


Figure 45: Post-matching propensity score overlap

# Appendix B

Unmatched												
	Optum			MarketScan			Medicare			POOLED		
Variable	WARFARIN Copy	Dabigatran 150mg Copy		St. Diff. Reference - warfarin Copy	:- Dabigatran 150mg Copy		St. Diff. reference - warfarin Copy	atran 150mg Copy		St. Diff. Reference - warfarin Copy	Exposure - Dabigatran 150mg Copy	St. Diff.
Number of patients	12,559	400		18,874	727		65,437	1,592		96,870	2,719	
Age												
...mean (sd)	65.83 (14.67)	60.86 (15.91)	0.32	57.54 (15.42)	55.10 (15.33)	0.16	76.75 (8.13)	75.79 (7.70)	0.12	71.59 (10.90)	68.06 (11.61)	0.31
Age categories without zero category												
...18 - 54; n (%)	2,744 (21.8%)	135 (33.8%)	-0.27	7,725 (40.9%)	356 (49.0%)	-0.16	0 (0.0%)	0 (0.0%)	#DIV/0!	10,469 (10.8%)	491 (18.1%)	-0.21
...55 - 64; n (%)	2,310 (18.4%)	77 (19.2%)	-0.02	6,043 (32.0%)	206 (28.3%)	0.08	0 (0.0%)	0 (0.0%)	#DIV/0!	8,353 (8.6%)	283 (10.4%)	-0.06
...65 - 74; n (%)	3,544 (28.2%)	107 (26.8%)	0.03	2,298 (12.2%)	80 (11.0%)	0.04	29,940 (45.8%)	796 (50.0%)	-0.08	35,782 (36.9%)	983 (36.2%)	0.01
...≥ 75; n (%)	3,961 (31.5%)	81 (20.2%)	0.26	2,808 (14.9%)	85 (11.7%)	0.09	35,497 (54.2%)	796 (50.0%)	0.08	42,266 (43.6%)	962 (35.4%)	0.17
Gender without zero category- United												
...Males; n (%)	5,947 (47.4%)	194 (48.5%)	-0.02	9,614 (50.9%)	383 (52.7%)	-0.04	25,561 (39.1%)	640 (40.2%)	-0.02	41,122 (42.5%)	1,217 (44.8%)	-0.05
...Females; n (%)	6,612 (52.6%)	206 (51.5%)	0.02	9,260 (49.1%)	344 (47.3%)	0.04	39,876 (60.9%)	952 (59.8%)	0.02	55,748 (57.5%)	1,502 (55.2%)	0.05
Race												
...White; n (%)							58,175 (88.9%)	1,414 (88.8%)		58,175 (88.9%)	1,414 (88.8%)	0.00
...Black; n (%)							4,876 (7.5%)	106 (6.7%)		4,876 (7.5%)	106 (6.7%)	0.00
...Asian; n (%)							343 (0.5%)	9 (0.6%)		343 (0.5%)	9 (0.6%)	0.00
...Hispanic; n (%)							786 (1.2%)	22 (1.4%)		786 (1.2%)	22 (1.4%)	0.00
...North American Native; n (%)							218 (0.3%)	3 (0.2%)		218 (0.3%)	3 (0.2%)	0.00
...Other/Unknown; n (%)							1,039 (1.6%)	38 (2.4%)		1,039 (1.6%)	38 (2.4%)	0.00
Region without zero category-United v3 (lumping missing&other category with West)												
...Northeast; n (%)	1,387 (11.0%)	44 (11.0%)	0.00	3,508 (18.6%)	169 (23.2%)	-0.11	13,285 (20.3%)	383 (24.1%)	-0.09	18,180 (18.8%)	596 (21.9%)	-0.08
...South; n (%)	3,736 (29.7%)	167 (41.8%)	-0.25	5,758 (30.5%)	125 (17.2%)	0.32	20,262 (31.0%)	558 (35.1%)	-0.09	29,756 (30.7%)	850 (31.3%)	-0.01
...Midwest; n (%)	3,599 (28.7%)	88 (22.0%)	0.15	5,483 (29.1%)	230 (31.6%)	-0.05	18,819 (28.8%)	317 (19.9%)	0.21	27,901 (28.8%)	635 (23.4%)	0.12
...West; n (%)	3,837 (30.6%)	101 (25.2%)	0.12	3,922 (20.8%)	200 (27.5%)	-0.16	12,972 (19.8%)	330 (20.7%)	-0.02	20,731 (21.4%)	631 (23.2%)	-0.04
...Unknown+missing; n (%)	N/A	N/A	#VALUE!	203 (1.1%)	3 (0.4%)	0.08	N/A	N/A	#VALUE!	203 (1.1%)	3 (0.4%)	0.08
CV Covariates												
Ischemic heart disease; n (%)	1,832 (14.6%)	43 (10.8%)	0.11	1,777 (9.4%)	71 (9.8%)	-0.01	12,693 (19.4%)	322 (20.2%)	-0.02	16,302 (16.8%)	436 (16.0%)	0.02
Acute MI; n (%)	77 (0.6%)	1 (0.2%)	0.06	77 (0.4%)	4 (0.6%)	-0.03	495 (0.8%)	12 (0.8%)	0.00	649 (0.7%)	17 (0.6%)	0.01
ACS/unstable angina; n (%)	71 (0.6%)	4 (1.0%)	-0.04	66 (0.3%)	4 (0.6%)	-0.04	473 (0.7%)	11 (0.7%)	0.00	610 (0.6%)	19 (0.7%)	-0.01
Old MI; n (%)	332 (2.6%)	8 (2.0%)	0.04	237 (1.3%)	15 (2.1%)	-0.06	2,550 (3.9%)	65 (4.1%)	-0.01	3119 (3.2%)	88 (3.2%)	0.00
Stable angina; n (%)	170 (1.4%)	3 (0.8%)	0.06	131 (0.7%)	10 (1.4%)	-0.07	871 (1.3%)	34 (2.1%)	-0.06	1,172 (1.2%)	047 (1.7%)	-0.04
Coronary atherosclerosis and other forms of chronic ischemic heart disease; n (%)	1,675 (13.3%)	42 (10.5%)	0.09	1,643 (8.7%)	61 (8.4%)	0.01	11,779 (18.0%)	298 (18.7%)	-0.02	15,097 (15.6%)	401 (14.7%)	0.03
Other atherosclerosis with ICD10 v2 Copy; n (%)	101 (0.8%)	2 (0.5%)	0.04	124 (0.7%)	6 (0.8%)	-0.01	843 (1.3%)	14 (0.9%)	0.04	1068 (1.1%)	22 (0.8%)	0.03
Previous cardiac procedure (CABG or PTCA or Stent) v4; n (%)	34 (0.3%)	2 (0.5%)	-0.03	36 (0.2%)	2 (0.3%)	-0.02	181 (0.3%)	8 (0.5%)	-0.03	251 (0.3%)	12 (0.4%)	-0.02
History of CABG or PTCA; n (%)	440 (3.5%)	9 (2.2%)	0.08	226 (1.2%)	10 (1.4%)	-0.02	3,774 (5.8%)	122 (7.7%)	-0.08	4,440 (4.6%)	141 (5.2%)	-0.03
Any stroke; n (%)	451 (3.6%)	14 (3.5%)	0.01	526 (2.8%)	13 (1.8%)	0.07	3,441 (5.3%)	76 (4.8%)	0.02	4,418 (4.6%)	103 (3.8%)	0.04
Ischemic stroke (w and w/o mention of cerebral infarction); n (%)	451 (3.6%)	14 (3.5%)	0.01	526 (2.8%)	13 (1.8%)	0.07	3,441 (5.3%)	76 (4.8%)	0.02	4,418 (4.6%)	103 (3.8%)	0.04
Hemorrhagic stroke; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
TIA; n (%)	100 (0.8%)	1 (0.2%)	0.09	101 (0.5%)	5 (0.7%)	-0.03	704 (1.1%)	26 (1.6%)	-0.04	905 (0.9%)	32 (1.2%)	-0.03
Other cerebrovascular disease; n (%)	200 (1.6%)	7 (1.8%)	-0.02	216 (1.1%)	10 (1.4%)	-0.03	1,482 (2.3%)	31 (1.9%)	0.03	1898 (2.0%)	48 (1.8%)	0.01
Cerebrovascular procedure; n (%)	2 (0.0%)	0 (0.0%)	#DIV/0!	3 (0.0%)	0 (0.0%)	#DIV/0!	34 (0.1%)	2 (0.1%)	0.00	039 (0.0%)	2 (0.1%)	-0.04
Heart failure (CHF); n (%)	1,245 (9.9%)	28 (7.0%)	0.10	993 (5.3%)	40 (5.5%)	-0.01	7,488 (11.4%)	191 (12.0%)	-0.02	9,726 (10.0%)	259 (9.5%)	0.02
Peripheral Vascular Disease (PVD) or PVD Surgery v2; n (%)	1,037 (8.3%)	35 (8.8%)	-0.02	944 (5.0%)	33 (4.5%)	0.02	6,344 (9.7%)	155 (9.7%)	0.00	8,325 (8.6%)	223 (8.2%)	0.01
Atrial fibrillation; n (%)	1,476 (11.8%)	51 (12.8%)	-0.03	1,184 (6.3%)	65 (8.9%)	-0.10	9,318 (14.2%)	238 (14.9%)	-0.02	11,978 (12.4%)	354 (13.0%)	-0.02
Other cardiac dysrhythmia; n (%)	2,089 (16.6%)	74 (18.5%)	-0.05	2,071 (11.0%)	105 (14.4%)	-0.10	11,009 (16.8%)	313 (19.7%)	-0.08	15,169 (15.7%)	492 (18.1%)	-0.06
Cardiac conduction disorders; n (%)	613 (4.9%)	21 (5.2%)	-0.01	552 (2.9%)	16 (2.2%)	0.04	3,328 (5.1%)	94 (5.9%)	-0.04	4493 (4.6%)	131 (4.8%)	-0.01
Other CVD; n (%)	2,404 (19.1%)	75 (18.8%)	0.01	2,244 (11.9%)	94 (12.9%)	-0.03	10,471 (16.0%)	306 (19.2%)	-0.08	15,119 (15.6%)	475 (17.5%)	-0.05
Diabetes-related complications												
Occurrence of Diabetic Neuropathy v2 Copy; n (%)	488 (3.9%)	15 (3.8%)	0.01	413 (2.2%)	11 (1.5%)	0.05	2,446 (3.7%)	59 (3.7%)	0.00	3347 (3.5%)	85 (3.1%)	0.02
Occurrence of diabetic nephropathy V3 with ICD10 Copy; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	294 (0.4%)	17 (1.1%)	-0.08	294 (0.3%)	017 (0.6%)	-0.04
Hypoglycemia v2; n (%)	75 (0.6%)	1 (0.2%)	0.06	109 (0.6%)	2 (0.3%)	0.04	1,065 (1.6%)	25 (1.6%)	0.00	1249 (1.3%)	28 (1.0%)	0.03
Hyperglycemia; n (%)	727 (5.8%)	17 (4.2%)	0.07	641 (3.4%)	24 (3.3%)	0.01	4,147 (6.3%)	140 (8.8%)	-0.09	5515 (5.7%)	181 (6.7%)	-0.04
Diabetic ketoacidosis; n (%)	14 (0.1%)	0 (0.0%)	0.04	22 (0.1%)	0 (0.0%)	0.04	78 (0.1%)	2 (0.1%)	0.00	114 (0.1%)	02 (0.1%)	0.00
Hypertension: 1 inpatient or 2 outpatient claims within 365 days; n (%)	7,347 (58.5%)	217 (54.2%)	0.09	8,418 (44.6%)	264 (36.3%)	0.17	49,234 (75.2%)	1,197 (75.2%)	0.00	64,999 (67.1%)	1,678 (61.7%)	0.11
Hyperlipidemia v2; n (%)	5,245 (41.8%)	159 (39.8%)	0.04	6,037 (32.0%)	196 (27.0%)	0.11	29,994 (45.8%)	775 (48.7%)	-0.06	41,276 (42.6%)	1,130 (41.6%)	0.02
Edema; n (%)	2,533 (20.2%)	92 (23.0%)	-0.07	3,140 (16.6%)	129 (17.7%)	-0.03	12,415 (19.0%)	358 (22.5%)	-0.09	18088 (18.7%)	579 (21.3%)	-0.07
Renal Dysfunction (non-diabetic) v2; n (%)	15 (0.1%)	0 (0.0%)	0.04	19 (0.1%)	2 (0.3%)	-0.04	72 (0.1%)	3 (0.2%)	-0.03	106 (0.1%)	005 (0.2%)	-0.03
Occurrence of acute renal disease v2; n (%)	7 (0.1%)	0 (0.0%)	0.04	12 (0.1%)	1 (0.1%)	0.00	58 (0.1%)	2 (0.1%)	0.00	77 (0.1%)	3 (0.1%)	0.00
Occurrence of chronic renal insufficiency; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	000 (0.0%)	#DIV/0!
Chronic kidney disease v2; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	000 (0.0%)	#DIV/0!
CKD Stage 3-4; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	000 (0.0%)	#DIV/0!
Occurrence of hypertensive nephropathy; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	000 (0.0%)	#DIV/0!
Occurrence of miscellaneous renal insufficiency v2; n (%)	8 (0.1%)	0 (0.0%)	0.04	7 (0.0%)	1 (0.1%)	-0.04	13 (0.0%)	1 (0.1%)	-0.04	28 (0.0%)	002 (0.1%)	-0.04
Other Covariates												
Liver disease; n (%)	58 (0.5%)	1 (0.2%)	0.05	73 (0.4%)	3 (0.4%)	0.00	325 (0.5%)	7 (0.4%)	0.01	456 (0.5%)	11 (0.4%)	0.01
Osteoarthritis; n (%)	3,117 (24.8%)	95 (23.8%)	0.02	3,577 (19.0%)	126 (17.3%)	0.04	18,654 (28.5%)	507 (31.8%)	-0.07	25348 (26.2%)	728 (26.8%)	-0.01



# Appendix B

Other arthritis, arthropathies and musculoskeletal pain; n (%)	7,837 (62.4%)	291 (72.8%)	-0.22	12,397 (65.7%)	492 (67.7%)	-0.04	39,418 (60.2%)	1,054 (66.2%)	-0.12	59652 (61.6%)	1837 (67.6%)	-0.13
Dorsopathies; n (%)	3,526 (28.1%)	123 (30.8%)	-0.06	4,793 (25.4%)	180 (24.8%)	0.01	17,513 (26.8%)	455 (28.6%)	-0.04	25832 (26.7%)	758 (27.9%)	-0.03
Fractures; n (%)	1,004 (8.0%)	37 (9.2%)	-0.04	1,348 (7.1%)	53 (7.3%)	-0.01	5,946 (9.1%)	144 (9.0%)	0.00	8298 (8.6%)	234 (8.6%)	0.00
Falls v2; n (%)	1,037 (8.3%)	34 (8.5%)	-0.01	683 (3.6%)	30 (4.1%)	-0.03	2,858 (4.4%)	73 (4.6%)	-0.01	4578 (4.7%)	137 (5.0%)	-0.01
Osteoporosis; n (%)	942 (7.5%)	19 (4.8%)	0.11	712 (3.8%)	19 (2.6%)	0.07	7,465 (11.4%)	161 (10.1%)	0.04	9119 (9.4%)	199 (7.3%)	0.08
Depression; n (%)	1,755 (14.0%)	53 (13.2%)	0.02	2,091 (11.1%)	66 (9.1%)	0.07	8,730 (13.3%)	214 (13.4%)	0.00	12576 (13.0%)	333 (12.2%)	0.02
Anxiety; n (%)	1,714 (13.6%)	64 (16.0%)	-0.07	1,977 (10.5%)	79 (10.9%)	-0.01	7,201 (11.0%)	208 (13.1%)	-0.06	10892 (11.2%)	351 (12.9%)	-0.05
Sleep_Disorder; n (%)	1,002 (8.0%)	11 (2.8%)	0.23	1,800 (9.5%)	28 (3.9%)	0.23	4,455 (6.8%)	57 (3.6%)	0.14	7257 (7.5%)	96 (3.5%)	0.18
Dementia; n (%)	988 (7.9%)	22 (5.5%)	0.10	717 (3.8%)	31 (4.3%)	-0.03	9,297 (14.2%)	196 (12.3%)	0.06	11002 (11.4%)	249 (9.2%)	0.07
Delirium; n (%)	319 (2.5%)	7 (1.8%)	0.05	294 (1.6%)	13 (1.8%)	-0.02	2,379 (3.6%)	60 (3.8%)	-0.01	2992 (3.1%)	80 (2.9%)	0.01
Psychosis; n (%)	275 (2.2%)	8 (2.0%)	0.01	195 (1.0%)	3 (0.4%)	0.07	1,851 (2.8%)	33 (2.1%)	0.05	2321 (2.4%)	44 (1.6%)	0.06
Obesity; n (%)	2,754 (21.9%)	86 (21.5%)	0.01	3,425 (18.1%)	137 (18.8%)	-0.02	9,371 (14.3%)	242 (15.2%)	-0.03	15550 (16.1%)	465 (17.1%)	-0.03
Overweight; n (%)	538 (4.3%)	23 (5.8%)	-0.07	459 (2.4%)	24 (3.3%)	-0.05	59 (3.7%)	3158 (3.3%)	-0.02	3158 (3.3%)	106 (3.9%)	-0.03
Smoking; n (%)	2,612 (20.8%)	94 (23.5%)	-0.07	2,264 (12.0%)	86 (11.8%)	0.01	14,702 (22.5%)	446 (28.0%)	-0.13	19578 (20.2%)	626 (23.0%)	-0.07
Alcohol abuse or dependence; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	13 (0.0%)	1 (0.1%)	-0.04	13 (0.0%)	1 (0.0%)	#DIV/0!
Drug abuse or dependence; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
COPD; n (%)	1,828 (14.6%)	49 (12.2%)	0.07	1,476 (7.8%)	44 (6.1%)	0.07	10,257 (15.7%)	281 (17.7%)	-0.05	13561 (14.0%)	374 (13.8%)	0.01
Asthma; n (%)	1,147 (9.1%)	44 (11.0%)	-0.06	1,506 (8.0%)	47 (6.5%)	0.06	4,978 (7.6%)	135 (8.5%)	-0.03	7631 (7.9%)	226 (8.3%)	-0.01
Obstructive sleep apnea; n (%)	1,369 (10.9%)	45 (11.2%)	-0.01	1,836 (9.7%)	57 (7.8%)	0.07	4,452 (6.8%)	120 (7.5%)	-0.03	7657 (7.9%)	222 (8.2%)	-0.01
Pneumonia; n (%)	1,066 (8.5%)	37 (9.2%)	-0.02	1,329 (7.0%)	58 (8.0%)	-0.04	5,876 (9.0%)	142 (8.9%)	0.00	8271 (8.5%)	237 (8.7%)	-0.01
<b>Other Medications</b>												
Use of ACE inhibitors; n (%)	2,869 (22.8%)	77 (19.2%)	0.09	3,586 (19.0%)	100 (13.8%)	0.14	17,313 (26.5%)	400 (25.1%)	0.03	23768 (24.5%)	577 (21.2%)	0.08
Use of ARBs; n (%)	1,610 (12.8%)	44 (11.0%)	0.06	2,144 (11.4%)	71 (9.8%)	0.05	10,615 (16.2%)	307 (19.3%)	-0.08	14369 (14.8%)	422 (15.5%)	-0.02
Use of Loop Diuretics - United; n (%)	1,703 (13.6%)	38 (9.5%)	0.13	1,707 (9.0%)	50 (6.9%)	0.08	12,745 (19.5%)	295 (18.5%)	0.03	16155 (16.7%)	383 (14.1%)	0.07
Use of other diuretics- United; n (%)	276 (2.2%)	9 (2.2%)	0.00	366 (1.9%)	9 (1.2%)	0.06	1,909 (2.9%)	55 (3.5%)	-0.03	2551 (2.6%)	73 (2.7%)	-0.01
Use of nitrates-United; n (%)	342 (2.7%)	3 (0.8%)	0.15	365 (1.9%)	10 (1.4%)	0.04	3,101 (4.7%)	80 (5.0%)	-0.01	3808 (3.9%)	93 (3.4%)	0.03
Use of other hypertension drugs; n (%)	520 (4.1%)	16 (4.0%)	0.01	444 (2.4%)	13 (1.8%)	0.04	3,247 (5.0%)	80 (5.0%)	0.00	4211 (4.3%)	109 (4.0%)	0.02
Use of Anti-arrhythmics; n (%)	176 (1.4%)	6 (1.5%)	-0.01	211 (1.1%)	16 (2.2%)	-0.09	1,375 (2.1%)	42 (2.6%)	-0.03	1762 (1.8%)	64 (2.4%)	-0.04
Use of COPD/asthma meds- United; n (%)	2,066 (16.5%)	60 (15.0%)	0.04	2,940 (15.6%)	110 (15.1%)	0.01	12,191 (18.6%)	332 (20.9%)	-0.06	17197 (17.8%)	502 (18.5%)	-0.02
Use of statins; n (%)	4,290 (34.2%)	120 (30.0%)	0.09	5,037 (26.7%)	153 (21.0%)	0.13	27,479 (42.0%)	643 (40.4%)	0.03	36806 (38.0%)	916 (33.7%)	0.09
Use of other lipid-lowering drugs; n (%)	552 (4.4%)	21 (5.2%)	-0.04	857 (4.5%)	19 (2.6%)	0.10	3,697 (5.6%)	88 (5.5%)	0.00	5106 (5.3%)	128 (4.7%)	0.03
Use of antiplatelet agents; n (%)	574 (4.6%)	21 (5.2%)	-0.03	859 (4.6%)	42 (5.8%)	-0.05	4,480 (6.8%)	139 (8.7%)	-0.07	5913 (6.1%)	202 (7.4%)	-0.05
Use of heparin and other low-molecular weight heparins; n (%)	4,744 (37.8%)	93 (23.2%)	0.32	22 (0.1%)	0 (0.0%)	0.04	24,694 (37.7%)	299 (18.8%)	0.43	29460 (30.4%)	392 (14.4%)	0.39
Use of NSAIDs; n (%)	1,843 (14.7%)	81 (20.2%)	-0.15	3,344 (17.7%)	161 (22.1%)	-0.11	8,958 (13.7%)	279 (17.5%)	-0.10	14145 (14.6%)	521 (19.2%)	-0.12
Use of oral corticosteroids; n (%)	2,853 (22.7%)	97 (24.5%)	-0.04	4,300 (22.8%)	179 (24.6%)	-0.04	16,673 (25.5%)	458 (28.8%)	-0.07	23826 (24.6%)	734 (27.0%)	-0.05
Use of bisphosphonate (United); n (%)	363 (2.9%)	8 (2.0%)	0.06	291 (1.5%)	9 (1.2%)	0.03	2,676 (4.1%)	54 (3.4%)	0.04	3330 (3.4%)	71 (2.6%)	0.05
Use of opioids- United; n (%)	4,758 (37.9%)	159 (39.8%)	-0.04	8,083 (42.8%)	301 (41.4%)	0.03	23,923 (36.6%)	635 (39.9%)	-0.07	36764 (38.0%)	1095 (40.3%)	-0.05
Use of antidepressants; n (%)	3,087 (24.6%)	94 (23.5%)	0.03	4,318 (22.9%)	149 (20.5%)	0.06	19,013 (29.1%)	466 (29.3%)	0.00	26418 (27.3%)	709 (26.1%)	0.03
Use of antipsychotics; n (%)	487 (3.9%)	16 (4.0%)	-0.01	500 (2.6%)	15 (2.1%)	0.03	3,676 (5.6%)	77 (4.8%)	0.04	4663 (4.8%)	108 (4.0%)	0.04
<b>Labs</b>												
Lab values- HbA1c (n%) v3; n (%)	1,354 (10.8%)	41 (10.2%)	0.02	142 (0.8%)	3 (0.4%)	0.05	N/A	N/A	#VALUE!	1,496 (4.8%)	044 (3.9%)	0.04
Lab values- HbA1c (n%) (within 3 months) v3; n (%)	844 (6.7%)	27 (6.8%)	0.00	95 (0.5%)	1 (0.1%)	0.07	N/A	N/A	#VALUE!	939 (3.0%)	028 (2.5%)	0.03
Lab values- HbA1c (n%) (within 6 months) v3; n (%)	1,354 (10.8%)	41 (10.2%)	0.02	142 (0.8%)	3 (0.4%)	0.05	N/A	N/A	#VALUE!	1,496 (4.8%)	044 (3.9%)	0.04
Lab values- BNP; n (%)	123 (1.0%)	8 (2.0%)	-0.08	15 (0.1%)	2 (0.3%)	-0.04	N/A	N/A	#VALUE!	138 (0.4%)	010 (0.9%)	-0.06
Lab values- BNP (within 3 months); n (%)	100 (0.8%)	4 (1.0%)	-0.02	11 (0.1%)	1 (0.1%)	0.00	N/A	N/A	#VALUE!	111 (0.4%)	005 (0.4%)	0.00
Lab values- BNP (within 6 months); n (%)	123 (1.0%)	8 (2.0%)	-0.08	15 (0.1%)	2 (0.3%)	-0.04	N/A	N/A	#VALUE!	138 (0.4%)	010 (0.9%)	-0.06
Lab values- BUN (mg/dl); n (%)	2,913 (23.2%)	123 (30.8%)	-0.17	194 (1.0%)	6 (0.8%)	0.02	N/A	N/A	#VALUE!	3,107 (9.9%)	129 (11.4%)	-0.05
Lab values- BUN (mg/dl) (within 3 months); n (%)	2,019 (16.1%)	87 (21.8%)	-0.15	142 (0.8%)	4 (0.6%)	0.02	N/A	N/A	#VALUE!	2,161 (6.9%)	091 (8.1%)	-0.05
Lab values- BUN (mg/dl) (within 6 months); n (%)	2,913 (23.2%)	123 (30.8%)	-0.17	194 (1.0%)	6 (0.8%)	0.02	N/A	N/A	#VALUE!	3,107 (9.9%)	129 (11.4%)	-0.05
Lab values- Creatinine (mg/dl) v2; n (%)	2,983 (23.8%)	128 (32.0%)	-0.18	199 (1.1%)	6 (0.8%)	0.03	N/A	N/A	#VALUE!	3,182 (10.1%)	134 (11.9%)	-0.06
Lab values- Creatinine (mg/dl) (within 3 months) v2; n (%)	2,070 (16.5%)	93 (23.2%)	-0.17	145 (0.8%)	4 (0.6%)	0.02	N/A	N/A	#VALUE!	2,215 (7.0%)	097 (8.6%)	-0.06
Lab values- Creatinine (mg/dl) (within 6 months) v2; n (%)	2,983 (23.8%)	128 (32.0%)	-0.18	199 (1.1%)	6 (0.8%)	0.03	N/A	N/A	#VALUE!	3,182 (10.1%)	134 (11.9%)	-0.06
Lab values- HDL level (mg/dl); n (%)	1,798 (14.3%)	75 (18.8%)	-0.12	110 (0.6%)	3 (0.4%)	0.03	N/A	N/A	#VALUE!	1,908 (6.1%)	078 (6.9%)	-0.03
Lab values- HDL level (mg/dl) (within 3 months); n (%)	1,041 (8.3%)	46 (11.5%)	-0.11	67 (0.4%)	1 (0.1%)	0.06	N/A	N/A	#VALUE!	1,108 (3.5%)	047 (4.2%)	-0.04
Lab values- HDL level (mg/dl) (within 6 months); n (%)	1,798 (14.3%)	75 (18.8%)	-0.12	110 (0.6%)	3 (0.4%)	0.03	N/A	N/A	#VALUE!	1,908 (6.1%)	078 (6.9%)	-0.03
Lab values- LDL level (mg/dl) v2; n (%)	1,907 (15.2%)	78 (19.5%)	-0.11	128 (0.7%)	3 (0.4%)	0.04	N/A	N/A	#VALUE!	2,035 (6.5%)	081 (7.2%)	-0.03
Lab values- LDL level (mg/dl) (within 3 months) v2; n (%)	1,101 (8.8%)	50 (12.5%)	-0.12	77 (0.4%)	1 (0.1%)	0.06	N/A	N/A	#VALUE!	1,178 (3.7%)	051 (4.5%)	-0.04
Lab values- LDL level (mg/dl) (within 6 months) v2; n (%)	1,907 (15.2%)	78 (19.5%)	-0.11	128 (0.7%)	3 (0.4%)	0.04	N/A	N/A	#VALUE!	2,035 (6.5%)	081 (7.2%)	-0.03
Lab values- NT-proBNP; n (%)	27 (0.2%)	0 (0.0%)	0.06	1 (0.0%)	0 (0.0%)	#DIV/0!	N/A	N/A	#VALUE!	28 (0.1%)	0 (0.0%)	0.04
Lab values- NT-proBNP (within 3 months); n (%)	22 (0.2%)	0 (0.0%)	0.06	0 (0.0%)	0 (0.0%)	#DIV/0!	N/A	N/A	#VALUE!	22 (0.1%)	0 (0.0%)	-
Lab values- NT-proBNP (within 6 months); n (%)	27 (0.2%)	0 (0.0%)	0.06	1 (0.0%)	0 (0.0%)	#DIV/0!	N/A	N/A	#VALUE!	28 (0.1%)	0 (0.0%)	-
Lab values- Total cholesterol (mg/dl) v2; n (%)	1,844 (14.7%)	78 (19.5%)	-0.13	107 (0.6%)	3 (0.4%)	0.03	N/A	N/A	#VALUE!	1,951 (6.2%)	081 (7.2%)	-0.04
Lab values- Total cholesterol (mg/dl) (within 3 months) v2; n (%)	1,072 (8.5%)	50 (12.5%)	-0.13	65 (0.3%)	1 (0.1%)	0.04	N/A	N/A	#VALUE!	1,137 (3.6%)	051 (4.5%)	-0.05
Lab values- Total cholesterol (mg/dl) (within 6 months) v2; n (%)	1,844 (14.7%)	78 (19.5%)	-0.13	107 (0.6%)	3 (0.4%)	0.03	N/A	N/A	#VALUE!	1,951 (6.2%)	081 (7.2%)	-0.04
Lab values- Triglyceride level (mg/dl); n (%)	1,803 (14.4%)	78 (19.5%)	-0.14	106 (0.6%)	3 (0.4%)	0.03	N/A	N/A	#VALUE!	1,909 (6.1%)	081 (7.2%)	-0.04
Lab values- Triglyceride level (mg/dl) (within 3 months); n (%)	1,048 (8.3%)	50 (12.5%)	-0.14	63 (0.3%)	1 (0.1%)	0.04	N/A	N/A	#VALUE!	1,111 (3.5%)	051 (4.5%)	-0.05

# Appendix B

Lab values- Triglyceride level (mg/dl) (within 6 months); n (%)	1,803 (14.4%)	78 (19.5%)	-0.14	106 (0.6%)	3 (0.4%)	0.03	N/A	N/A	#VALUE!	1,909 (6.1%)	081 (7.2%)	-0.04
Lab result number- HbA1c (%) mean (only 2 to 20 included) v4	1,343	41		140	3		N/A	N/A		1,483	44	
...mean (sd)	6.41 (1.25)	6.18 (0.73)	0.22	7.02 (1.62)	5.93 (0.40)	0.92	N/A	N/A	#VALUE!	6.47 (1.29)	6.16 (0.73)	0.30
...Missing; n (%)	11,216 (89.3%)	359 (89.8%)	-0.02	18,734 (99.3%)	724 (99.6%)	-0.04	N/A	N/A	#VALUE!	29,950 (95.3%)	1,083 (96.1%)	-0.04
Lab result number- BNP mean v2	123	8		15	2		N/A	N/A		138	10	
...mean (sd)	192.47 (369.22)	134.34 (166.13)	0.20	169.87 (442.05)	0.00 (0.00)	0.54	N/A	N/A	#VALUE!	190.01 (378.76)	107.47 (166.13)	0.28
...Missing; n (%)	12,436 (99.0%)	392 (98.0%)	0.08	18,859 (99.9%)	725 (99.7%)	0.04	N/A	N/A	#VALUE!	31,295 (99.6%)	1,117 (99.1%)	0.06
Lab result number- BUN (mg/dl) mean v2	2,913	123		194	6		N/A	N/A		3,107	129	
...mean (sd)	16.64 (5.97)	15.98 (5.29)	0.12	17.10 (7.20)	13.88 (2.72)	0.59	N/A	N/A	#VALUE!	16.67 (6.05)	15.88 (5.23)	0.14
...Missing; n (%)	9,646 (76.8%)	277 (69.2%)	0.17	18,680 (99.0%)	721 (99.2%)	-0.02	N/A	N/A	#VALUE!	28,326 (90.1%)	998 (88.6%)	0.05
Lab result number- Creatinine (mg/dl) mean (only 0.1 to 15 included) v3	2,949	128		198	6		N/A	N/A		3,147	134	
...mean (sd)	0.92 (0.23)	0.92 (0.18)	0.00	0.93 (0.25)	0.87 (0.14)	0.30	N/A	N/A	#VALUE!	0.92 (0.23)	0.92 (0.18)	0.00
...Missing; n (%)	9,610 (76.5%)	272 (68.0%)	0.19	18,676 (99.0%)	721 (99.2%)	-0.02	N/A	N/A	#VALUE!	28,286 (90.0%)	993 (88.1%)	0.06
Lab result number- HDL level (mg/dl) mean (only <=5000 included) v2	1,798	75		110	3		N/A	N/A		1,908	78	
...mean (sd)	53.28 (17.20)	54.91 (14.00)	-0.10	47.03 (15.15)	53.67 (10.26)	-0.51	N/A	N/A	#VALUE!	52.92 (17.09)	54.86 (14.01)	-0.12
...Missing; n (%)	10,761 (85.7%)	325 (81.2%)	0.12	18,764 (99.4%)	724 (99.6%)	-0.03	N/A	N/A	#VALUE!	29,525 (93.9%)	1,049 (93.1%)	0.03
Lab result number- LDL level (mg/dl) mean (only <=5000 included) v2	1,851	76		103	3		N/A	N/A		1,954	79	
...mean (sd)	100.71 (36.46)	103.41 (36.79)	-0.07	98.61 (40.99)	104.33 (41.40)	-0.14	N/A	N/A	#VALUE!	100.60 (36.72)	103.44 (37.16)	-0.08
...Missing; n (%)	10,708 (85.3%)	324 (81.0%)	0.12	18,771 (99.5%)	724 (99.6%)	-0.01	N/A	N/A	#VALUE!	29,479 (93.8%)	1,048 (93.0%)	0.03
Lab result number- Total cholesterol (mg/dl) mean (only <=5000 included) v2	1,841	78		107	3		N/A	N/A		1,948	81	
...mean (sd)	182.43 (42.98)	187.48 (39.96)	-0.12	180.30 (59.20)	187.67 (27.61)	-0.16	N/A	N/A	#VALUE!	182.31 (44.03)	187.49 (39.95)	-0.12
...Missing; n (%)	10,718 (85.3%)	322 (80.5%)	0.13	18,767 (99.4%)	724 (99.6%)	-0.03	N/A	N/A	#VALUE!	29,485 (93.8%)	1,046 (92.8%)	0.04
Lab result number- Triglyceride level (mg/dl) mean (only <=5000 included) v2	1,803	78		106	3		N/A	N/A		1,909	81	
...mean (sd)	137.59 (83.23)	145.68 (93.13)	-0.09	154.79 (111.79)	147.00 (50.86)	0.09	N/A	N/A	#VALUE!	138.55 (85.07)	145.73 (92.89)	-0.08
...Missing; n (%)	10,756 (85.6%)	322 (80.5%)	0.14	18,768 (99.4%)	724 (99.6%)	-0.03	N/A	N/A	#VALUE!	29,524 (93.9%)	1,046 (92.8%)	0.04
Lab result number- Hemoglobin mean (only >0 included)	2,383	106		163	6		N/A	N/A		2,546	112	
...mean (sd)	13.65 (1.74)	13.90 (1.70)	-0.15	13.38 (1.68)	13.42 (1.17)	-0.03	N/A	N/A	#VALUE!	13.63 (1.74)	13.87 (1.69)	-0.14
...Missing; n (%)	10,176 (81.0%)	294 (73.5%)	0.18	18,711 (99.1%)	721 (99.2%)	-0.01	N/A	N/A	#VALUE!	28,887 (91.9%)	1,015 (90.1%)	0.06
Lab result number- Serum sodium mean (only > 90 and <190 included)	2,809	122		190	6		N/A	N/A		2,999	128	
...mean (sd)	140.39 (2.82)	140.62 (2.21)	-0.09	139.45 (2.80)	139.19 (2.10)	0.11	N/A	N/A	#VALUE!	140.33 (2.82)	140.55 (2.21)	-0.09
...Missing; n (%)	9,750 (77.6%)	278 (69.5%)	0.18	18,684 (99.0%)	721 (99.2%)	-0.02	N/A	N/A	#VALUE!	28,434 (90.5%)	999 (88.6%)	0.06
Lab result number- Albumin mean (only >0 and <=10 included)	2,555	122		149	3		N/A	N/A		2,704	125	
...mean (sd)	4.10 (0.38)	4.21 (0.37)	-0.29	3.98 (0.55)	3.90 (0.35)	0.17	N/A	N/A	#VALUE!	4.09 (0.39)	4.20 (0.37)	-0.29
...Missing; n (%)	10,004 (79.7%)	278 (69.5%)	0.24	18,725 (99.2%)	724 (99.6%)	-0.05	N/A	N/A	#VALUE!	28,729 (91.4%)	1,002 (88.9%)	0.08
Lab result number- Glucose (fasting or random) mean (only 10-1000 included)	2,793	122		194	7		N/A	N/A		2,987	129	
...mean (sd)	108.41 (36.03)	102.95 (22.39)	0.18	129.30 (53.76)	116.12 (16.32)	0.33	N/A	N/A	#VALUE!	109.77 (37.44)	103.66 (22.23)	0.20
...Missing; n (%)	9,766 (77.8%)	278 (69.5%)	0.19	18,680 (99.0%)	720 (99.0%)	0.00	N/A	N/A	#VALUE!	28,446 (90.5%)	998 (88.6%)	0.06
Lab result number- Potassium mean (only 1-7 included)	2,957	129		189	6		N/A	N/A		3,146	135	
...mean (sd)	4.33 (0.41)	4.35 (0.43)	-0.05	4.29 (0.41)	4.30 (0.28)	-0.03	N/A	N/A	#VALUE!	4.33 (0.41)	4.35 (0.43)	-0.05
...Missing; n (%)	9,602 (76.5%)	271 (67.8%)	0.20	18,685 (99.0%)	721 (99.2%)	-0.02	N/A	N/A	#VALUE!	28,287 (90.0%)	992 (88.0%)	0.06
<b>Comorbidity Scores</b>												
Combined comorbidity score, 365 days Copy												
...mean (sd)	1.79 (2.15)	1.83 (2.15)	-0.02	1.14 (1.88)	1.40 (1.87)	-0.14	255.04 (382.17)	243.82 (378.73)	0.03	172.74 (314.11)	143.40 (289.87)	0.10
Non-Frailty; n (%)	6,140 (48.9%)	194 (48.5%)	0.01	8,179 (43.3%)	292 (40.2%)	0.06	1,696 (2.6%)	33 (2.1%)	0.03	16,015 (16.5%)	519 (19.1%)	-0.07
Frailty Score (mean): Empirical Version 365 days, v2												
...mean (sd)	0.18 (0.07)	0.17 (0.07)	0.14	0.16 (0.06)	0.15 (0.05)	0.18	0.09 (0.07)	0.08 (0.07)	0.14	0.12 (0.07)	0.11 (0.07)	0.14
<b>Healthcare Utilization</b>												
Any hospitalization; n (%)	5,166 (41.1%)	201 (50.2%)	-0.18	7,772 (41.2%)	313 (43.1%)	-0.04	28,960 (44.3%)	828 (52.0%)	-0.15	41,898 (43.3%)	1,342 (49.4%)	-0.12
Any hospitalization within prior 30 days; n (%)	4,405 (35.1%)	170 (42.5%)	-0.15	6,695 (35.5%)	267 (36.7%)	-0.02	22,606 (34.5%)	637 (40.0%)	-0.11	33706 (34.8%)	1074 (39.5%)	-0.10
Any hospitalization during prior 31-180 days; n (%)	1,178 (9.4%)	41 (10.2%)	-0.03	1,506 (8.0%)	66 (9.1%)	-0.04	9,511 (14.5%)	272 (17.1%)	-0.07	12195 (12.6%)	379 (13.9%)	-0.04
Internal medicine/family medicine visits; n (%)	10,558 (84.1%)	334 (83.5%)	0.02	15,210 (80.6%)	528 (72.6%)	0.19	57,081 (87.2%)	1,424 (89.4%)	-0.07	82849 (85.5%)	2286 (84.1%)	0.04
Internal medicine/family medicine visits (30 days prior) v2; n (%)	8,811 (70.2%)	287 (71.8%)	-0.04	11,692 (61.9%)	417 (57.4%)	0.09	45,741 (69.9%)	1,222 (76.8%)	-0.16	66244 (68.4%)	1926 (70.8%)	-0.05
Internal medicine/family medicine visits (31 to 180 days prior) v2; n (%)	8,508 (67.7%)	246 (61.5%)	0.13	12,135 (64.3%)	405 (55.7%)	0.18	47,557 (72.7%)	1,155 (72.6%)	0.00	68200 (70.4%)	1806 (66.4%)	0.09
Cardiologist visit; n (%)	5,451 (43.4%)	198 (49.5%)	-0.12	4,402 (23.3%)	170 (23.4%)	0.00	29,552 (45.2%)	852 (53.5%)	-0.17	39405 (40.7%)	1220 (44.9%)	-0.08
Number of Cardiologist visits (30 days prior); n (%)	3,913 (31.2%)	160 (40.0%)	-0.18	2,711 (14.4%)	118 (16.2%)	-0.05	18,575 (28.4%)	621 (39.0%)	-0.23	25199 (26.0%)	899 (33.1%)	-0.16
Number of Cardiologist visits (31 to 180 days prior); n (%)	2,718 (21.6%)	80 (20.0%)	0.04	2,479 (13.1%)	89 (12.2%)	0.03	18,204 (27.8%)	479 (30.1%)	-0.05	23401 (24.2%)	648 (23.8%)	0.01
Electrocardiogram v2; n (%)	6,421 (51.1%)	226 (56.5%)	-0.11	6,680 (35.4%)	284 (39.1%)	-0.08	34,182 (52.2%)	1,001 (62.9%)	-0.22	47283 (48.8%)	1511 (55.6%)	-0.14
Use of glucose test strips; n (%)	107 (0.9%)	5 (1.2%)	-0.03	126 (0.7%)	2 (0.3%)	0.06	719 (1.1%)	20 (1.3%)	-0.02	952 (1.0%)	27 (1.0%)	0.00
Dialysis; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	1 (0.0%)	0 (0.0%)	#DIV/0!	1 (0.0%)	0 (0.0%)	#DIV/0!
number of different/distinct medication prescriptions												
...mean (sd)	7.97 (4.88)	7.75 (5.15)	0.04	7.81 (4.94)	7.34 (4.82)	0.10	8.96 (4.95)	9.31 (4.99)	-0.07	8.61 (4.94)	8.55 (4.97)	0.00
Number of Hospitalizations												
...mean (sd)	0.49 (0.68)	0.59 (0.67)	-0.15	0.47 (0.63)	0.50 (0.64)	-0.05	0.57 (0.76)	0.67 (0.82)	-0.13	0.54 (0.73)	0.61 (0.75)	0.00

# Appendix B

Number of hospital days												
...mean (sd)	2.38 (4.28)	2.28 (3.48)	0.03	2.28 (4.36)	1.95 (4.02)	0.08	2.73 (4.90)	2.74 (4.25)	0.00	2.60 (4.72)	2.46 (4.08)	0.00
Number of Emergency Department (ED) visits v3												
...mean (sd)	1.21 (1.75)	1.50 (2.07)	-0.15	1.08 (3.19)	1.14 (2.87)	-0.02	1.31 (1.90)	1.61 (2.03)	-0.15	1.25 (2.20)	1.47 (2.29)	0.00
Number of Office visits												
...mean (sd)	5.14 (4.58)	5.47 (4.68)	-0.07	5.05 (4.52)	4.74 (4.30)	0.07	11.91 (13.83)	13.32 (15.87)	-0.09	9.70 (11.66)	9.87 (12.48)	0.00
Number of internal medicine/family medicine visits												
...mean (sd)	10.15 (13.39)	8.50 (12.76)	0.13	6.81 (11.07)	5.46 (9.47)	0.13	9.72 (11.37)	9.24 (10.36)	0.04	9.21 (11.60)	8.12 (10.52)	0.00
Number of Cardiologist visits												
...mean (sd)	1.69 (3.88)	1.82 (3.21)	-0.04	0.74 (2.40)	0.81 (2.34)	-0.03	1.95 (4.28)	2.51 (4.62)	-0.13	1.68 (3.93)	1.95 (3.93)	0.00
Number electrocardiograms received v2												
...mean (sd)	1.14 (1.80)	1.36 (1.80)	-0.12	0.67 (1.22)	0.76 (1.18)	-0.07	1.17 (1.67)	1.51 (1.86)	-0.19	1.07 (1.61)	1.29 (1.70)	0.00
Number of HbA1c tests ordered												
...mean (sd)	0.29 (0.60)	0.29 (0.62)	0.00	0.19 (0.49)	0.18 (0.46)	0.02	0.34 (0.66)	0.38 (0.69)	-0.06	0.30 (0.62)	0.31 (0.63)	0.00
Number of glucose tests ordered												
...mean (sd)	0.19 (3.50)	0.18 (1.01)	0.00	0.10 (0.55)	0.12 (0.46)	-0.04	0.13 (0.65)	0.16 (0.61)	-0.05	0.13 (1.39)	0.15 (0.65)	0.00
Number of lipid tests ordered												
...mean (sd)	0.45 (0.70)	0.48 (0.69)	-0.04	0.33 (0.68)	0.30 (0.61)	0.05	0.49 (0.67)	0.54 (0.72)	-0.07	0.45 (0.68)	0.47 (0.69)	0.00
Total N distinct ICD9/ICD10 diagnoses at the 3rd digit level Copy												
...mean (sd)	7.58 (9.90)	10.04 (11.37)	-0.23	4.03 (7.13)	5.51 (8.06)	-0.19	9.32 (11.36)	12.72 (12.88)	-0.28	8.06 (10.48)	10.40 (11.56)	0.00
For PS												
Hemorrhagic stroke+Other cerebrovascular diseases+Cerebrovascular procedure (for PS); n (%)	202 (1.6%)	7 (1.8%)	-0.02	217 (1.1%)	10 (1.4%)	-0.03	1,509 (2.3%)	33 (2.1%)	0.01	1928 (2.0%)	50 (1.8%)	0.01
immobilization; n (%)	863 (6.9%)	29 (7.2%)	-0.01	1,257 (6.7%)	52 (7.2%)	-0.02	4,469 (6.8%)	110 (6.9%)	0.00	1,257 (6.7%)	52 (7.2%)	-0.02
Occurrence of creatinine tests ordered (for PS); n (%)	798 (6.4%)	33 (8.2%)	-0.07	1,158 (6.1%)	94 (12.9%)	-0.23	5,855 (8.9%)	169 (10.6%)	-0.06	7811 (8.1%)	296 (10.9%)	-0.10
Occurrence of BUN tests ordered (for PS); n (%)	345 (2.7%)	14 (3.5%)	-0.05	543 (2.9%)	40 (5.5%)	-0.13	2,956 (4.5%)	87 (5.5%)	-0.05	3844 (4.0%)	141 (5.2%)	-0.06
Occurrence of chronic renal insufficiency w/o CKD (for PS) v2; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
Chronic kidney disease Stage 1-2 (for PS); n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
Chronic kidney disease Stage 3-6 (for PS); n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
Acute kidney injury; n (%)	14 (0.1%)	0 (0.0%)	0.04	13 (0.1%)	0 (0.0%)	0.00	94 (0.1%)	3 (0.2%)	-0.03	13 (0.1%)	1 (0.1%)	0.00
Bladder stones+Kidney stones (for PS); n (%)	224 (1.8%)	12 (3.0%)	-0.08	292 (1.5%)	11 (1.5%)	0.00	1,199 (1.8%)	37 (2.3%)	-0.04	1715 (1.8%)	60 (2.2%)	-0.03
Alcohol abuse or dependence+Drug abuse or dependence (for PS); n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	13 (0.0%)	1 (0.1%)	-0.04	13 (0.0%)	1 (0.0%)	#DIV/0!
Other atherosclerosis+Cardiac conduction disorders+Other CVD (for PS) v2 Copy; n (%)	2,812 (22.4%)	93 (23.2%)	-0.02	2,706 (14.3%)	109 (15.0%)	-0.02	13,267 (20.3%)	377 (23.7%)	-0.08	18785 (19.4%)	579 (21.3%)	-0.05
Previous cardiac procedure (CABG or PTCA or Stent) + History of CABG or PTCA (for PS) v3; n (%)	452 (3.6%)	10 (2.5%)	0.06	235 (1.2%)	11 (1.5%)	-0.03	3,807 (5.8%)	123 (7.7%)	-0.08	4494 (4.6%)	144 (5.3%)	-0.03
Diabetes with complication; n (%)	761 (6.1%)	19 (4.8%)	0.06	715 (3.8%)	15 (2.1%)	0.10	4,915 (7.5%)	123 (7.7%)	-0.01	715 (3.8%)	15 (2.1%)	0.10
Delirium + Psychosis (for PS); n (%)	536 (4.3%)	14 (3.5%)	0.04	448 (2.4%)	16 (2.2%)	0.01	3,785 (5.8%)	82 (5.2%)	0.03	4769 (4.9%)	112 (4.1%)	0.04
Any use of Meglitinides (for PS); n (%)	9 (0.1%)	0 (0.0%)	0.04	16 (0.1%)	0 (0.0%)	0.04	130 (0.2%)	2 (0.1%)	0.03	155 (0.2%)	2 (0.1%)	0.03
Any use of AGIs (for PS); n (%)	4 (0.0%)	0 (0.0%)	#DIV/0!	5 (0.0%)	0 (0.0%)	#DIV/0!	30 (0.0%)	0 (0.0%)	#DIV/0!	39 (0.0%)	0 (0.0%)	#DIV/0!
CKD stage 3-6 + dialysis (for PS); n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	1 (0.0%)	0 (0.0%)	#DIV/0!	1 (0.0%)	0 (0.0%)	#DIV/0!
Use of thiazide- United; n (%)	1,075 (8.6%)	38 (9.5%)	-0.03	1,344 (7.1%)	35 (4.8%)	0.10	6,824 (10.4%)	166 (10.4%)	0.00	9243 (9.5%)	239 (8.8%)	0.02
Use of beta blockers; n (%)	3,364 (26.8%)	89 (22.2%)	0.11	3,825 (20.3%)	135 (18.6%)	0.04	23,544 (36.0%)	582 (36.6%)	-0.01	30733 (31.7%)	806 (29.6%)	0.05
Use of calcium channel blockers; n (%)	2,231 (17.8%)	68 (17.0%)	0.02	2,626 (13.9%)	91 (12.5%)	0.04	15,179 (23.2%)	365 (22.9%)	0.01	20036 (20.7%)	524 (19.3%)	0.04
All antidiabetic medications except insulin; n (%)	1,512 (12.0%)	27 (6.8%)	0.18	1,900 (10.1%)	59 (8.1%)	0.07	9,285 (14.2%)	229 (14.4%)	-0.01	12697 (13.1%)	315 (11.6%)	0.05
DM Medications - Insulin Copy; n (%)	425 (3.4%)	9 (2.2%)	0.07	581 (3.1%)	12 (1.7%)	0.09	2,442 (3.7%)	52 (3.3%)	0.02	3448 (3.6%)	73 (2.7%)	0.05
Use of Low Intensity Statins; n (%)	2,730 (21.7%)	70 (17.5%)	0.11	3,029 (16.0%)	82 (11.3%)	0.14	18,159 (27.8%)	393 (24.7%)	0.07	23918 (24.7%)	545 (20.0%)	0.11
Use of High Intensity Statins; n (%)	1,618 (12.9%)	50 (12.5%)	0.01	2,005 (10.6%)	72 (9.9%)	0.02	9,675 (14.8%)	262 (16.5%)	-0.05	13298 (13.7%)	384 (14.1%)	-0.01
Malignant hypertension; n (%)	468 (3.7%)	4 (1.0%)	0.18	5,024 (26.6%)	64 (8.8%)	0.48	13,050 (19.9%)	171 (10.7%)	0.26	18542 (19.1%)	239 (8.8%)	0.30
Cardiovascular stress test; n (%)	81 (0.6%)	2 (0.5%)	0.01	100 (0.5%)	3 (0.4%)	0.01	570 (0.9%)	15 (0.9%)	0.00	751 (0.8%)	20 (0.7%)	0.01
Echocardiogram; n (%)	3,355 (26.7%)	131 (32.8%)	-0.13	4,243 (22.5%)	171 (23.5%)	-0.02	16,457 (25.1%)	542 (34.0%)	-0.20	24055 (24.8%)	844 (31.0%)	-0.14
Number of BNP tests												
...mean (sd)	0.10 (0.38)	0.11 (0.37)	-0.03	0.06 (0.34)	0.09 (0.31)	-0.09	0.12 (0.43)	0.15 (0.50)	-0.06	0.11 (0.41)	0.13 (0.44)	-0.05
Number of Cardiac biomarkers tests (troponin, CK-MBs, Myoglobin, CPK)												
...mean (sd)	0.32 (1.08)	0.44 (1.63)	-0.09	0.25 (0.89)	0.24 (0.74)	0.01	0.22 (0.55)	0.26 (0.59)	-0.07	0.24 (0.71)	0.28 (0.86)	0.00
Number of Ambulatory Blood pressure monitoring tests												
...mean (sd)	0.00 (0.05)	0.00 (0.05)	0.00	0.00 (0.04)	0.00 (0.05)	0.00	0.00 (0.03)	0.00 (0.00)	0.00	0.00 (0.04)	0.00 (0.03)	0.00
N of days on antihypertensive medications during baseline							0	0				
...mean (sd)	79.82 (80.23)	71.81 (80.61)	0.10	64.28 (78.46)	52.59 (73.78)	0.15	102.06 (78.84)	104.42 (78.60)	-0.03	91.82 (78.95)	85.76 (77.64)	0.00
N of days in database anytime prior							0	0				
...mean (sd)	1,790.71 (1,365.39)	1,879.61 (1,483.74)	-0.06	2,142.15 (1,446.67)	2,077.56 (1,420.98)	0.05	748.63 (585.17)	760.54 (524.10)	-0.02	1155.24 (938.49)	1277.31 (1011.96)	0.00
Mean Copay for per prescription cost (charges in U.S. \$) (180-1 day prior)							0	0				
...mean (sd)	25.10 (43.30)	29.60 (62.15)	-0.08	12.89 (19.50)	14.46 (21.55)	-0.08	110.01 (139.60)	105.75 (104.71)	0.03	80.08 (116.11)	70.14 (84.35)	0.00
...Missing; n (%)	1,152 (9.2%)	33 (8.2%)	0.04	1,835 (9.7%)	72 (9.9%)	-0.01	4,098 (6.3%)	65 (4.1%)	0.10	7085 (7.3%)	170 (6.3%)	0.04
Colonoscopy; n (%)	379 (3.0%)	15 (3.8%)	-0.04	650 (3.4%)	21 (2.9%)	0.03	2,246 (3.4%)	52 (3.3%)	0.01	3275 (3.4%)	88 (3.2%)	0.01
Fecal occult blood (FOB) test; n (%)	351 (2.8%)	12 (3.0%)	-0.01	468 (2.5%)	26 (3.6%)	-0.06	1,324 (2.0%)	44 (2.8%)	-0.05	2143 (2.2%)	82 (3.0%)	-0.05
Flu vaccine; n (%)	1,949 (15.5%)	76 (19.0%)	-0.09	1,922 (10.2%)	59 (8.1%)	0.07	18,232 (27.9%)	459 (28.8%)	-0.02	22103 (22.8%)	594 (21.8%)	0.02
Mammogram; n (%)	1,257 (10.0%)	32 (8.0%)	0.07	1,747 (9.3%)	66 (9.1%)	0.01	6,822 (10.4%)	174 (10.9%)	-0.02	9826 (10.1%)	272 (10.0%)	0.00
Pap smear; n (%)	402 (3.2%)	24 (6.0%)	-0.13	1,059 (5.6%)	43 (5.9%)	-0.01	1,338 (2.0%)	43 (2.7%)	-0.05	2799 (2.9%)	110 (4.0%)	-0.06
Pneumonia vaccine; n (%)	2,045 (16.3%)	89 (22.2%)	-0.15	1,392 (7.4%)	84 (11.6%)	-0.14	14,137 (21.6%)	448 (28.1%)	-0.15	17574 (18.1%)	621 (22.8%)	-0.12

# Appendix B

PSA test or Prostate exam for DRE; n (%)	1,248 (9.9%)	45 (11.2%)	-0.04	1,603 (8.5%)	52 (7.2%)	0.05	6,723 (10.3%)	213 (13.4%)	-0.10	9574 (9.9%)	310 (11.4%)	-0.05
Bone mineral density; n (%)	424 (3.4%)	11 (2.8%)	0.03	301 (1.6%)	7 (1.0%)	0.05	2,616 (4.0%)	75 (4.7%)	-0.03	3341 (3.4%)	93 (3.4%)	0.00
Use of CNS stimulants; n (%)	76 (0.6%)	6 (1.5%)	-0.09	184 (1.0%)	9 (1.2%)	-0.02	254 (0.4%)	6 (0.4%)	0.00	514 (0.5%)	21 (0.8%)	-0.04
Use of estrogens, progestins, androgens; n (%)	610 (4.9%)	29 (7.2%)	-0.10	1,772 (9.4%)	93 (12.8%)	-0.11	1,683 (2.6%)	63 (4.0%)	-0.08	4065 (4.2%)	185 (6.8%)	-0.11
Use of Angiogenesis inhibitors; n (%)	3 (0.0%)	0 (0.0%)	#DIV/0!	10 (0.1%)	0 (0.0%)	0.04	32 (0.0%)	0 (0.0%)	#DIV/0!	45 (0.0%)	0 (0.0%)	#DIV/0!
Use of Oral Immunosuppressants; n (%)	15 (0.1%)	1 (0.2%)	-0.03	52 (0.3%)	2 (0.3%)	0.00	42 (0.1%)	2 (0.1%)	0.00	109 (0.1%)	5 (0.2%)	-0.03
Use of fondaparinux or Bivalirudin; n (%)	43 (0.3%)	5 (1.2%)	-0.10	134 (0.7%)	7 (1.0%)	-0.03	196 (0.3%)	6 (0.4%)	-0.02	373 (0.4%)	18 (0.7%)	-0.04
Use of other direct thrombin inhibitors (Iepirudin, desirudin, argatroban); n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
Use of Ticagrelor ON CED; n (%)	7 (0.1%)	1 (0.2%)	-0.03	8 (0.0%)	2 (0.3%)	-0.08	3 (0.0%)	1 (0.1%)	-0.04	18 (0.0%)	4 (0.1%)	-0.04
Use of Ticagrelor; n (%)	14 (0.1%)	1 (0.2%)	-0.03	15 (0.1%)	4 (0.6%)	-0.08	63 (0.1%)	5 (0.3%)	-0.04	92 (0.1%)	10 (0.4%)	-0.06
Number of D-dimer tests												
...mean (sd)	0.10 (0.35)	0.24 (0.63)	-0.27	0.11 (0.38)	0.14 (0.40)	-0.08	0.10 (0.33)	0.15 (0.49)	-0.12	0.10 (0.34)	0.16 (0.49)	0.00
Numbe of CRP, high-sensitivity CRP tests												
...mean (sd)	0.11 (0.52)	0.10 (0.38)	0.02	0.08 (0.41)	0.08 (0.34)	0.00	0.12 (0.55)	0.13 (0.50)	-0.02	0.11 (0.52)	0.11 (0.45)	0.00
Number of PT or aPTT tests												
...mean (sd)	2.89 (4.03)	0.83 (1.59)	0.67	1.91 (3.27)	0.56 (1.18)	0.55	2.50 (4.13)	0.52 (1.22)	0.65	2.44 (3.96)	0.58 (1.27)	0.01
Number of Bleeding time tests												
...mean (sd)	0.00 (0.01)	0.00 (0.00)	0.00	0.00 (0.01)	0.00 (0.00)	0.00	0.00 (0.01)	0.00 (0.00)	0.00	0.00 (0.01)	0.00 (0.00)	0.00
HAS-BLED Score (ICD-9 and ICD-10), 180 days												
...mean (sd)	2.61 (1.02)	2.53 (1.04)	0.08	2.15 (1.00)	2.09 (1.01)	0.06	3.22 (0.76)	3.29 (0.81)	-0.09	2.93 (0.85)	2.86 (0.90)	0.00
N of Generic name drugs												
...mean (sd)	16.82 (17.46)	14.16 (17.42)	0.15	12.61 (11.66)	10.41 (11.48)	0.19	17.66 (16.27)	17.15 (15.14)	0.03	16.57 (15.65)	14.91 (14.63)	0.00
N of Brand name drugs												
...mean (sd)	2.26 (4.40)	3.61 (5.24)	-0.28	2.19 (3.42)	3.14 (3.34)	-0.28	2.54 (4.39)	3.76 (4.92)	-0.26	2.44 (4.22)	3.57 (4.60)	0.00
Use of clopidogrel ; n (%)	378 (3.0%)	12 (3.0%)	0.00	446 (2.4%)	14 (1.9%)	0.03	3,206 (4.9%)	103 (6.5%)	-0.07	4030 (4.2%)	129 (4.7%)	-0.02
Systemic embolism; n (%)	301 (2.4%)	4 (1.0%)	0.11	364 (1.9%)	17 (2.3%)	-0.03	1,097 (1.7%)	24 (1.5%)	0.02	1762 (1.8%)	45 (1.7%)	0.01
DVT; n (%)	9,006 (71.7%)	284 (71.0%)	0.02	14,258 (75.5%)	531 (73.0%)	0.06	48,425 (74.0%)	1,249 (78.5%)	-0.11	71689 (74.0%)	2064 (75.9%)	-0.04
Post-thrombotic syndrome; n (%)	68 (0.5%)	4 (1.0%)	-0.06	66 (0.3%)	4 (0.6%)	-0.04	164 (0.3%)	7 (0.4%)	-0.02	66 (0.3%)	4 (0.6%)	-0.04
PE; n (%)	6,185 (49.2%)	189 (47.2%)	0.04	8,051 (42.7%)	336 (46.2%)	-0.07	27,050 (41.3%)	615 (38.6%)	0.06	41286 (42.6%)	1140 (41.9%)	0.01
Coagulation defects; n (%)	464 (3.7%)	17 (4.2%)	-0.03	686 (3.6%)	21 (2.9%)	0.04	1,656 (2.5%)	32 (2.0%)	0.03	686 (3.6%)	21 (2.9%)	0.04
Diabetes: 1 inpatient or 2 outpatient claims within 183 days; n (%)	2,289 (18.2%)	48 (12.0%)	0.17	2,570 (13.6%)	69 (9.5%)	0.13	15,045 (23.0%)	354 (22.2%)	0.02	19904 (20.5%)	471 (17.3%)	0.08
Intracranial or retroperitoneal hemorrhage: 1 inpatient or 2 outpatient claims within 183 days; n (%)	22 (0.2%)	1 (0.2%)	0.00	19 (0.1%)	1 (0.1%)	0.00	112 (0.2%)	2 (0.1%)	0.03	153 (0.2%)	4 (0.1%)	0.03
Peptic Ulcer Disease; n (%)	2,465 (19.6%)	68 (17.0%)	0.07	2,736 (14.5%)	97 (13.3%)	0.03	13,623 (20.8%)	334 (21.0%)	0.00	18824 (19.4%)	499 (18.4%)	0.03
Upper GI bleed; n (%)	9 (0.1%)	0 (0.0%)	0.04	14 (0.1%)	0 (0.0%)	0.04	49 (0.1%)	1 (0.1%)	0.00	72 (0.1%)	1 (0.0%)	0.04
Lower/ unspecified GI bleed; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
Urogenital bleed; n (%)	108 (0.9%)	4 (1.0%)	-0.01	187 (1.0%)	7 (1.0%)	0.00	748 (1.1%)	11 (0.7%)	0.04	1043 (1.1%)	22 (0.8%)	0.03
Other bleeds; n (%)	98 (0.8%)	0 (0.0%)	0.13	144 (0.8%)	2 (0.3%)	0.07	359 (0.5%)	6 (0.4%)	0.01	601 (0.6%)	8 (0.3%)	0.04
Prior cancer; n (%)	1,312 (10.4%)	46 (11.5%)	-0.04	1,457 (7.7%)	68 (9.4%)	-0.06	8,553 (13.1%)	279 (17.5%)	-0.12	11322 (11.7%)	393 (14.5%)	-0.08
Antibiotics; n (%)	5,047 (40.2%)	180 (45.0%)	#DIV/0!	7,975 (42.3%)	325 (44.7%)	-0.05	30,154 (46.1%)	839 (52.7%)	-0.03	7,975 (42.3%)	325 (44.7%)	-0.05
Aspirin; n (%)	71 (0.6%)	6 (1.5%)	-0.09	251 (1.3%)	21 (2.9%)	-0.11	217 (0.3%)	8 (0.5%)	-0.03	539 (0.6%)	35 (1.3%)	-0.07
Aspirin/dipyridamole; n (%)	16 (0.1%)	2 (0.5%)	-0.07	17 (0.1%)	2 (0.3%)	-0.04	140 (0.2%)	4 (0.3%)	-0.02	173 (0.2%)	8 (0.3%)	-0.02
Other antiplatelet agents; n (%)	32 (0.3%)	1 (0.2%)	0.02	43 (0.2%)	1 (0.1%)	0.03	252 (0.4%)	12 (0.8%)	-0.05	327 (0.3%)	14 (0.5%)	-0.03
PGP inhibitors; n (%)	2,599 (20.7%)	89 (22.2%)	-0.04	3,684 (19.5%)	156 (21.5%)	-0.05	16,200 (24.8%)	444 (27.9%)	-0.07	22483 (23.2%)	689 (25.3%)	-0.05
Other gastroprotective agents; n (%)	120 (1.0%)	4 (1.0%)	0.00	192 (1.0%)	9 (1.2%)	-0.02	817 (1.2%)	28 (1.8%)	-0.05	1129 (1.2%)	41 (1.5%)	-0.03
Number of lipid tests ordered												
...mean (sd)	0.45 (0.70)	0.48 (0.69)	-0.04	0.33 (0.68)	0.30 (0.61)	0.05	0.51 (0.73)	0.57 (0.79)	-0.08	0.47 (0.72)	0.48 (0.73)	0.00
Proton pump inhibitor; n (%)	2,635 (21.0%)	69 (17.2%)	0.10	3,554 (18.8%)	127 (17.5%)	0.03	17,747 (27.1%)	439 (27.6%)	-0.01	23936 (24.7%)	635 (23.4%)	0.03
H2 receptor antagonist; n (%)	428 (3.4%)	10 (2.5%)	0.05	563 (3.0%)	24 (3.3%)	-0.02	3,668 (5.6%)	88 (5.5%)	0.00	4659 (4.8%)	122 (4.5%)	0.01
Vitamin K therapy; n (%)	13 (0.1%)	0 (0.0%)	0.04	23 (0.1%)	0 (0.0%)	0.04	50 (0.1%)	1 (0.1%)	0.00	86 (0.1%)	1 (0.0%)	0.04
Number of INR (prothrombin) tests ordered												
...mean (sd)	2.64 (3.88)	0.47 (0.88)	0.77	1.67 (3.11)	0.35 (0.78)	0.58	2.46 (4.10)	0.46 (1.15)	0.66	2.33 (3.90)	0.43 (1.03)	0.01
Treating prescriber - Cardiologist; n (%)	3,970 (31.6%)	163 (40.8%)	-0.19	5,083 (26.9%)	207 (28.5%)	-0.04	18,575 (28.4%)	621 (39.0%)	-0.23	27628 (28.5%)	991 (36.4%)	-0.17
Treating prescriber - Primary Care Physician; n (%)	9,946 (79.2%)	327 (81.8%)	-0.07	7,669 (40.6%)	267 (36.7%)	0.08	22,033 (33.7%)	596 (37.4%)	-0.08	39648 (40.9%)	1190 (43.8%)	-0.06
Treating prescriber - Other; n (%)	11,618 (92.5%)	387 (96.8%)	-0.19	17,713 (93.8%)	696 (95.7%)	-0.09	60,900 (93.1%)	1,563 (98.2%)	-0.25	90231 (93.1%)	2646 (97.3%)	-0.20
Alpha blockers; n (%)	899 (7.2%)	27 (6.8%)	0.02	979 (5.2%)	23 (3.2%)	0.10	6,060 (9.3%)	159 (10.0%)	-0.02	7938 (8.2%)	209 (7.7%)	0.02
CHA2DS2 VASc score, 180 days, V												
...mean (sd)	3.00 (1.87)	1.87 (1.57)	0.65	2.83 (1.83)	1.72 (1.69)	0.63	3.54 (1.80)	2.80 (1.53)	0.44	3.33 (1.82)	2.37 (1.58)	0.01
Use of Prasugrel; n (%)	11 (0.1%)	1 (0.2%)	-0.03	28 (0.1%)	0 (0.0%)	0.04	0 (0.0%)	0 (0.0%)	#DIV/0!	39 (0.0%)	1 (0.0%)	#DIV/0!
Use of Loop Diuretics+other diuretics+other hypertension drugs; n (%)	2,198 (17.5%)	56 (14.0%)	0.10	2,239 (11.9%)	67 (9.2%)	0.09	15,727 (24.0%)	366 (23.0%)	0.02	20164 (20.8%)	489 (18.0%)	0.07
Commercial vs Medicare Advantage- Business Type Code - CORRECT ONE - OPTUM												
...Commercial; n (%)	4,542 (36.2%)	213 (53.3%)	-0.35	5,181 (27.5%)	164 (22.6%)	0.11	-	-	#VALUE!	9,723 (30.9%)	377 (33.5%)	-0.06
...Medicare Advantage; n (%)	8,017 (63.8%)	187 (46.8%)	0.35	13,693 (72.5%)	563 (77.4%)	-0.11	-	-	#VALUE!	21,710 (69.1%)	750 (66.5%)	0.06
Commercial vs Medicare Advantage- Business Type Code												
...COM = COMMERCIAL; n (%)	4,542 (36.2%)	213 (53.2%)	-0.35	-	-	-	-	-	#VALUE!	4,542 (36.2%)	213 (53.2%)	-0.35
...MCR = MEDICARE; n (%)	8,017 (63.8%)	187 (46.8%)	0.35	-	-	-	-	-	#VALUE!	8,017 (63.8%)	187 (46.8%)	0.35
...MCD = MEDICAID; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	-	-	-	-	-	#VALUE!	0 (0.0%)	0 (0.0%)	#DIV/0!
...NONE = NO BUSINESS LINE CODE (added in 2015); n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	-	-	-	-	-	#VALUE!	0 (0.0%)	0 (0.0%)	#DIV/0!
...UNK = UNKNOWN (added in 2015); n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	-	-	-	-	-	#VALUE!	0 (0.0%)	0 (0.0%)	#DIV/0!
Commercial vs Medicare Advantage- Data Type												
...1 - Fee For Service; n (%)	-	-		12,101 (64.1%)	426 (58.6%)	0.11	-	-		12,101 (64.1%)	426 (58.6%)	0.11

# Appendix B

...2 - Encounter; n (%)	-	-	1,592 (8.4%)	137 (18.8%)	-0.31	-	-	1,592 (8.4%)	137 (18.8%)	-0.31
...3 - Medicare; n (%)	-	-	4,564 (24.2%)	150 (20.6%)	0.09	-	-	4,564 (24.2%)	150 (20.6%)	0.09
...4 - Medicare Encounter; n (%)	-	-	617 (3.3%)	14 (1.9%)	0.09	-	-	617 (3.3%)	14 (1.9%)	0.09
Metropolitan Statistical Area - Urban (any MSA) vs Rural (non-MSA)										
...Urban; n (%)	-	-	13,765 (72.9%)	528 (72.6%)	0.01	-	-	13,765 (72.9%)	528 (72.6%)	0.01
...Rural; n (%)	-	-	889 (4.7%)	46 (6.3%)	-0.07	-	-	889 (4.7%)	46 (6.3%)	-0.07
...Unknown/Missing; n (%)	-	-	4,220 (22.4%)	153 (21.0%)	0.03	-	-	4,220 (22.4%)	153 (21.0%)	0.03

# Appendix B

PS-matched												
	Optum			MarketScan			Medicare			POOLED		
Variable	WARFARIN Copy	Dabigatran 150mg Copy	St. Diff.	Reference - warfarin Copy e	Dabigatran 150mg Copy	St. Diff.	Reference - warfarin Copy e	Dabigatran 150mg Copy	St. Diff.	Reference - warfarin Copy	Exposure - Dabigatran 150mg Copy	St. Diff.
Number of patients	387	387		711	711		1,577	1,577		2,675	2,675	
<b>Age</b>												
...mean (sd)	61.91 (15.63)	61.19 (15.85)	0.05	55.73 (15.87)	55.10 (15.33)	0.04	76.00 (8.02)	75.81 (7.72)	0.02	68.57 (11.84)	68.19 (11.57)	0.03
<b>Age categories without zero category</b>												
...18 - 54; n (%)	124 (32.0%)	129 (33.3%)	-0.03	333 (46.8%)	347 (48.8%)	-0.04	0 (0.0%)	0 (0.0%)	#DIV/0!	457 (17.1%)	476 (17.8%)	-0.02
...55 - 64; n (%)	84 (21.7%)	72 (18.6%)	0.08	211 (29.7%)	202 (28.4%)	0.03	0 (0.0%)	0 (0.0%)	#DIV/0!	295 (11.0%)	274 (10.2%)	0.03
...65 - 74; n (%)	91 (23.5%)	106 (27.4%)	-0.09	68 (9.6%)	79 (11.1%)	-0.05	789 (50.0%)	786 (49.8%)	0.00	948 (35.4%)	971 (36.3%)	-0.02
...≥ 75; n (%)	88 (22.7%)	80 (20.7%)	0.05	99 (13.9%)	83 (11.7%)	0.07	788 (50.0%)	791 (50.2%)	0.00	975 (36.4%)	954 (35.7%)	0.01
<b>Gender without zero category- United</b>												
...Males; n (%)	201 (51.9%)	188 (48.6%)	0.07	385 (54.1%)	376 (52.9%)	0.02	630 (39.9%)	629 (39.9%)	0.00	1,216 (45.5%)	1,193 (44.6%)	0.02
...Females; n (%)	186 (48.1%)	199 (51.4%)	-0.07	326 (45.9%)	335 (47.1%)	-0.02	947 (60.1%)	948 (60.1%)	0.00	1,459 (54.5%)	1,482 (55.4%)	-0.02
<b>Race</b>												
...White; n (%)							1,409 (89.3%)	1,401 (88.8%)		1,409 (89.3%)	1,401 (88.8%)	0.00
...Black; n (%)							103 (6.5%)	105 (6.7%)		103 (6.5%)	105 (6.7%)	0.00
...Asian; n (%)							10 (0.6%)	9 (0.6%)		10 (0.6%)	9 (0.6%)	0.00
...Hispanic; n (%)							17 (1.1%)	22 (1.4%)		17 (1.1%)	22 (1.4%)	0.00
...North American Native; n (%)							3 (0.2%)	3 (0.2%)		3 (0.2%)	3 (0.2%)	0.00
...Other/Unknown; n (%)							35 (2.2%)	37 (2.3%)		35 (2.2%)	37 (2.3%)	0.00
<b>Region without zero category-United v3 (lumping missing&amp;other category with West)</b>												
...Northeast; n (%)	52 (13.4%)	43 (11.1%)	0.07	162 (22.8%)	165 (23.2%)	-0.01	371 (23.5%)	379 (24.0%)	-0.01	585 (21.9%)	587 (21.9%)	0.00
...South; n (%)	162 (41.9%)	158 (40.8%)	0.02	130 (18.3%)	125 (17.6%)	0.02	605 (38.4%)	554 (35.1%)	0.07	897 (33.5%)	837 (31.3%)	0.05
...Midwest; n (%)	75 (19.4%)	85 (22.0%)	-0.06	235 (33.1%)	224 (31.5%)	0.03	295 (18.7%)	317 (20.1%)	-0.04	605 (22.6%)	626 (23.4%)	-0.02
...West; n (%)	98 (25.3%)	101 (26.1%)	-0.02	180 (25.3%)	194 (27.3%)	-0.05	306 (19.4%)	327 (20.7%)	-0.03	584 (21.8%)	622 (23.3%)	-0.04
...Unknown+missing; n (%)	N/A	N/A	#VALUE!	4 (0.6%)	3 (0.4%)	0.03	N/A	N/A	#VALUE!	4 (0.6%)	3 (0.4%)	0.03
<b>CV Covariates</b>												
Ischemic heart disease; n (%)	56 (14.5%)	42 (10.9%)	0.11	69 (9.7%)	70 (9.8%)	0.00	314 (19.9%)	319 (20.2%)	-0.01	439 (16.4%)	431 (16.1%)	0.01
Acute MI; n (%)	2 (0.5%)	1 (0.3%)	0.03	4 (0.6%)	5 (0.7%)	0.01	14 (0.9%)	12 (0.8%)	0.01	21 (0.8%)	17 (0.6%)	0.02
ACS/unstable angina; n (%)	5 (1.3%)	4 (1.0%)	0.03	2 (0.3%)	4 (0.6%)	-0.04	15 (1.0%)	11 (0.7%)	0.03	22 (0.8%)	19 (0.7%)	0.01
Old MI; n (%)	10 (2.6%)	7 (1.8%)	0.05	15 (2.1%)	15 (2.1%)	0.00	56 (3.6%)	64 (4.1%)	-0.03	81 (3.0%)	86 (3.2%)	-0.01
Stable angina; n (%)	1 (0.3%)	3 (0.8%)	-0.07	7 (1.0%)	10 (1.4%)	-0.04	34 (2.2%)	33 (2.1%)	0.01	42 (1.6%)	046 (1.7%)	-0.01
Coronary atherosclerosis and other forms of chronic ischemic heart disease; n (%)	51 (13.2%)	41 (10.6%)	0.08	61 (8.6%)	60 (8.4%)	0.01	295 (18.7%)	295 (18.7%)	0.00	407 (15.2%)	396 (14.8%)	0.01
Other atherosclerosis with ICD10 v2 Copy; n (%)	2 (0.5%)	2 (0.5%)	0.00	5 (0.7%)	6 (0.8%)	-0.01	25 (1.6%)	14 (0.9%)	0.06	32 (1.2%)	22 (0.8%)	0.04
Previous cardiac procedure (CABG or PTCA or Stent) v4; n (%)	1 (0.3%)	2 (0.5%)	-0.03	2 (0.3%)	2 (0.3%)	0.00	5 (0.3%)	8 (0.5%)	-0.03	8 (0.3%)	12 (0.4%)	-0.02
History of CABG or PTCA; n (%)	13 (3.4%)	9 (2.3%)	0.07	11 (1.5%)	10 (1.4%)	0.01	116 (7.4%)	119 (7.5%)	0.00	140 (5.2%)	138 (5.2%)	0.00
Any stroke; n (%)	19 (4.9%)	14 (3.6%)	0.06	13 (1.8%)	13 (1.8%)	0.00	74 (4.7%)	75 (4.8%)	0.00	106 (4.0%)	102 (3.8%)	0.01
Ischemic stroke (w and w/o mention of cerebral infarction); n (%)	19 (4.9%)	14 (3.6%)	0.06	13 (1.8%)	13 (1.8%)	0.00	74 (4.7%)	75 (4.8%)	0.00	106 (4.0%)	102 (3.8%)	0.01
Hemorrhagic stroke; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	000 (0.0%)	0 (0.0%)	#DIV/0!
TIA; n (%)	2 (0.5%)	1 (0.3%)	0.03	8 (1.1%)	5 (0.7%)	0.04	30 (1.9%)	25 (1.6%)	0.02	40 (1.5%)	31 (1.2%)	0.03
Other cerebrovascular disease; n (%)	9 (2.3%)	7 (1.8%)	0.04	12 (1.7%)	9 (1.3%)	0.03	41 (2.6%)	31 (2.0%)	0.04	62 (2.3%)	47 (1.8%)	0.04
Cerebrovascular procedure; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	1 (0.1%)	2 (0.1%)	0.00	001 (0.0%)	2 (0.1%)	-0.04
Heart failure (CHF); n (%)	34 (8.8%)	28 (7.2%)	0.06	37 (5.2%)	40 (5.6%)	-0.02	181 (11.5%)	188 (11.9%)	-0.01	252 (9.4%)	256 (9.6%)	-0.01
Peripheral Vascular Disease (PVD) or PVD Surgery v2; n (%)	36 (9.3%)	34 (8.8%)	0.02	35 (4.9%)	32 (4.5%)	0.02	165 (10.5%)	153 (9.7%)	0.03	236 (8.8%)	219 (8.2%)	0.02
Atrial fibrillation; n (%)	53 (13.7%)	49 (12.7%)	0.03	64 (9.0%)	60 (8.4%)	0.02	234 (14.8%)	235 (14.9%)	0.00	351 (13.1%)	344 (12.9%)	0.01
Other cardiac dysrhythmia; n (%)	76 (19.6%)	72 (18.6%)	0.03	110 (15.5%)	100 (14.1%)	0.04	305 (19.3%)	309 (19.6%)	-0.01	491 (18.4%)	481 (18.0%)	0.01
Cardiac conduction disorders; n (%)	13 (3.4%)	20 (5.2%)	-0.09	24 (3.4%)	15 (2.1%)	0.08	98 (6.2%)	93 (5.9%)	0.01	135 (5.0%)	128 (4.8%)	0.01
Other CVD; n (%)	78 (20.2%)	74 (19.1%)	0.03	76 (10.7%)	93 (13.1%)	-0.07	278 (17.6%)	304 (19.3%)	-0.04	432 (16.1%)	471 (17.6%)	-0.04
<b>Diabetes-related complications</b>												
Occurrence of Diabetic Neuropathy v2 Copy; n (%)	11 (2.8%)	14 (3.6%)	-0.05	12 (1.7%)	11 (1.5%)	0.02	67 (4.2%)	59 (3.7%)	0.03	90 (3.4%)	84 (3.1%)	0.02
Occurrence of diabetic nephropathy V3 with ICD10 Copy; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	10 (0.6%)	17 (1.1%)	-0.05	10 (0.4%)	17 (0.6%)	-0.03
Hypoglycemia v2; n (%)	1 (0.3%)	1 (0.3%)	0.00	3 (0.4%)	2 (0.3%)	0.02	31 (2.0%)	24 (1.5%)	0.04	35 (1.3%)	27 (1.0%)	0.03
Hyperglycemia; n (%)	28 (7.2%)	17 (4.4%)	0.12	20 (2.8%)	24 (3.4%)	-0.03	134 (8.5%)	135 (8.6%)	0.00	182 (6.8%)	176 (6.6%)	0.01
Diabetic ketoacidosis; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	1 (0.1%)	0 (0.0%)	0.04	2 (0.1%)	2 (0.1%)	0.00	3 (0.1%)	02 (0.1%)	0.00
Hypertension: 1 inpatient or 2 outpatient claims within 365 days; n (%)	208 (53.7%)	212 (54.8%)	-0.02	271 (38.1%)	259 (36.4%)	0.04	1,224 (77.6%)	1,189 (75.4%)	0.05	1,703 (63.7%)	1,660 (62.1%)	0.03
Hyperlipidemia v2; n (%)	157 (40.6%)	154 (39.8%)	0.02	200 (28.1%)	192 (27.0%)	0.02	758 (48.1%)	765 (48.5%)	-0.01	1,115 (41.7%)	1,111 (41.5%)	0.00
Edema; n (%)	99 (25.6%)	89 (23.0%)	0.06	134 (18.8%)	127 (17.9%)	0.02	376 (23.8%)	355 (22.5%)	0.03	609 (22.8%)	571 (21.3%)	0.04
Renal Dysfunction (non-diabetic) v2; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	1 (0.1%)	2 (0.3%)	-0.04	2 (0.1%)	3 (0.2%)	-0.03	3 (0.1%)	5 (0.2%)	-0.03
Occurrence of acute renal disease v2; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	1 (0.1%)	1 (0.1%)	0.00	1 (0.1%)	2 (0.1%)	0.00	2 (0.1%)	3 (0.1%)	0.00
Occurrence of chronic renal insufficiency; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
Chronic kidney disease v2; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
CKD Stage 3-4; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
Occurrence of hypertensive nephropathy; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
Occurrence of miscellaneous renal insufficiency v2; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	1 (0.1%)	-0.04	1 (0.1%)	1 (0.1%)	0.00	1 (0.0%)	2 (0.1%)	-0.04
<b>Other Covariates</b>												
Liver disease; n (%)	1 (0.3%)	1 (0.3%)	0.00	2 (0.3%)	3 (0.4%)	-0.02	6 (0.4%)	7 (0.4%)	0.00	9 (0.3%)	11 (0.4%)	-0.02
Osteoarthritis; n (%)	100 (25.8%)	93 (24.0%)	0.04	124 (17.4%)	123 (17.3%)	0.00	510 (32.3%)	501 (31.8%)	0.01	734 (27.4%)	717 (26.8%)	0.01

# Appendix B

Other arthritis, arthropathies and musculoskeletal pain; n (%)	291 (75.2%)	279 (72.1%)	0.07	502 (70.6%)	479 (67.4%)	0.07	1,078 (68.4%)	1,041 (66.0%)	0.05	1871 (69.9%)	1799 (67.3%)	0.06
Dorsopathies; n (%)	132 (34.1%)	120 (31.0%)	0.07	178 (25.0%)	178 (25.0%)	0.00	449 (28.5%)	449 (28.5%)	0.00	759 (28.4%)	747 (27.9%)	0.01
Fractures; n (%)	37 (9.6%)	37 (9.6%)	0.00	52 (7.3%)	52 (7.3%)	0.00	145 (9.2%)	143 (9.1%)	0.00	234 (8.7%)	232 (8.7%)	0.00
Falls v2; n (%)	42 (10.9%)	33 (8.5%)	0.08	30 (4.2%)	30 (4.2%)	0.00	74 (4.7%)	73 (4.6%)	0.00	146 (5.5%)	136 (5.1%)	0.02
Osteoporosis; n (%)	19 (4.9%)	19 (4.9%)	0.00	18 (2.5%)	19 (2.7%)	-0.01	161 (10.2%)	160 (10.1%)	0.00	198 (7.4%)	198 (7.4%)	0.00
Depression; n (%)	55 (14.2%)	51 (13.2%)	0.03	56 (7.9%)	65 (9.1%)	-0.04	217 (13.8%)	213 (13.5%)	0.01	328 (12.3%)	329 (12.3%)	0.00
Anxiety; n (%)	60 (15.5%)	60 (15.5%)	0.00	74 (10.4%)	78 (11.0%)	-0.02	209 (13.3%)	206 (13.1%)	0.01	343 (12.8%)	344 (12.9%)	0.00
Sleep_Disorder; n (%)	8 (2.1%)	11 (2.8%)	-0.05	27 (3.8%)	28 (3.9%)	-0.01	51 (3.2%)	57 (3.6%)	-0.02	86 (3.2%)	96 (3.6%)	-0.02
Dementia; n (%)	24 (6.2%)	22 (5.7%)	0.02	30 (4.2%)	31 (4.4%)	-0.01	196 (12.4%)	196 (12.4%)	0.00	250 (9.3%)	249 (9.3%)	0.00
Delirium; n (%)	11 (2.8%)	7 (1.8%)	0.07	12 (1.7%)	11 (1.5%)	0.02	60 (3.8%)	60 (3.8%)	0.00	83 (3.1%)	78 (2.9%)	0.01
Psychosis; n (%)	6 (1.6%)	8 (2.1%)	-0.04	3 (0.4%)	3 (0.4%)	0.00	34 (2.2%)	33 (2.1%)	0.01	43 (1.6%)	44 (1.6%)	0.00
Obesity; n (%)	99 (25.6%)	86 (22.2%)	0.08	136 (19.1%)	132 (18.6%)	0.01	235 (14.9%)	239 (15.2%)	-0.01	470 (17.6%)	457 (17.1%)	0.01
Overweight; n (%)	29 (7.5%)	22 (5.7%)	0.07	27 (3.8%)	24 (3.4%)	0.02	62 (3.9%)	58 (3.7%)	0.01	118 (4.4%)	104 (3.9%)	0.03
Smoking; n (%)	91 (23.5%)	92 (23.8%)	-0.01	82 (11.5%)	85 (12.0%)	-0.02	448 (28.4%)	442 (28.0%)	0.01	621 (23.2%)	619 (23.1%)	0.00
Alcohol abuse or dependence; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	1 (0.1%)	1 (0.1%)	0.00	1 (0.0%)	1 (0.0%)	#DIV/0!
Drug abuse or dependence; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
COPD; n (%)	57 (14.7%)	48 (12.4%)	0.07	45 (6.3%)	43 (6.0%)	0.01	292 (18.5%)	280 (17.8%)	0.02	394 (14.7%)	371 (13.9%)	0.02
Asthma; n (%)	43 (11.1%)	43 (11.1%)	0.00	35 (4.9%)	45 (6.3%)	-0.06	163 (10.3%)	134 (8.5%)	0.06	241 (9.0%)	222 (8.3%)	0.02
Obstructive sleep apnea; n (%)	49 (12.7%)	43 (11.1%)	0.05	47 (6.6%)	54 (7.6%)	-0.04	113 (7.2%)	118 (7.5%)	-0.01	209 (7.8%)	215 (8.0%)	-0.01
Pneumonia; n (%)	37 (9.6%)	37 (9.6%)	0.00	49 (6.9%)	56 (7.9%)	-0.04	152 (9.6%)	142 (9.0%)	0.02	238 (8.9%)	235 (8.8%)	0.00
<b>Other Medications</b>												
Use of ACE inhibitors; n (%)	77 (19.9%)	75 (19.4%)	0.01	90 (12.7%)	98 (13.8%)	-0.03	381 (24.2%)	397 (25.2%)	-0.02	548 (20.5%)	570 (21.3%)	-0.02
Use of ARBs; n (%)	36 (9.3%)	41 (10.6%)	-0.04	88 (12.4%)	71 (10.0%)	0.08	307 (19.5%)	304 (19.3%)	0.01	431 (16.1%)	416 (15.6%)	0.01
Use of Loop Diuretics - United; n (%)	44 (11.4%)	37 (9.6%)	0.06	56 (7.9%)	48 (6.8%)	0.04	307 (19.5%)	292 (18.5%)	0.03	407 (15.2%)	377 (14.1%)	0.03
Use of other diuretics- United; n (%)	4 (1.0%)	8 (2.1%)	-0.09	9 (1.3%)	8 (1.1%)	0.02	38 (2.4%)	55 (3.5%)	-0.07	51 (1.9%)	71 (2.7%)	-0.05
Use of nitrates-United; n (%)	2 (0.5%)	3 (0.8%)	-0.04	6 (0.8%)	10 (1.4%)	-0.06	95 (6.0%)	78 (4.9%)	0.05	103 (3.9%)	91 (3.4%)	0.03
Use of other hypertension drugs; n (%)	16 (4.1%)	16 (4.1%)	0.00	10 (1.4%)	13 (1.8%)	-0.03	80 (5.1%)	79 (5.0%)	0.00	106 (4.0%)	108 (4.0%)	0.00
Use of Anti-arrhythmics; n (%)	6 (1.6%)	5 (1.3%)	0.03	14 (2.0%)	14 (2.0%)	0.00	47 (3.0%)	42 (2.7%)	0.02	67 (2.5%)	61 (2.3%)	0.01
Use of COPD/asthma meds- United; n (%)	60 (15.5%)	59 (15.2%)	0.01	102 (14.3%)	108 (15.2%)	-0.03	361 (22.9%)	330 (20.9%)	0.05	523 (19.6%)	497 (18.6%)	0.03
Use of statins; n (%)	128 (33.1%)	119 (30.7%)	0.05	155 (21.8%)	153 (21.5%)	0.01	633 (40.1%)	638 (40.5%)	-0.01	916 (34.2%)	910 (34.0%)	0.00
Use of other lipid-lowering drugs; n (%)	23 (5.9%)	20 (5.2%)	0.03	21 (3.0%)	19 (2.7%)	0.02	88 (5.6%)	87 (5.5%)	0.00	132 (4.9%)	126 (4.7%)	0.01
Use of antiplatelet agents; n (%)	26 (6.7%)	20 (5.2%)	0.06	49 (6.9%)	40 (5.6%)	0.05	163 (10.3%)	135 (8.6%)	0.06	238 (8.9%)	195 (7.3%)	0.06
Use of heparin and other low-molecular weight heparins; n (%)	79 (20.4%)	93 (24.0%)	-0.09	0 (0.0%)	0 (0.0%)	#DIV/0!	289 (18.3%)	297 (18.8%)	-0.01	368 (13.8%)	390 (14.6%)	-0.02
Use of NSAIDs; n (%)	81 (20.9%)	76 (19.6%)	0.03	157 (22.1%)	156 (21.9%)	0.00	266 (16.9%)	277 (17.6%)	-0.02	504 (18.8%)	509 (19.0%)	-0.01
Use of oral corticosteroids; n (%)	115 (29.7%)	94 (24.3%)	0.12	169 (23.8%)	174 (24.5%)	-0.02	455 (28.9%)	454 (28.8%)	0.00	739 (27.6%)	722 (27.0%)	0.01
Use of bisphosphonate (United); n (%)	6 (1.6%)	8 (2.1%)	-0.04	4 (0.6%)	9 (1.3%)	-0.07	56 (3.6%)	53 (3.4%)	0.01	66 (2.5%)	70 (2.6%)	-0.01
Use of opioids- United; n (%)	148 (38.2%)	155 (40.1%)	-0.04	310 (43.6%)	295 (41.5%)	0.04	613 (38.9%)	630 (39.9%)	-0.02	1071 (40.0%)	1080 (40.4%)	-0.01
Use of antidepressants; n (%)	91 (23.5%)	90 (23.3%)	0.00	138 (19.4%)	147 (20.7%)	-0.03	458 (29.0%)	465 (29.5%)	-0.01	687 (25.7%)	702 (26.2%)	-0.01
Use of antipsychotics; n (%)	10 (2.6%)	16 (4.1%)	-0.08	14 (2.0%)	15 (2.1%)	-0.01	93 (5.9%)	77 (4.9%)	0.04	117 (4.4%)	108 (4.0%)	0.02
Labs										1,098	1,098	
Lab values- HbA1c (%) v3; n (%)	47 (12.1%)	40 (10.3%)	0.06	4 (0.6%)	3 (0.4%)	0.03	N/A	N/A	#VALUE!	051 (4.6%)	043 (3.9%)	0.03
Lab values- HbA1c (%) (within 3 months) v3; n (%)	29 (7.5%)	26 (6.7%)	0.03	2 (0.3%)	1 (0.1%)	0.04	N/A	N/A	#VALUE!	031 (2.8%)	027 (2.5%)	0.02
Lab values- HbA1c (%) (within 6 months) v3; n (%)	47 (12.1%)	40 (10.3%)	0.06	4 (0.6%)	3 (0.4%)	0.03	N/A	N/A	#VALUE!	051 (4.6%)	043 (3.9%)	0.03
Lab values- BNP; n (%)	4 (1.0%)	8 (2.1%)	-0.09	1 (0.1%)	2 (0.3%)	-0.04	N/A	N/A	#VALUE!	5 (0.5%)	10 (0.9%)	-0.05
Lab values- BNP (within 3 months); n (%)	4 (1.0%)	4 (1.0%)	0.00	0 (0.0%)	1 (0.1%)	-0.04	N/A	N/A	#VALUE!	04 (0.4%)	05 (0.5%)	-0.01
Lab values- BNP (within 6 months); n (%)	4 (1.0%)	8 (2.1%)	-0.09	1 (0.1%)	2 (0.3%)	-0.04	N/A	N/A	#VALUE!	5 (0.5%)	10 (0.9%)	-0.05
Lab values- BUN (mg/dl); n (%)	94 (24.3%)	118 (30.5%)	-0.14	5 (0.7%)	6 (0.8%)	-0.01	N/A	N/A	#VALUE!	099 (9.0%)	124 (11.3%)	-0.08
Lab values- BUN (mg/dl) (within 3 months); n (%)	68 (17.6%)	82 (21.2%)	-0.09	2 (0.3%)	4 (0.6%)	-0.04	N/A	N/A	#VALUE!	070 (6.4%)	086 (7.8%)	-0.05
Lab values- BUN (mg/dl) (within 6 months); n (%)	94 (24.3%)	118 (30.5%)	-0.14	5 (0.7%)	6 (0.8%)	-0.01	N/A	N/A	#VALUE!	099 (9.0%)	124 (11.3%)	-0.08
Lab values- Creatinine (mg/dl) v2; n (%)	98 (25.3%)	123 (31.8%)	-0.14	5 (0.7%)	6 (0.8%)	-0.01	N/A	N/A	#VALUE!	103 (9.4%)	129 (11.7%)	-0.07
Lab values- Creatinine (mg/dl) (within 3 months) v2; n (%)	70 (18.1%)	88 (22.7%)	-0.11	2 (0.3%)	4 (0.6%)	-0.04	N/A	N/A	#VALUE!	072 (6.6%)	092 (8.4%)	-0.07
Lab values- Creatinine (mg/dl) (within 6 months) v2; n (%)	98 (25.3%)	123 (31.8%)	-0.14	5 (0.7%)	6 (0.8%)	-0.01	N/A	N/A	#VALUE!	103 (9.4%)	129 (11.7%)	-0.07
Lab values- HDL level (mg/dl); n (%)	64 (16.5%)	72 (18.6%)	-0.06	3 (0.4%)	3 (0.4%)	0.00	N/A	N/A	#VALUE!	067 (6.1%)	075 (6.8%)	-0.03
Lab values- HDL level (mg/dl) (within 3 months); n (%)	36 (9.3%)	43 (11.1%)	-0.06	0 (0.0%)	1 (0.1%)	-0.04	N/A	N/A	#VALUE!	036 (3.3%)	044 (4.0%)	-0.04
Lab values- HDL level (mg/dl) (within 6 months); n (%)	64 (16.5%)	72 (18.6%)	-0.06	3 (0.4%)	3 (0.4%)	0.00	N/A	N/A	#VALUE!	067 (6.1%)	075 (6.8%)	-0.03
Lab values- LDL level (mg/dl) v2; n (%)	69 (17.8%)	75 (19.4%)	-0.04	3 (0.4%)	3 (0.4%)	0.00	N/A	N/A	#VALUE!	072 (6.6%)	078 (7.1%)	-0.02
Lab values- LDL level (mg/dl) (within 3 months) v2; n (%)	39 (10.1%)	47 (12.1%)	-0.06	0 (0.0%)	1 (0.1%)	-0.04	N/A	N/A	#VALUE!	039 (3.6%)	048 (4.4%)	-0.04
Lab values- LDL level (mg/dl) (within 6 months) v2; n (%)	69 (17.8%)	75 (19.4%)	-0.04	3 (0.4%)	3 (0.4%)	0.00	N/A	N/A	#VALUE!	072 (6.6%)	078 (7.1%)	-0.02
Lab values- NT-proBNP; n (%)	2 (0.5%)	0 (0.0%)	0.10	0 (0.0%)	0 (0.0%)	#DIV/0!	N/A	N/A	#VALUE!	02 (0.2%)	0 (0.0%)	0.06
Lab values- NT-proBNP (within 3 months); n (%)	2 (0.5%)	0 (0.0%)	0.10	0 (0.0%)	0 (0.0%)	#DIV/0!	N/A	N/A	#VALUE!	02 (0.2%)	0 (0.0%)	-
Lab values- NT-proBNP (within 6 months); n (%)	2 (0.5%)	0 (0.0%)	0.10	0 (0.0%)	0 (0.0%)	#DIV/0!	N/A	N/A	#VALUE!	02 (0.2%)	0 (0.0%)	-
Lab values- Total cholesterol (mg/dl) v2; n (%)	68 (17.6%)	75 (19.4%)	-0.05	3 (0.4%)	3 (0.4%)	0.00	N/A	N/A	#VALUE!	071 (6.5%)	078 (7.1%)	-0.02
Lab values- Total cholesterol (mg/dl) (within 3 months) v2; n (%)	40 (10.3%)	47 (12.1%)	-0.06	0 (0.0%)	1 (0.1%)	-0.04	N/A	N/A	#VALUE!	040 (3.6%)	048 (4.4%)	-0.04
Lab values- Total cholesterol (mg/dl) (within 6 months) v2; n (%)	68 (17.6%)	75 (19.4%)	-0.05	3 (0.4%)	3 (0.4%)	0.00	N/A	N/A	#VALUE!	071 (6.5%)	078 (7.1%)	-0.02
Lab values- Triglyceride level (mg/dl); n (%)	67 (17.3%)	75 (19.4%)	-0.05	3 (0.4%)	3 (0.4%)	0.00	N/A	N/A	#VALUE!	070 (6.4%)	078 (7.1%)	-0.03
Lab values- Triglyceride level (mg/dl) (within 3 months); n (%)	38 (9.8%)	47 (12.1%)	-0.07	0 (0.0%)	1 (0.1%)	-0.04	N/A	N/A	#VALUE!	038 (3.5%)	048 (4.4%)	-0.05

# Appendix B

Lab values- Triglyceride level (mg/dl) (within 6 months); n (%)	67 (17.3%)	75 (19.4%)	-0.05	3 (0.4%)	3 (0.4%)	0.00	N/A	N/A	#VALUE!	070 (6.4%)	078 (7.1%)	-0.03
Lab result number- HbA1c (%) mean (only 2 to 20 included) v4	46	40		4	3		N/A	N/A	#VALUE!	50	43	
...mean (sd)	6.11 (0.94)	6.19 (0.74)	-0.09	7.34 (2.56)	5.93 (0.40)	0.77	N/A	N/A	#VALUE!	6.21 (1.12)	6.17 (0.74)	0.04
...Missing; n (%)	341 (88.1%)	347 (89.7%)	-0.05	707 (99.4%)	708 (99.6%)	-0.03	N/A	N/A	#VALUE!	1,048 (95.4%)	1,055 (96.1%)	-0.03
Lab result number- BNP mean v2	4	8		1	2		N/A	N/A	#VALUE!	5	10	
...mean (sd)	409.35 (561.34)	134.34 (166.13)	0.66	205.00 (0.00)	0.00 (0.00)	#DIV/0!	N/A	N/A	#VALUE!	368.48 (687.50)	107.47 (166.13)	0.52
...Missing; n (%)	383 (99.0%)	379 (97.9%)	0.09	710 (99.9%)	709 (99.7%)	0.04	N/A	N/A	#VALUE!	1,093 (99.5%)	1,088 (99.1%)	0.05
Lab result number- BUN (mg/dl) mean v2	94	118		5	6		N/A	N/A	#VALUE!	99	124	
...mean (sd)	15.63 (5.02)	16.18 (5.23)	-0.11	13.50 (2.60)	13.88 (2.72)	-0.14	N/A	N/A	#VALUE!	15.52 (4.97)	16.07 (5.17)	-0.11
...Missing; n (%)	293 (75.7%)	269 (69.5%)	0.14	706 (99.3%)	705 (99.2%)	0.01	N/A	N/A	#VALUE!	999 (91.0%)	974 (88.7%)	0.08
Lab result number- Creatinine (mg/dl) mean (only 0.1 to 15 included) v3	97	123		5	6		N/A	N/A	#VALUE!	102	129	
...mean (sd)	0.90 (0.21)	0.92 (0.19)	-0.10	0.97 (0.17)	0.87 (0.14)	0.64	N/A	N/A	#VALUE!	0.90 (0.21)	0.92 (0.19)	-0.10
...Missing; n (%)	290 (74.9%)	264 (68.2%)	0.15	706 (99.3%)	705 (99.2%)	0.01	N/A	N/A	#VALUE!	996 (90.7%)	969 (88.3%)	0.08
Lab result number- HDL level (mg/dl) mean (only <=5000 included) v2	64	72		3	3		N/A	N/A	#VALUE!	67	75	
...mean (sd)	51.78 (16.46)	55.23 (14.10)	-0.23	49.00 (3.00)	53.67 (10.26)	-0.62	N/A	N/A	#VALUE!	51.66 (16.34)	55.17 (14.11)	-0.23
...Missing; n (%)	323 (83.5%)	315 (81.4%)	0.06	708 (99.6%)	708 (99.6%)	0.00	N/A	N/A	#VALUE!	1,031 (93.9%)	1,023 (93.2%)	0.03
Lab result number- LDL level (mg/dl) mean (only <=5000 included) v2	68	73		3	3		N/A	N/A	#VALUE!	71	76	
...mean (sd)	102.65 (33.30)	103.87 (37.38)	-0.03	95.00 (38.22)	104.33 (41.40)	-0.23	N/A	N/A	#VALUE!	102.33 (33.70)	103.89 (37.75)	-0.04
...Missing; n (%)	319 (82.4%)	314 (81.1%)	0.03	708 (99.6%)	708 (99.6%)	0.00	N/A	N/A	#VALUE!	1,027 (93.5%)	1,022 (93.1%)	0.02
Lab result number- Total cholesterol (mg/dl) mean (only <=5000 included) v2	68	75		3	3		N/A	N/A	#VALUE!	71	78	
...mean (sd)	178.75 (41.17)	188.01 (40.02)	-0.23	172.33 (50.64)	187.67 (27.61)	-0.38	N/A	N/A	#VALUE!	178.48 (41.78)	188.00 (40.01)	-0.23
...Missing; n (%)	319 (82.4%)	312 (80.6%)	0.05	708 (99.6%)	708 (99.6%)	0.00	N/A	N/A	#VALUE!	1,027 (93.5%)	1,020 (92.9%)	0.02
Lab result number- Triglyceride level (mg/dl) mean (only <=5000 included) v2	67	75		3	3		N/A	N/A	#VALUE!	70	78	
...mean (sd)	130.80 (70.14)	144.53 (92.96)	-0.17	136.33 (91.88)	147.00 (50.86)	-0.14	N/A	N/A	#VALUE!	131.04 (71.40)	144.63 (92.71)	-0.16
...Missing; n (%)	320 (82.7%)	312 (80.6%)	0.05	708 (99.6%)	708 (99.6%)	0.00	N/A	N/A	#VALUE!	1,028 (93.6%)	1,020 (92.9%)	0.03
Lab result number- Hemoglobin mean (only >0 included)	86	101		4	6		N/A	N/A	#VALUE!	90	107	
...mean (sd)	13.61 (1.76)	13.96 (1.61)	-0.21	13.50 (2.64)	13.42 (1.17)	0.04	N/A	N/A	#VALUE!	13.61 (1.81)	13.93 (1.60)	-0.19
...Missing; n (%)	301 (77.8%)	286 (73.9%)	0.09	707 (99.4%)	705 (99.2%)	0.02	N/A	N/A	#VALUE!	1,008 (91.8%)	991 (90.3%)	0.05
Lab result number- Serum sodium mean (only >90 and <190 included)	93	117		5	6		N/A	N/A	#VALUE!	98	123	
...mean (sd)	140.34 (2.66)	140.63 (2.25)	-0.12	139.70 (3.42)	139.19 (2.10)	0.18	N/A	N/A	#VALUE!	140.31 (2.71)	140.56 (2.25)	-0.10
...Missing; n (%)	294 (76.0%)	270 (69.8%)	0.14	706 (99.3%)	705 (99.2%)	0.01	N/A	N/A	#VALUE!	1,000 (91.1%)	975 (88.8%)	0.08
Lab result number- Albumin mean (only >0 and <=10 included)	87	117		4	3		N/A	N/A	#VALUE!	91	120	
...mean (sd)	4.11 (0.38)	4.20 (0.37)	-0.24	4.20 (0.42)	3.90 (0.35)	0.78	N/A	N/A	#VALUE!	4.11 (0.38)	4.19 (0.37)	-0.21
...Missing; n (%)	300 (77.5%)	270 (69.8%)	0.18	707 (99.4%)	708 (99.6%)	-0.03	N/A	N/A	#VALUE!	1,007 (91.7%)	978 (89.1%)	0.09
Lab result number- Glucose (fasting or random) mean (only 10-1000 included)	93	117		4	7		N/A	N/A	#VALUE!	97	124	
...mean (sd)	108.39 (28.61)	102.85 (22.79)	0.21	151.62 (87.96)	116.12 (16.32)	0.56	N/A	N/A	#VALUE!	110.17 (32.37)	103.60 (22.61)	0.24
...Missing; n (%)	294 (76.0%)	270 (69.8%)	0.14	707 (99.4%)	704 (99.0%)	0.04	N/A	N/A	#VALUE!	1,001 (91.2%)	974 (88.7%)	0.08
Lab result number- Potassium mean (only 1-7 included)	98	124		5	6		N/A	N/A	#VALUE!	103	130	
...mean (sd)	4.27 (0.40)	4.34 (0.43)	-0.17	4.15 (0.42)	4.30 (0.28)	-0.42	N/A	N/A	#VALUE!	4.26 (0.40)	4.34 (0.43)	-0.19
...Missing; n (%)	289 (74.7%)	263 (68.0%)	0.15	706 (99.3%)	705 (99.2%)	0.01	N/A	N/A	#VALUE!	995 (90.6%)	968 (88.2%)	0.08
<b>Comorbidity Scores</b>												
CCI (180 days)- ICD9 and ICD10 v2												
...mean (sd)	2.03 (2.16)	1.85 (2.14)	0.08	1.31 (1.94)	1.38 (1.86)	-0.04	260.68 (376.81)	243.96 (379.78)	0.04	154.32 (289.39)	144.46 (291.67)	0.03
Non-Frillity; n (%)	193 (49.9%)	182 (47.0%)	0.06	311 (43.7%)	286 (40.2%)	0.07	35 (2.2%)	33 (2.1%)	0.01	539 (20.1%)	501 (18.7%)	0.04
Frailty Score (mean); Empirical Version 365 days, v2												
...mean (sd)	0.18 (0.07)	0.17 (0.07)	0.14	0.15 (0.06)	0.15 (0.05)	0.00	0.09 (0.07)	0.08 (0.07)	0.14	0.12 (0.07)	0.11 (0.07)	0.14
Healthcare Utilization												
Any hospitalization; n (%)	171 (44.2%)	195 (50.4%)	-0.12	307 (43.2%)	305 (42.9%)	0.01	745 (47.2%)	818 (51.9%)	-0.09	1,223 (45.7%)	1,318 (49.3%)	-0.07
Any hospitalization within prior 30 days; n (%)	149 (38.5%)	165 (42.6%)	-0.08	263 (37.0%)	261 (36.7%)	0.01	560 (35.5%)	632 (40.1%)	-0.09	972 (36.3%)	1058 (39.6%)	-0.07
Any hospitalization during prior 31-180 days; n (%)	39 (10.1%)	39 (10.1%)	0.00	62 (8.7%)	62 (8.7%)	0.00	295 (18.7%)	267 (16.9%)	0.05	396 (14.8%)	368 (13.8%)	0.03
Internal medicine/family medicine visits; n (%)	317 (81.9%)	322 (83.2%)	-0.03	542 (76.2%)	518 (72.9%)	0.08	1,399 (88.7%)	1,410 (89.4%)	-0.02	2258 (84.4%)	2250 (84.1%)	0.01
Internal medicine/family medicine visits (30 days prior) v2; n (%)	272 (70.3%)	277 (71.6%)	-0.03	426 (59.9%)	412 (57.9%)	0.04	1,152 (73.1%)	1,210 (76.7%)	-0.08	1850 (69.2%)	1899 (71.0%)	-0.04
Internal medicine/family medicine visits (31 to 180 days prior) v2; n (%)	240 (62.0%)	237 (61.2%)	0.02	428 (60.2%)	397 (55.8%)	0.09	1,163 (73.7%)	1,143 (72.5%)	0.03	1831 (68.4%)	1777 (66.4%)	0.04
Cardiologist visit; n (%)	192 (49.6%)	194 (50.1%)	-0.01	151 (21.2%)	165 (23.2%)	-0.05	831 (52.7%)	841 (53.3%)	-0.01	1174 (43.9%)	1200 (44.9%)	-0.02
Number of Cardiologist visits (30 days prior); n (%)	152 (39.3%)	157 (40.6%)	-0.03	105 (14.8%)	115 (16.2%)	-0.04	580 (36.8%)	612 (38.8%)	-0.04	837 (31.3%)	884 (33.0%)	-0.04
Number of Cardiologist visits (31 to 180 days prior); n (%)	87 (22.5%)	77 (19.9%)	0.06	77 (10.8%)	86 (12.1%)	-0.04	492 (31.2%)	473 (30.0%)	0.03	656 (24.5%)	636 (23.8%)	0.02
Electrocardiogram v2; n (%)	217 (56.1%)	217 (56.1%)	0.00	258 (36.3%)	278 (39.1%)	-0.06	930 (59.0%)	988 (62.7%)	-0.08	1405 (52.5%)	1483 (55.4%)	-0.06
Use of glucose test strips; n (%)	3 (0.8%)	5 (1.3%)	-0.05	5 (0.7%)	2 (0.3%)	0.06	21 (1.3%)	20 (1.3%)	0.00	29 (1.1%)	27 (1.0%)	0.01
Dialysis; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
number of different/distinct medication prescriptions												
...mean (sd)	7.87 (4.99)	7.80 (5.14)	0.01	7.50 (4.78)	7.33 (4.83)	0.04	9.41 (5.32)	9.31 (4.98)	0.02	8.68 (5.13)	8.57 (4.96)	0.02
Number of Hospitalizations												
...mean (sd)	0.59 (0.86)	0.59 (0.67)	0.00	0.51 (0.66)	0.49 (0.64)	0.03	0.64 (0.83)	0.67 (0.83)	-0.04	0.60 (0.79)	0.61 (0.76)	-0.01



# Appendix B

Number of hospital days												
...mean (sd)	2.26 (3.74)	2.31 (3.52)	-0.01	2.04 (3.34)	1.95 (4.05)	0.02	2.60 (3.95)	2.75 (4.26)	-0.04	2.40 (3.77)	2.47 (4.11)	-0.02
Number of Emergency Department (ED) visits v3												
...mean (sd)	1.58 (2.00)	1.50 (2.10)	0.04	1.08 (2.71)	1.11 (2.83)	-0.01	1.68 (2.86)	1.60 (2.03)	0.03	1.51 (2.71)	1.46 (2.28)	0.02
Number of Office visits												
...mean (sd)	5.75 (4.79)	5.44 (4.65)	0.07	4.93 (4.40)	4.74 (4.30)	0.04	13.36 (17.22)	13.26 (15.82)	0.01	10.02 (13.54)	9.86 (12.48)	0.01
Number of internal medicine/family medicine visits												
...mean (sd)	8.98 (11.38)	8.50 (12.80)	0.04	6.20 (10.58)	5.50 (9.54)	0.07	10.15 (12.72)	9.20 (10.29)	0.08	8.93 (12.00)	8.12 (10.50)	0.07
Number of Cardiologist visits												
...mean (sd)	1.89 (3.50)	1.85 (3.24)	0.01	0.71 (2.35)	0.81 (2.37)	-0.04	2.45 (5.12)	2.49 (4.57)	-0.01	1.91 (4.32)	1.95 (3.92)	-0.01
Number electrocardiograms received v2												
...mean (sd)	1.40 (2.09)	1.35 (1.81)	0.03	0.70 (1.26)	0.76 (1.18)	-0.05	1.53 (2.22)	1.50 (1.85)	0.01	1.29 (1.99)	1.28 (1.69)	0.01
Number of HbA1c tests ordered												
...mean (sd)	0.28 (0.57)	0.29 (0.63)	-0.02	0.17 (0.44)	0.18 (0.46)	-0.02	0.38 (0.69)	0.38 (0.69)	0.00	0.31 (0.62)	0.31 (0.63)	0.00
Number of glucose tests ordered												
...mean (sd)	0.10 (0.52)	0.18 (1.03)	-0.10	0.15 (0.75)	0.12 (0.46)	0.05	0.21 (2.00)	0.16 (0.60)	0.03	0.18 (1.60)	0.15 (0.65)	0.02
Number of lipid tests ordered												
...mean (sd)	0.45 (0.65)	0.48 (0.69)	-0.04	0.27 (0.56)	0.30 (0.62)	-0.05	0.55 (0.69)	0.54 (0.72)	0.01	0.46 (0.65)	0.47 (0.69)	-0.01
Total N distinct ICD9/ICD10 diagnoses at the 3rd digit level Copy												
...mean (sd)	10.88 (13.19)	10.12 (11.25)	0.06	5.87 (8.87)	5.35 (7.73)	0.06	12.82 (13.12)	12.69 (12.90)	0.01	10.69 (12.15)	10.37 (11.50)	0.03
For PS												
Hemorrhagic stroke+Other cerebrovascular diseases+Cerebrovascular procedure (for PS); n (%)	9 (2.3%)	7 (1.8%)	0.04	12 (1.7%)	9 (1.3%)	0.03	42 (2.7%)	33 (2.1%)	0.04	63 (2.4%)	49 (1.8%)	0.04
Major trauma potentially causing prolonged immobili	32 (8.3%)	29 (7.5%)	0.03	46 (6.5%)	49 (6.9%)	-0.02	118 (7.5%)	109 (6.9%)	0.02	46 (6.5%)	49 (6.9%)	-0.02
Occurrence of creatinine tests ordered (for PS); n (%)	19 (4.9%)	31 (8.0%)	-0.13	57 (8.0%)	90 (12.7%)	-0.15	132 (8.4%)	167 (10.6%)	-0.08	208 (7.8%)	288 (10.8%)	-0.10
Occurrence of BUN tests ordered (for PS); n (%)	7 (1.8%)	13 (3.4%)	-0.10	22 (3.1%)	37 (5.2%)	-0.11	68 (4.3%)	86 (5.5%)	-0.06	97 (3.6%)	136 (5.1%)	-0.07
Occurrence of chronic renal insufficiency w/o CKD (for PS) v2; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
Chronic kidney disease Stage 1-2 (for PS); n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
Chronic kidney disease Stage 3-6 (for PS); n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
Acute kidney injury; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	1 (0.1%)	1 (0.1%)	0.00	1 (0.1%)	3 (0.2%)	-0.03	1 (0.1%)	1 (0.1%)	0.00
Bladder stones+Kidney stones (for PS); n (%)	6 (1.6%)	12 (3.1%)	-0.10	13 (1.8%)	11 (1.5%)	0.02	37 (2.3%)	37 (2.3%)	0.00	56 (2.1%)	60 (2.2%)	-0.01
Alcohol abuse or dependence+Drug abuse or dependence (for PS); n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	1 (0.1%)	1 (0.1%)	0.00	1 (0.0%)	1 (0.0%)	#DIV/0!
Other atherosclerosis+Cardiac conduction disorders+Other CVD (for PS) v2 Copy; n (%)	86 (22.2%)	91 (23.5%)	-0.03	98 (13.8%)	107 (15.0%)	-0.03	357 (22.6%)	374 (23.7%)	-0.03	541 (20.2%)	572 (21.4%)	-0.03
Previous cardiac procedure (CABG or PTCA or Stent) + History of CABG or PTCA (for PS) v3; n (%)	14 (3.6%)	10 (2.6%)	0.06	11 (1.5%)	11 (1.5%)	0.00	118 (7.5%)	120 (7.6%)	0.00	143 (5.3%)	141 (5.3%)	0.00
Diabetes with complication; n (%)	18 (4.7%)	18 (4.7%)	0.00	18 (2.5%)	15 (2.1%)	0.03	125 (7.9%)	123 (7.8%)	0.00	18 (2.5%)	15 (2.1%)	0.03
Delirium + Psychosis (for PS); n (%)	16 (4.1%)	14 (3.6%)	0.03	14 (2.0%)	14 (2.0%)	0.00	86 (5.5%)	82 (5.2%)	0.01	116 (4.3%)	110 (4.1%)	0.01
Any use of Meglitinides (for PS); n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	5 (0.3%)	2 (0.1%)	0.04	5 (0.2%)	2 (0.1%)	0.03
Any use of AGIs (for PS); n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	1 (0.1%)	0 (0.0%)	0.04	1 (0.0%)	0 (0.0%)	#DIV/0!
CKD stage 3-6 + dialysis (for PS); n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
Use of thiazide; n (%)	31 (8.0%)	36 (9.3%)	-0.05	33 (4.6%)	34 (4.8%)	-0.01	179 (11.4%)	166 (10.5%)	0.03	243 (9.1%)	236 (8.8%)	0.01
Use of beta blockers; n (%)	85 (22.0%)	86 (22.2%)	0.00	136 (19.1%)	130 (18.3%)	0.02	607 (38.5%)	577 (36.6%)	0.04	828 (31.0%)	793 (29.6%)	0.03
Use of calcium channel blockers; n (%)	73 (18.9%)	66 (17.1%)	0.05	105 (14.8%)	88 (12.4%)	0.07	353 (22.4%)	363 (23.0%)	-0.01	531 (19.9%)	517 (19.3%)	0.02
All antidiabetic medications except insulin; n (%)	30 (7.8%)	27 (7.0%)	0.03	61 (8.6%)	58 (8.2%)	0.01	208 (13.2%)	228 (14.5%)	-0.04	299 (11.2%)	313 (11.7%)	-0.02
DM Medications - Insulin Copy; n (%)	14 (3.6%)	9 (2.3%)	0.08	12 (1.7%)	12 (1.7%)	0.00	56 (3.6%)	52 (3.3%)	0.02	82 (3.1%)	73 (2.7%)	0.02
Use of Low Intensity Statins; n (%)	76 (19.6%)	70 (18.1%)	0.04	87 (12.2%)	82 (11.5%)	0.02	408 (25.9%)	391 (24.8%)	0.03	571 (21.3%)	543 (20.3%)	0.02
Use of High Intensity Statins; n (%)	54 (14.0%)	49 (12.7%)	0.04	65 (9.1%)	72 (10.1%)	-0.03	235 (14.9%)	259 (16.4%)	-0.04	354 (13.2%)	380 (14.2%)	-0.03
Malignant hypertension; n (%)	3 (0.8%)	3 (0.8%)	0.00	88 (12.4%)	64 (9.0%)	0.11	191 (12.1%)	170 (10.8%)	0.04	282 (10.5%)	237 (8.9%)	0.05
Cardiovascular stress test; n (%)	4 (1.0%)	2 (0.5%)	0.06	4 (0.6%)	3 (0.4%)	0.03	12 (0.8%)	14 (0.9%)	-0.01	20 (0.7%)	19 (0.7%)	0.00
Echocardiogram; n (%)	121 (31.3%)	127 (32.8%)	-0.03	160 (22.5%)	167 (23.5%)	-0.02	458 (29.0%)	531 (33.7%)	-0.10	739 (27.6%)	825 (30.8%)	-0.07
Number of BNP tests												
...mean (sd)	0.14 (0.44)	0.11 (0.37)	0.07	0.06 (0.28)	0.09 (0.31)	-0.10	0.14 (0.45)	0.15 (0.50)	-0.02	0.12 (0.41)	0.13 (0.44)	0.00
Number of Cardiac biomarkers tests (troponin, CK-MBs, Myoglobin, CPK)												
...mean (sd)	0.38 (1.02)	0.43 (1.63)	-0.04	0.21 (0.80)	0.25 (0.75)	-0.05	0.26 (0.61)	0.26 (0.59)	0.00	0.26 (0.73)	0.28 (0.86)	0.00
Number of Ambulatory Blood pressure monitoring tests												
...mean (sd)	0.01 (0.10)	0.00 (0.05)	0.13	0.00 (0.04)	0.00 (0.05)	0.00	0.00 (0.00)	0.00 (0.00)	#DIV/0!	0.00 (0.04)	0.00 (0.03)	0.00
N of days on antihypertensive medications during baseline												
...mean (sd)	67.65 (79.23)	71.62 (80.47)	-0.05	55.48 (76.62)	52.37 (73.66)	0.04	104.43 (78.04)	104.63 (78.56)	0.00	86.10 (77.84)	85.96 (77.57)	0.00
N of days in database anytime prior												
...mean (sd)	1,830.11 (1,432.42)	1,885.97 (1,492.49)	-0.04	2,212.30 (1,514.35)	2,067.60 (1,411.97)	0.10	779.13 (547.37)	759.93 (521.03)	0.04	1312.11 (1040.43)	1270.41 (1005.81)	0.00
Mean Copay for per prescription cost (charges in U.S. \$) (180-1 day prior)												
...mean (sd)	25.11 (47.24)	29.63 (62.90)	-0.08	14.39 (27.22)	14.21 (21.16)	0.01	106.57 (105.54)	105.71 (103.82)	0.01	70.28 (84.20)	70.38 (83.95)	0.00
...Missing; n (%)	29 (7.5%)	31 (8.0%)	-0.02	66 (9.3%)	71 (10.0%)	-0.02	75 (4.8%)	65 (4.1%)	0.03	170 (6.4%)	167 (6.2%)	0.01
Colonoscopy; n (%)	19 (4.9%)	13 (3.4%)	0.08	29 (4.1%)	21 (3.0%)	0.06	52 (3.3%)	52 (3.3%)	0.00	100 (3.7%)	86 (3.2%)	0.03
Fecal occult blood (FOB) test; n (%)	9 (2.3%)	11 (2.8%)	-0.03	30 (4.2%)	23 (3.2%)	0.05	48 (3.0%)	43 (2.7%)	0.02	87 (3.3%)	77 (2.9%)	0.02
Flu vaccine; n (%)	67 (17.3%)	73 (18.9%)	-0.04	71 (10.0%)	57 (8.0%)	0.07	440 (27.9%)	449 (28.5%)	-0.01	578 (21.6%)	579 (21.6%)	0.00
Mammogram; n (%)	22 (5.7%)	31 (8.0%)	-0.09	59 (8.3%)	62 (8.7%)	-0.01	174 (11.0%)	173 (11.0%)	0.00	255 (9.5%)	266 (9.9%)	-0.01
Pap smear; n (%)	19 (4.9%)	21 (5.4%)	-0.02	41 (5.8%)	42 (5.9%)	0.00	39 (2.5%)	42 (2.7%)	-0.01	99 (3.7%)	105 (3.9%)	-0.01
Pneumonia vaccine; n (%)	78 (20.2%)	86 (22.2%)	-0.05	99 (13.9%)	81 (11.4%)	0.08	413 (26.2%)	440 (27.9%)	-0.04	590 (22.1%)	607 (22.7%)	-0.01

# Appendix B

PSA test or Prostate exam for DRE; n (%)	41 (10.6%)	43 (11.1%)	-0.02	58 (8.2%)	52 (7.3%)	0.03	202 (12.8%)	205 (13.0%)	-0.01	301 (11.3%)	300 (11.2%)	0.00
Bone mineral density; n (%)	4 (1.0%)	11 (2.8%)	-0.13	4 (0.6%)	6 (0.8%)	-0.02	86 (5.5%)	74 (4.7%)	0.04	94 (3.5%)	93 (3.4%)	0.01
Use of CNS stimulants; n (%)	5 (1.3%)	6 (1.6%)	-0.03	3 (0.4%)	9 (1.3%)	-0.10	6 (0.4%)	5 (0.3%)	0.02	14 (0.5%)	20 (0.7%)	-0.03
Use of estrogens, progestins, androgens; n (%)	23 (5.9%)	27 (7.0%)	-0.04	84 (11.8%)	89 (12.5%)	-0.02	52 (3.3%)	62 (3.9%)	-0.03	159 (5.9%)	178 (6.7%)	-0.03
Use of Angiogenesis inhibitors; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	2 (0.1%)	0 (0.0%)	0.04	2 (0.1%)	0 (0.0%)	0.04
Use of Oral Immunosuppressants; n (%)	0 (0.0%)	1 (0.3%)	-0.08	0 (0.0%)	2 (0.3%)	-0.08	1 (0.1%)	2 (0.1%)	0.00	1 (0.0%)	5 (0.2%)	-0.06
Use of fondaparinux or Bivalirudin; n (%)	5 (1.3%)	4 (1.0%)	0.03	10 (1.4%)	7 (1.0%)	0.04	7 (0.4%)	6 (0.4%)	0.00	22 (0.8%)	17 (0.6%)	0.02
Use of other direct thrombin inhibitors (Ilepirudin, des	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
Use of Ticagrelor ON CED; n (%)	2 (0.5%)	1 (0.3%)	0.03	3 (0.4%)	2 (0.3%)	0.02	0 (0.0%)	1 (0.1%)	-0.04	5 (0.2%)	4 (0.1%)	0.03
Use of Ticagrelor; n (%)	2 (0.5%)	1 (0.3%)	0.03	4 (0.6%)	4 (0.6%)	0.00	8 (0.5%)	5 (0.3%)	0.03	14 (0.5%)	10 (0.4%)	0.01
Number of D-dimer tests												
...mean (sd)	0.25 (0.62)	0.21 (0.52)	0.07	0.13 (0.45)	0.14 (0.40)	-0.02	0.13 (0.40)	0.14 (0.41)	-0.02	0.15 (0.45)	0.15 (0.43)	0.00
Numbe of CRP, high-sensitivity CRP tests												
...mean (sd)	0.09 (0.37)	0.10 (0.39)	-0.03	0.10 (0.51)	0.08 (0.34)	0.05	0.12 (0.53)	0.13 (0.49)	-0.02	0.11 (0.50)	0.11 (0.44)	0.00
Number of PT or aPTT tests												
...mean (sd)	0.95 (1.85)	0.83 (1.60)	0.07	0.58 (1.22)	0.57 (1.18)	0.01	0.54 (1.23)	0.52 (1.23)	0.02	0.61 (1.34)	0.58 (1.28)	0.00
Number of Bleeding time tests												
...mean (sd)	0.00 (0.00)	0.00 (0.00)	#DIV/0!	0.00 (0.00)	0.00 (0.00)	#DIV/0!	0.00 (0.00)	0.00 (0.00)	#DIV/0!	0.00 (0.00)	0.00 (0.00)	#DIV/0!
HAS-BLED Score (ICD-9 and ICD-10), 180 days												
...mean (sd)	2.58 (1.08)	2.53 (1.04)	0.05	2.14 (1.03)	2.08 (1.00)	0.06	3.32 (0.79)	3.29 (0.80)	0.04	2.90 (0.90)	2.86 (0.89)	0.00
N of Generic name drugs												
...mean (sd)	14.58 (14.48)	14.35 (17.58)	0.01	10.92 (10.62)	10.45 (11.54)	0.04	17.57 (14.96)	17.16 (15.12)	0.03	15.37 (13.87)	14.97 (14.66)	0.00
N of Brand name drugs												
...mean (sd)	3.58 (7.51)	3.57 (5.26)	0.00	3.14 (5.30)	3.04 (3.22)	0.02	3.78 (6.68)	3.73 (4.80)	0.01	3.58 (6.48)	3.52 (4.51)	0.00
Use of clopidogrel ; n (%)	15 (3.9%)	11 (2.8%)	0.06	17 (2.4%)	14 (2.0%)	0.03	123 (7.8%)	99 (6.3%)	0.06	155 (5.8%)	124 (4.6%)	0.05
Systemic embolism; n (%)	6 (1.6%)	4 (1.0%)	0.05	20 (2.8%)	16 (2.3%)	0.03	22 (1.4%)	24 (1.5%)	-0.01	48 (1.8%)	44 (1.6%)	0.02
DVT; n (%)	284 (73.4%)	274 (70.8%)	0.06	539 (75.8%)	520 (73.1%)	0.06	1,260 (79.9%)	1,238 (78.5%)	0.03	2083 (77.9%)	2032 (76.0%)	0.05
Post-thrombotic syndrome; n (%)	7 (1.8%)	4 (1.0%)	0.07	5 (0.7%)	4 (0.6%)	0.01	6 (0.4%)	7 (0.4%)	0.00	5 (0.7%)	4 (0.6%)	0.01
PE; n (%)	166 (42.9%)	183 (47.3%)	-0.09	318 (44.7%)	328 (46.1%)	-0.03	559 (35.4%)	608 (38.6%)	-0.07	1043 (39.0%)	1119 (41.8%)	-0.06
Coagulation defects; n (%)	22 (5.7%)	16 (4.1%)	0.07	16 (2.3%)	20 (2.8%)	-0.03	37 (2.3%)	32 (2.0%)	0.02	16 (2.3%)	20 (2.8%)	-0.03
Diabetes: 1 inpatient or 2 outpatient claims within 18	57 (14.7%)	47 (12.1%)	0.08	69 (9.7%)	67 (9.4%)	0.01	356 (22.6%)	352 (22.3%)	0.01	482 (18.0%)	466 (17.4%)	0.02
Intracranial or retroperitoneal hemorrhage: 1 inpatier	0 (0.0%)	1 (0.3%)	-0.08	2 (0.3%)	1 (0.1%)	0.04	3 (0.2%)	2 (0.1%)	0.03	5 (0.2%)	4 (0.1%)	0.03
Peptic Ulcer Disease; n (%)	68 (17.6%)	67 (17.3%)	0.01	96 (13.5%)	95 (13.4%)	0.00	317 (20.1%)	332 (21.1%)	-0.02	481 (18.0%)	494 (18.5%)	-0.01
Upper GI bleed; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	1 (0.1%)	1 (0.1%)	0.00	1 (0.0%)	1 (0.0%)	#DIV/0!
Lower/ unspecified GI bleed; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!
Urogenital bleed; n (%)	1 (0.3%)	2 (0.5%)	-0.03	6 (0.8%)	7 (1.0%)	-0.02	14 (0.9%)	11 (0.7%)	0.02	21 (0.8%)	20 (0.7%)	0.01
Other bleeds; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	2 (0.3%)	-0.08	8 (0.5%)	6 (0.4%)	0.01	8 (0.3%)	8 (0.3%)	0.00
Prior cancer; n (%)	49 (12.7%)	45 (11.6%)	0.03	67 (9.4%)	65 (9.1%)	0.01	310 (19.7%)	273 (17.3%)	0.06	426 (15.9%)	383 (14.3%)	0.04
Antibiotics; n (%)	166 (42.9%)	174 (45.0%)	#DIV/0!	344 (48.4%)	315 (44.3%)	#DIV/0!	838 (53.1%)	829 (52.6%)	#DIV/0!	344 (48.4%)	315 (44.3%)	0.00
Aspirin; n (%)	4 (1.0%)	6 (1.6%)	-0.05	26 (3.7%)	19 (2.7%)	0.06	12 (0.8%)	7 (0.4%)	0.05	42 (1.6%)	32 (1.2%)	0.03
Aspirin/dipyridamole; n (%)	2 (0.5%)	2 (0.5%)	0.00	5 (0.7%)	2 (0.3%)	0.06	8 (0.5%)	4 (0.3%)	-0.03	15 (0.6%)	8 (0.3%)	0.04
Other antiplatelet agents; n (%)	1 (0.3%)	1 (0.3%)	0.00	0 (0.0%)	1 (0.1%)	-0.04	6 (0.4%)	11 (0.7%)	0.04	7 (0.3%)	13 (0.5%)	-0.03
PGP inhibitors; n (%)	78 (20.2%)	86 (22.2%)	-0.05	167 (23.5%)	152 (21.4%)	0.05	446 (28.3%)	438 (27.8%)	0.01	691 (25.8%)	676 (25.3%)	0.01
Other gastroprotective agents; n (%)	4 (1.0%)	4 (1.0%)	0.00	6 (0.8%)	9 (1.3%)	-0.05	28 (1.8%)	28 (1.8%)	0.00	38 (1.4%)	41 (1.5%)	-0.01
Number of lipid tests ordered												
...mean (sd)	0.45 (0.65)	0.48 (0.69)	-0.04	0.27 (0.56)	0.30 (0.62)	-0.05	0.58 (0.77)	0.57 (0.79)	0.01	0.48 (0.70)	0.49 (0.73)	0.00
Proton pump inhibitor; n (%)	76 (19.6%)	67 (17.3%)	0.06	138 (19.4%)	126 (17.7%)	0.04	437 (27.7%)	435 (27.6%)	0.00	651 (24.3%)	628 (23.5%)	0.02
H2 receptor antagonist; n (%)	8 (2.1%)	9 (2.3%)	-0.01	25 (3.5%)	24 (3.4%)	0.01	87 (5.5%)	87 (5.5%)	0.00	120 (4.5%)	120 (4.5%)	0.00
Vitamin K therapy; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	1 (0.1%)	1 (0.1%)	0.00	1 (0.0%)	1 (0.0%)	#DIV/0!
Number of INR (prothrombin) tests ordered												
...mean (sd)	0.77 (1.61)	0.47 (0.88)	0.23	0.47 (1.08)	0.35 (0.78)	0.13	0.51 (1.21)	0.46 (1.15)	0.04	0.54 (1.24)	0.43 (1.03)	0.00
Treating prescriber - Cardiologist; n (%)	152 (39.3%)	160 (41.3%)	-0.04	197 (27.7%)	201 (28.3%)	-0.01	580 (36.8%)	612 (38.8%)	-0.04	929 (34.7%)	973 (36.4%)	-0.04
Treating prescriber - Primary Care Physician; n (%)	323 (83.5%)	315 (81.4%)	0.06	273 (38.4%)	263 (37.0%)	0.03	610 (38.7%)	591 (37.5%)	0.02	1206 (45.1%)	1169 (43.7%)	0.03
Treating prescriber - Other; n (%)	377 (97.4%)	374 (96.6%)	0.05	679 (95.5%)	680 (95.6%)	0.00	1,544 (97.9%)	1,549 (98.2%)	-0.02	2600 (97.2%)	2603 (97.3%)	-0.01
Alpha blockers; n (%)	26 (6.7%)	26 (6.7%)	0.00	28 (3.9%)	23 (3.2%)	0.04	146 (9.3%)	156 (9.9%)	-0.02	200 (7.5%)	205 (7.7%)	-0.01
CHA2DS2 VASc score, 180 days, V												
...mean (sd)	1.92 (1.42)	1.89 (1.56)	0.02	1.79 (1.72)	1.73 (1.69)	0.04	2.83 (1.59)	2.80 (1.53)	0.02	2.42 (1.60)	2.38 (1.58)	0.00
Use of Prasugrel; n (%)	2 (0.5%)	1 (0.3%)	0.03	0 (0.0%)	0 (0.0%)	#DIV/0!	0 (0.0%)	0 (0.0%)	#DIV/0!	2 (0.1%)	1 (0.0%)	0.04
Use of Loop Diuretics+other diuretics+other hyperten:	57 (14.7%)	55 (14.2%)	0.01	68 (9.6%)	65 (9.1%)	0.02	367 (23.3%)	362 (23.0%)	0.01	492 (18.4%)	482 (18.0%)	0.01
Commercial vs Medicare Advantage- Business Type Code - CORRECT ONE - OPTUM							0	0				
...Commercial; n (%)	188 (48.6%)	201 (51.9%)	-0.07	166 (23.3%)	161 (22.6%)	0.02	-	-	#VALUE!	0,354 (32.2%)	0,362 (33.0%)	-0.02
...Medicare Advantage; n (%)	0,199 (51.4%)	186 (48.1%)	0.07	545 (76.7%)	550 (77.4%)	-0.02	-	-	#VALUE!	#VALUE!	0,736 (67.0%)	#VALUE!
Commercial vs Medicare Advantage- Business Type Code												
...COM = COMMERCIAL; n (%)	188 (48.6%)	201 (51.9%)	-0.07	-	-	#VALUE!	-	-	#VALUE!	188 (48.6%)	201 (51.9%)	-0.07
...MCR = MEDICARE; n (%)	199 (51.4%)	186 (48.1%)	0.07	-	-	#VALUE!	-	-	#VALUE!	199 (51.4%)	186 (48.1%)	0.07
...MCD = MEDICAID; n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	-	-	#VALUE!	-	-	#VALUE!	0 (0.0%)	0 (0.0%)	#DIV/0!
...NONE = NO BUSINESS LINE CODE (added in 2015); n (	0 (0.0%)	0 (0.0%)	#DIV/0!	-	-	#VALUE!	-	-	#VALUE!	0 (0.0%)	0 (0.0%)	#DIV/0!
...UNK = UNKNOWN (added in 2015); n (%)	0 (0.0%)	0 (0.0%)	#DIV/0!	-	-	#VALUE!	-	-	#VALUE!	0 (0.0%)	0 (0.0%)	#DIV/0!
Commercial vs Medicare Advantage- Data Type												
...1 - Fee For Service; n (%)	-	-		402 (56.5%)	422 (59.4%)		-	-		402 (56.5%)	422 (59.4%)	0.00

# Appendix B

...2 - Encounter; n (%)	-	-	143 (20.1%)	128 (18.0%)	-	-	143 (20.1%)	128 (18.0%)	0.00
...3 - Medicare; n (%)	-	-	159 (22.4%)	147 (20.7%)	-	-	159 (22.4%)	147 (20.7%)	0.00
...4 - Medicare Encounter; n (%)	-	-	7 (1.0%)	14 (2.0%)	-	-	7 (1.0%)	14 (2.0%)	0.00
Metropolitan Statistical Area - Urban (any MSA) vs Rural (non-MSA)							0	0	0.00
...Urban; n (%)	-	-	494 (69.5%)	517 (72.7%)	-	-	494 (69.5%)	517 (72.7%)	0.00
...Rural; n (%)	-	-	57 (8.0%)	46 (6.5%)	-	-	57 (8.0%)	46 (6.5%)	0.00
...Unknown/Missing; n (%)	-	-	160 (22.5%)	148 (20.8%)	-	-	160 (22.5%)	148 (20.8%)	0.00