



## NON-INTERVENTIONAL (NI) STUDY PROTOCOL

### Study information

<b>Title</b>	Real-world Evidence of Prolonged Apixaban Treatment of Unprovoked Venous Thromboembolism
<b>Protocol number</b>	B0661127
<b>Protocol version identifier</b>	1.0
<b>Date of last version of protocol</b>	August 10, 2018
<b>EU Post Authorisation Study (PAS) register number</b>	EUPAS25305
<b>Medicinal product</b>	Apixaban
<b>Research question and objectives</b>	<p>The objectives of this study are to describe patient characteristics, treatment patterns and outcomes among unprovoked VTE patients who received apixaban treatment and either continued or discontinued apixaban after 6 months</p> <p><b>Aim 1:</b> Describe the demographic and clinical characteristics</p> <p><b>Aim 2:</b> Describe treatment patterns</p> <p><b>Aim 3:</b> Evaluate the rate of recurrent venous thromboembolism (VTE) events</p> <p><b>Aim 4:</b> Evaluate the rate of major bleeding and clinically-relevant non-major (CRNM) bleeding</p>
<b>Authors</b>	Allison Keshishian Email: <a href="mailto:akeshishian@statinmed.com">akeshishian@statinmed.com</a>  Xuemei Luo Email: <a href="mailto:xuemei.luo@pfizer.com">xuemei.luo@pfizer.com</a>

## TABLE OF CONTENTS

1. RESPONSIBLE PARTIES .....	5
2. AMENDMENTS AND UPDATES .....	8
3. MILESTONES .....	8
4. RATIONALE AND BACKGROUND .....	9
5. RESEARCH METHODS .....	10
5.1. Study Design .....	10
5.1.1. Key Index Period Definitions .....	10
5.1.2. Key index point definitions .....	11
5.2. Setting .....	12
5.2.1. Inclusion Criteria .....	12
5.2.2. Exclusion Criteria .....	13
5.3. Variables .....	14
5.4. Data Source .....	17
5.5. Study Size .....	19
5.6. Data Analysis .....	19
5.7. Subgroup and sensitivity analyses .....	19
5.8. Quality control .....	20
5.9. Strengths and limitations of the research methods .....	20
5.10. Other aspects .....	20
6. PROTECTION OF HUMAN SUBJECTS .....	20
6.1. Patient Information and Consent .....	20
6.2. Patient withdrawal .....	21
6.3. Institutional Review Board/Independent Ethics Committee .....	21
6.4. Ethical conduct of the study .....	21
7. MANAGEMENT AND REPORTING OF ADVERSE EVENTS/ADVERSE REACTIONS .....	21
8. PLANS FOR DISSEMINATING AND COMMUNICATING STUDY RESULTS .....	21
9. COMMUNICATION OF ISSUES .....	21
10. LIST OF TABLES .....	21
11. LIST OF FIGURES .....	21

12. APPENDIX 1. LIST OF RELEVANT ICD-9-CM DIAGNOSIS, CPT, AND HCPCS CODES.....	22
13. ANNEX 1. ADDITIONAL INFORMATION.....	69
14. REFERENCES .....	70

## LIST OF ABBREVIATIONS

<b>Abbreviation</b>	<b>Definition</b>
AE	Adverse Event
AMPLIFY	Apixaban for the Initial Management of Pulmonary Embolism and Deep Vein Thrombosis as First-Line Therapy
BMS	Bristol-Myers Squibb
COPD	Chronic Obstructive Pulmonary Disease
CPT	Current Procedural Terminology
CRNM	Clinically Relevant Non-Major
DVT	Deep Vein Thrombosis
ER	Emergency Room
HCFA	Health Care Financing Agency
HCPCS	Common Procedure Coding System
ICD-9-CM	International Classification of Disease, 9 <sup>th</sup> Revision, Clinical Modification
ICD-10-CM	International Classification of Disease, 10 <sup>th</sup> Revision, Clinical Modification
ICH	Intracranial Hemorrhage
LMWH	Low-molecular-weight Heparin
OAC	Oral Anticoagulant
PE	Pulmonary Embolism
UFH	Unfractionated Heparin
VTE	Venous Thromboembolism

## 1. RESPONSIBLE PARTIES

### Principal Investigator(s) of the Protocol

<b>Name, degree(s)</b>	<b>Title</b>	<b>Affiliation</b>	<b>Address</b>
Allison Keshishian, MPH	Sr. Project Manager	STATinMED Research	211 N. 4 <sup>th</sup> Ave Ann Arbor, MI 48104
Xuemei Luo	Director, Health Economics and Outcomes Research	Pfizer, Inc	445 Eastern Point Road, Groton, CT 06340

## **ABSTRACT**

**Title:** Real-world Evidence of Prolonged Apixaban Treatment of Unprovoked Venous Thromboembolism

**Version:** 1.0

**Date of Protocol:** June 28, 2018

**Rationale and background:** Venous thromboembolism (VTE), including deep vein thrombosis (DVT) or pulmonary embolism (PE), is the third most common cause of death related to vascular diseases. An episode of VTE can either be unprovoked or provoked by an environmental risk factor. The provoking risk factor may be transient (including acute immobilization, surgery, trauma, pregnancy, or estrogen use), or persistent (specifically active cancer). VTE should generally be treated for either 3 months or indefinitely. It can be challenging to extend anticoagulation treatment due to the risk of major bleeding. The decision to extend treatment is based on the balance between the risk of recurrence after treatment discontinuation and the risk of major bleeding when continuing the treatment. The risk of recurrent VTE is as high as 15% in patients with an unprovoked VTE event and 5% in patients with provoked VTE by non-surgical factors within 1 year of the index event. Clinical guidelines recommend the extended use of anticoagulants beyond 3 months in patients with unprovoked DVT who do not have a high risk of bleeding. In a clinical trial, extended treatment ( $\geq 6$  months) with apixaban (2.5mg and 5mg) for 12 months in patients who had already received 6 to 12 months of anticoagulation treatment for a VTE event was associated with a significantly reduced risk of recurrent VTE without an increased risk of major bleeding when compared to a placebo. There is limited real-world evidence regarding the effectiveness and safety of apixaban for treatment beyond six months among VTE patients.

This study will describe patient characteristics, treatment patterns and outcomes among unprovoked VTE patients who received apixaban and either continued or discontinued apixaban after six months.

### **Objectives:**

The following aims will be evaluated among unprovoked VTE patients who received apixaban treatment and either continued or discontinued apixaban after 6 months:

**Aim 1:** Describe the demographic and clinical characteristics

**Aim 2:** Describe treatment patterns

**Aim 3:** Evaluate the rate of recurrent VTE events

**Aim 4:** Evaluate the rate of major bleeding and clinically-relevant non-major (CRNM) bleeding

**Study Design:** The study will be a longitudinal retrospective cohort analysis using a pooled dataset (Humana, IMS, Optum, and MarketScan datasets). The study period will be from March 1, 2014 through December 31, 2017 or until the last date of the data cut available at the time of the study's execution. Patients with an unprovoked VTE diagnosis during the identification period (September 1, 2014 through December 31, 2017 or until the most recent data cut available at the time of project initiation) will be identified. Patients will be required to have continuous evidence of apixaban use for  $\geq 6$  months without a gap of  $>30$  days.<sup>1</sup> The end date of the initial 6 months of apixaban treatment following the first VTE diagnosis date (index VTE event) will be designated as the index date. Patients whose continuous apixaban treatment ended within the 30-day window after the index date will be assigned to the discontinued cohort. Patients whose continuous apixaban treatment continued for  $\geq 30$  days after the index date will be assigned to the continued cohort. The study period will allow for a 12-month baseline period prior to the index date. The follow-up period will be defined as follows:

- **Discontinued Cohort:** Patient data will be assessed from the day after the index date until the earliest date of disenrollment, death, anticoagulant initiation, or end of the study period.
- **Continued Cohort:** Patient data will be assessed from the day after the index date until the earliest of disenrollment, death, apixaban discontinuation, switch to another anticoagulant (dabigatran, edoxaban, rivaroxaban, warfarin, unfractionated heparin [UFH], low-molecular-weight heparin [LMWH], fondaparinux), or end of the study period.

**Population:** Unprovoked VTE patients in the Humana, Optum, IMS, and MarketScan databases who were treated with apixaban for  $\geq 6$  months between September 1, 2014 and December 31, 2017 and had continuous health plan enrollment for 12 months prior to the index date

**Variables:** Demographic and clinical characteristics, clinical treatment patterns, and clinical outcomes including recurrent VTE, major bleeding, and CRNM bleeding

**Data Sources:** The study will be conducted using member enrollment as well as medical and pharmacy claims from the Optum, Humana, IMS, and MarketScan database.

**Study Sample Size:** All eligible patients available for analysis will be included.

**Data Analysis:** Mean, median, and standard deviation will be provided for continuous variables. Numbers and percentages will be provided for dichotomous and polychotomous variables. Bivariate comparisons of baseline characteristics and outcomes measures will be provided. Appropriate tests (eg, t-test, chi-square test) will be used based on the distribution of the measure. The cumulative incidence rate for clinical outcomes (major bleeding, CRNM bleeding, and recurrent VTE) will be calculated. Data analysis will be executed using statistical analysis software (SAS) version 9.3/9.4.

## 2. AMENDMENTS AND UPDATES

<b>Amendment number</b>	<b>Date</b>	<b>Substantial or administrative amendment</b>	<b>Protocol section(s) changed</b>	<b>Summary of amendment(s)</b>	<b>Reason</b>
N/A					

## 3. MILESTONES

<b>Milestones</b>	<b>Planned Completion Date</b>
Completion of protocol development	8/1/2018
Start of data collection	8/21/2018
Start of data analysis	8/31/2018
Final study report	1/12/2019
Submit abstract	
Manuscript Submission	

#### 4. RATIONALE AND BACKGROUND

Venous thromboembolism (VTE), including deep vein thrombosis (DVT) or pulmonary embolism (PE), is the third most common cause of death related to vascular diseases.<sup>2</sup> The annual incidence of VTE in the US is 1 case per 1000 patients.<sup>2</sup> Each year in the US, >600,000 hospitalizations and >100,000 deaths are attributed to VTE.<sup>3</sup> The total per patient VTE treatment cost exceeds \$20,000 during the first year following a VTE event.<sup>2</sup> The economic burden of VTE ranges between \$13.5 and \$27.2 billion per year.<sup>4</sup>

An episode of VTE can either be provoked or unprovoked by an environmental risk factor. The provoking risk factor may be transient (including acute immobilization, surgery, trauma, pregnancy, or estrogen use), or persistent as in active cancer. VTE should generally be treated for either 3 months or indefinitely.<sup>5, 6</sup> For many years the prevailing practice for the treatment of an unprovoked VTE was anticoagulation for 6 months.<sup>7, 7</sup> It can be challenging to extend the anticoagulation treatment due to the risk of major bleeding. The decision to extend treatment is based on the balance between the risk of recurrence after stopping the treatment and the risk of major bleeding on continuing the treatment.<sup>8</sup>

Risk of recurrent VTE depends on several factors such as VTE event type, age, gender, previous surgery, trauma, and cancer.<sup>9</sup> The risk of recurrent VTE is high after an acute VTE episode but decreases with time.<sup>9</sup> Recurrent VTE prevalence is 15% in patients with an unprovoked VTE event and 5% in patients with a provoked VTE event by non-surgical factors within 1 year of index event.<sup>10</sup>

The American College of Chest Physicians and European Society of Cardiology recommends the extended use of anticoagulants beyond 3 months in patients with unprovoked DVT who do not have a high risk of bleeding.<sup>11,11</sup> However, clinical practices have reported inconsistencies in the duration of anticoagulant treatment for patients with unprovoked DVT.<sup>12</sup> A meta-analysis of six randomized controlled trials reported that a longer duration of anticoagulation (mean duration=18.6 months) was associated with significantly lower all-cause mortality in VTE patients who were at an intermediate risk of VTE recurrence (without transient risk factors or cancer and exposed to shorter or longer anticoagulation) compared to a shorter duration of anticoagulation (mean duration= 7.5 months).<sup>13</sup> The study also reported that major bleeding was not significantly increased in the longer anticoagulation arm (RR 2.26; 95% CI 1.52-3.37) compared to shorter duration of anticoagulation.<sup>14</sup>

Apixaban is an oral factor Xa inhibitor administered in fixed doses to prevent recurrent VTE and major bleeding in patients with VTE.<sup>14</sup> In the AMPLIFY-EXT (Apixaban after the initial Management of Pulmonary Embolism and Deep Vein Thrombosis with First-line Therapy–Extended Treatment) study, extended treatment ( $\geq 6$  months) with apixaban at 5mg and 2.5mg in patients who had already received 6 to 12 months of anticoagulation treatment was associated with a significantly reduced risk of recurrent VTE without increasing the risk of major bleeding when compared to a placebo.<sup>15</sup> The rates of major bleeding were 0.2% among patients on 2.5mg apixaban and 0.1% among the 5mg apixaban patients compared with 0.5% with placebo.<sup>16</sup> The rates of clinically-relevant non-major (CRNM) bleeding were 3.0% and 4.2% among patients prescribed 2.5mg and 5mg apixaban, respectively, compared with 2.3% with placebo.<sup>16</sup>

Insufficient real-world evidence exists regarding optimal duration of apixaban treatment for unprovoked VTE. This study aims to describe patient characteristics, treatment patterns and outcomes among unprovoked VTE patients who received apixaban treatment and either continued or discontinued apixaban after 6 months.

## 5. RESEARCH METHODS

The following aims will be evaluated among unprovoked VTE patients who received apixaban treatment and either continued or discontinued apixaban after 6 months:

**Aim 1:** Describe the demographic and clinical characteristics

**Aim 2:** Describe treatment patterns

**Aim 3:** Evaluate the rate of recurrent VTE events

**Aim 4:** Evaluate the rate of major bleeding and CRNM bleeding

### 5.1. Study Design

#### 5.1.1. Key Index Period Definitions

- **Study Period:** The study period will range from March 1, 2014 through December 31, 2017 or until the last date of the data cut available at the time of study execution. The end of the study may be different for each database based on the last available data cut.
- **Patient Identification Period:** The identification period will range from September 1, 2014 through December 31, 2017 or until the last date of the data cut available at the time of execution of the study. Apixaban was approved for VTE on August 21, 2014. We require patients to have a baseline period of at least 12 months including 6 months of apixaban treatment. Hence, we will be identifying patients from September 2014 to allow a gap of at least 6 months before initiation of apixaban.
- **Baseline Period:** The baseline period will be 12 months prior to the index date. See the definition about index date in the next section.
- **Follow-up Period**
  - **Discontinued Cohort:** Patient data will be assessed from the day after the index date until disenrollment, death, initiation of anticoagulants (Table 1), or end of the study period.
  - **Continued Cohort:** Patient data will be assessed from the day after the index date until the earliest of disenrollment, death, discontinuation of apixaban use, switch to another anticoagulant (Table 1) or the end of the study period.

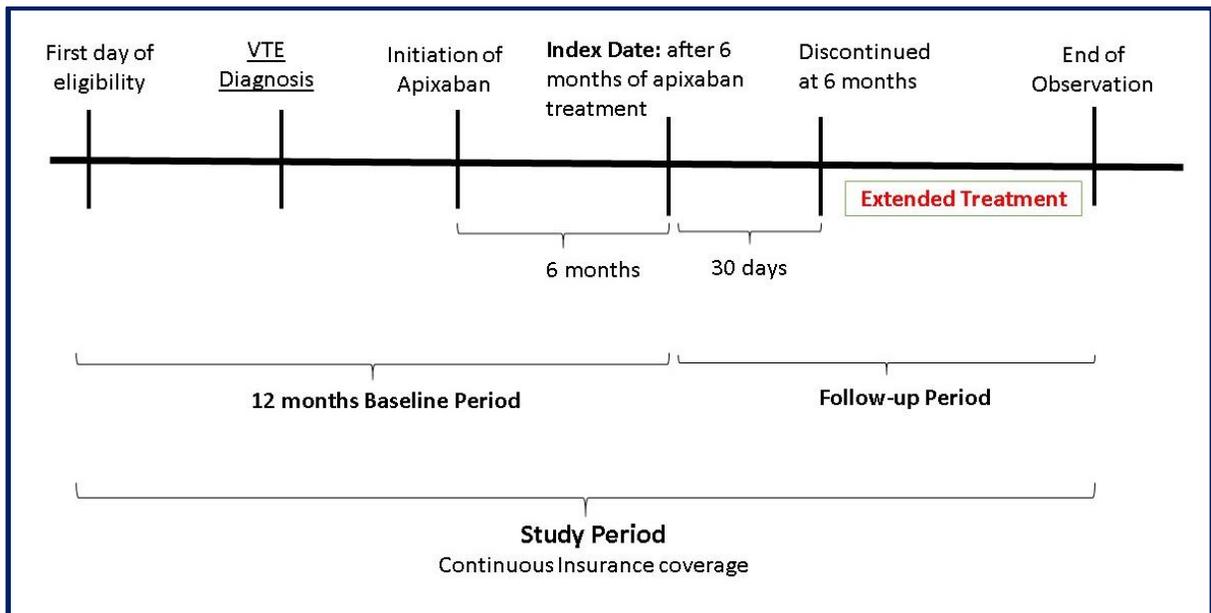
**Table 1. Oral and Parenteral Anticoagulants**

Drug	Anticoagulant Type	HCPCS Codes*
Low Molecular Weight Heparin	PAC	
Dalteparin	PAC	J1645
Enoxaparin	PAC	J1650
Tinzaparin	PAC	J1655
Heparin	PAC	J1642, J1644
Fondaparinux	PAC	J1652
Warfarin	OAC	-
Apixaban	OAC	-
Dabigatran etexilate mesylate	OAC	-
Rivaroxaban	OAC	-
Edoxaban	OAC	-

**5.1.2. Key index point definitions**

- **Index VTE event:** The first evidence of an unprovoked VTE diagnosis in the primary or secondary position in the inpatient or ambulatory setting during the identification period for each patient will be designated as the index VTE event.
- **Index Date:** The end of the initial 6 months of apixaban treatment following the index VTE event will be designated as the index date.

**Figure 1. Study Design Figure (for illustration purposes; may not be proportionate)**



## 5.2. Setting

Adult patients prescribed apixaban within 30 days of an unprovoked VTE event will be selected between September 1, 2014 and December 31, 2017 or until the last date available at the time of study initiation. The end of the initial 6 months of continuous apixaban treatment without a gap of >30 days will be designated as the index date. Patients will be required to have continuous health plan enrollment for 12 months prior to and on the index date to ensure that the patients' complete medical history is available.

### Follow-up Period

The follow-up will be different for the discontinued and continued cohorts.

- **Discontinued Cohort:** Patient data will be assessed from the day after the index date until disenrollment, death, initiation of anticoagulants (Table 1), or the end of the study period (December 31, 2017 or last date of data available at the time of study initiation)
- **Continued Cohort:** Patient data will be assessed from the day after the index date until the earliest of disenrollment, death, discontinuation of apixaban, switch to another anticoagulant (Table 1), or the end of the study period.

Discontinuation will be defined as no evidence of index apixaban use for 30 days from the last days' supply of the last filled prescription. The discontinuation date will be the last days' supply of the last filled prescription. The follow-up will be censored at 30 days after the index drug discontinuation date.

VTE patients with a prescription for an anticoagulant (Table 1) other than apixaban during the follow-up period will be considered switchers if this OAC prescription was within  $\pm 30$  days of the last days' supply of apixaban. The follow-up will be censored at the switch date of apixaban.

#### 5.2.1. Inclusion Criteria

Patients will be included in the study if they:

- a) had  $\geq 1$  medical claim with a primary or secondary unprovoked VTE diagnosis (index VTE event) in the inpatient or ambulatory setting during the identification period (01SEPT2014-31DEC2017). The first VTE diagnosis will be identified as the index VTE event. If occurring in the outpatient setting, the index VTE event date will be defined as the service date; if in the inpatient setting, the discharge date will be designated as the index VTE event date. Qualifying outpatient encounters followed by a qualifying inpatient encounter within 7 days will be considered an inpatient episode (unless apixaban was initiated between encounters, in which case the event would be classified as an outpatient encounter);

Unprovoked VTE will be defined as all events not classified as provoked. Provoked VTE will be defined as events that are preceded during the 3-month pre-index-VTE period by

hormone therapy, fracture/trauma involving lower extremities, pelvic/orthopedic surgery, active cancer ( $\geq 2$  medical diagnosis for cancer or 1 medical diagnosis for cancer and  $\geq 1$  claim for cancer-related treatment [chemotherapy, radiation therapy or cancer-related surgery]), or hospitalization for any reason for  $\geq 3$  days.

- b) had  $\geq 1$  pharmacy claim for apixaban during the 30-day period following the index VTE event [during 01SEPT2014-31DEC2016 or 6 months prior to study end so that all patients have the opportunity to have six months of use]. Patients will be required to have continuous apixaban use for  $\geq 6$  months without a gap of  $>30$  days. The end of the initial 6 months of apixaban treatment following the index VTE event will be designated as the index date;
- c) were aged  $\geq 18$  years as of the index date; and
- d) had continuous health plan enrollment for  $\geq 12$  months prior to the index date.

### 5.2.2. Exclusion Criteria

Patients will be excluded from the study if they:

- a) had evidence of VTE (unprovoked or provoked) during the 6-month period preceding the index VTE event unless the index VTE encounter occurred in the inpatient setting and was preceded by an outpatient VTE event within 7 days of the index VTE event;
- b) had evidence of atrial fibrillation/flutter or mechanical heart valve during the study period;
- c) had evidence of a prescription claim for another anticoagulant (Table 1) on the index date, or during the period between the index VTE event and the index date,
- d) had evidence of a prescription claim for another anticoagulant (Table 1) during the 6-month period preceding the index VTE event;
- e) had a recurrent VTE event between the index VTE event and index date;
- f) had evidence of inferior vena cava filter at any time during the study period; or
- g) had evidence of pregnancy at any time during the study period.

All codes for the selection criteria are detailed in the Table 1, Table 2, and Appendix 1.

### 5.2.3. Cohorts

After applying the inclusion and exclusion criteria, eligible patients will be assigned to the following cohorts based on whether patients continued or discontinued apixaban:

- **Discontinued Cohort:** Patients whose continuous apixaban treatment ended within the 30-day window after the index date
- **Continued Cohort:** Patients whose continuous apixaban treatment continued for  $\geq 30$  days after the index date

### 5.3. Variables

Baseline variables will be measured during the 12 months prior to and on the index date. Baseline variables will be evaluated using codes in any position (primary or secondary) unless noted otherwise. Outcome variables will be measured from the day after the index date.

**Table 2. Baseline Demographic and Clinical Characteristic Variables**

<b>Variable</b>	<b>Operational Definition</b>
<b>Age</b>	Age will be defined as of the index date and used to assign patients to the following age groups: 18-54, 55-64, 65-74, 75-79, and ≥80 years.
<b>Sex</b>	A flag will be created for female beneficiaries and reported as a percentage.
<b>US Geographic Region</b>	The United States will be divided into five regions: Northeast, South, Midwest, West, and Other. Geographic region will be captured from enrollment data.
<b>Setting of Index VTE event</b>	Flags will be created for patients with index VTE event in inpatient or ambulatory settings. Qualifying outpatient encounters followed by qualifying inpatient encounters within 7 days will be considered an inpatient episode (unless warfarin, LMWH, or apixaban was initiated between encounters, in which case it would be classified as an outpatient encounter).
<b>Position of VTE Diagnosis</b>	Flags will be created for the position of VTE diagnosis, including primary (principle diagnosis or first listed) or secondary position.
<b>VTE Diagnosis</b>	Flags will be created for the type of VTE diagnosis including DVT only, PE with DVT, or PE without DVT.
<b>AIDS</b>	A flag will be created for patients with claims for AIDS (See Table 7 and Appendix 1 for codes).
<b>Alcohol abuse</b>	A flag will be created for patients with claims for alcohol abuse (See Table 7 and Appendix 1 for codes).
<b>Anemia</b>	A flag will be created for patients with claims for anemia (See Table 7 and Appendix 1 for codes).
<b>Central venous Catheter</b>	A flag will be created for patients with claims for central venous catheter (See Table 7 and Appendix 1 for codes).
<b>Cerebrovascular disease</b>	A flag will be created for patients with claims for cerebrovascular disease. (See Table 7 and Appendix 1 for codes).
<b>Coagulopathy</b>	A flag will be created for patients with claims for coagulopathy (See Table 7 and Appendix 1 for codes).
<b>Ischemic heart/coronary artery disease</b>	A flag will be created for patients with claims for ischemic heart/coronary artery disease (See Table 7 and Appendix 1 for codes).
<b>Dementia</b>	A flag will be created for patients with claims for dementia (See Table 7 and Appendix 1 for codes).
<b>Dyspepsia or stomach discomfort</b>	A flag will be created for patients with claims for dyspepsia or stomach discomfort (See Table 7 and Appendix 1 for codes).
<b>Hemiplegia or</b>	A flag will be created for patients with claims for hemiplegia or paraplegia (See Table 7

<b>Variable</b>	<b>Operational Definition</b>
<b>Paraplegia</b>	and Appendix 1 for codes).
<b>Hyperlipidemia</b>	A flag will be created for patients with claims for hyperlipidemia (See Table 7 and Appendix 1 for codes).
<b>Obesity</b>	A flag will be created for patients with claims for obesity (See Table 7 and Appendix 1 for codes).
<b>Pneumonia</b>	A flag will be created for patients with claims for pneumonia (See Table 7 and Appendix 1 for codes).
<b>Rheumatologic disease</b>	A flag will be created for patients with claims for rheumatologic disease (See Table 7 and Appendix 1 for codes).
<b>Sleep apnea</b>	A flag will be created for patients with claims for sleep apnea (See Table 7 and Appendix 1 for codes).
<b>Spinal cord injury</b>	A flag will be created for patients with claims for spinal cord injury (See Table 7 and Appendix 1 for codes).
<b>Thrombocytopenia</b>	A flag will be created for patients with claims for thrombocytopenia (See Table 7 and Appendix 1 for codes).
<b>Thrombophilia</b>	A flag will be created for patients with claims for thrombophilia (See Table 7 and Appendix 1 for codes).
<b>Varicose Veins</b>	A flag will be created for patients with claims for varicose veins (See Table 7 and Appendix 1 for codes).
<b>Congestive Heart Failure</b>	A flag will be created for patients with claims for congestive heart failure (See Table 7 Appendix 1 for codes).
<b>Diabetes</b>	A flag will be created for patients with claims for diabetes (See Table 7 and Appendix 1 for codes).
<b>Hypertension</b>	A flag will be created for patients with claims for hypertension (See Table 7 and Appendix 1 for codes).
<b>Renal Disease</b>	A flag will be created for patients with claims for renal disease. A flag for chronic kidney disease stage V, end-stage renal disease, or dialysis will be created (See Table 7 and Appendix 1 for codes).
<b>Liver Disease</b>	A flag will be created for patients with claims for liver disease (See Table 7 and Appendix 1 for codes).
<b>COPD</b>	A flag will be created for patients with claims for chronic obstructive pulmonary disease (See Table 7 and Appendix 1 for codes).
<b>Peptic Ulcer Disease</b>	A flag will be created for patients with claims for ulcer disease (See Table 7 and Appendix 1 for codes).
<b>Inflammatory bowel disease</b>	A flag will be created for patients with claims for inflammatory bowel disease (See Table 7 and Appendix 1 for codes).
<b>Peripheral vascular disease</b>	A flag will be created for patients with claims for peripheral vascular disease (See Table 7 and Appendix 1 for codes).
<b>Recent history of falls</b>	A flag will be created for patients having a fall and reported as a percentage (See Table 7 and Appendix 1 for codes).
<b>Fracture/trauma</b>	A flag will be created for patients having a fracture or a trauma and reported as a

Variable	Operational Definition
<b>involving the lower extremities</b>	percentage (see Table 7 and Appendix 1 for codes).
<b>Selected surgeries</b>	A flag will be created for patients having a surgery and reported as a percentage (see Table 8 and Appendix 1 for codes).
<b>Baseline Deyo-Charlson Comorbidity Index Score</b>	The Deyo-Charlson Comorbidity Index score will be created (See Table 9 and Appendix 1 for codes).
<b>Other Baseline Medications</b>	Flags will be created for patients with prescription fills for antiarrhythmic, statin, antiplatelet, aromatase inhibitors, beta blockers, gastroprotective agents, SERMs, NSAIDs, and hormone therapy (see Table 10, Appendix 1 for codes).
<b>Initial Dose</b>	Flags will be created based on initial dose of apixaban (2.5mg or 5mg).
<b>Dose Change during Baseline Period</b>	The number of patients that have different apixaban doses during the baseline period will be evaluated. The number and percentage of patients who switched from 5mg to 2.5mg apixaban and from 2.5mg to 5mg apixaban will be calculated.
<b>Time-to-Dose Change during Baseline Period</b>	The mean time from the initial apixaban prescription date to the first dose change will be calculated in days.
<b>Index dose</b>	Flags will be created for the index dose based on dose of the index prescription of apixaban (2.5mg, 5mg, or 10mg).
<b>Baseline Major Bleeding</b>	A major bleeding event will be identified using hospital records which had a major bleeding diagnosis as the first listed or principle diagnosis as listed by International Classification of Diseases, 9 <sup>th</sup> Revision, Clinical Modification (ICD-9-CM) or ICD-10 diagnosis or procedure code. Major bleeding event will be a dichotomous variable that equals 1 if there was $\geq 1$ bleeding event during the follow-up period. The time to the first major bleeding event will be calculated (See Table 11 and Appendix 1 for codes).

**Table 2. Clinical and Outcome Variables**

Variable	Operational Definition
<b>Major Bleeding</b>	<p>A major bleeding event observed during follow-up will be identified using hospital records with a major bleeding diagnosis as the first listed or principle diagnosis as listed by the ICD-9-CM or ICD-10 diagnosis or procedure code. Major bleeding event will be a dichotomous variable that equals 1 if there was <math>\geq 1</math> bleeding event during the follow-up period. The time to the first major bleeding event will be calculated.</p> <p>Major bleeding will be stratified by gastrointestinal bleeding, intracranial hemorrhage (ICH), and other bleeding (See Table 11 and Appendix 1 for codes).</p>

Variable	Operational Definition
<b>CRNM Bleeding</b>	<p>A CRNM bleeding event will be defined as a bleeding event not considered to be major bleeding (without a principal diagnosis code for GI/ICH/other bleeding or a procedure code for bleeding treatment). This includes:</p> <ul style="list-style-type: none"> <li>• An acute-care inpatient admission with a secondary diagnosis for “non-critical site” bleeding such as GI bleeding, or other selected non-critical types/sites of bleeding); or</li> <li>• An ambulatory-care encounter with a diagnosis code for GI bleeding, and other selected non-critical types/sites of bleeding (without a diagnosis code for ICH bleeding) (See Table 12 and Appendix 1 for codes).</li> </ul>
<b>Recurrent VTE</b>	<p>A recurrent VTE event will be identified as an acute-care inpatient admission with a corresponding first listed or principal diagnosis; admissions occurring within 7 days of the qualifying VTE event, irrespective of care setting, will not be considered.</p>
<b>Discontinuation</b>	<p>Discontinuation will be defined as no evidence of apixaban for 30 days from the last days’ supply of the last filled prescription. The date of discontinuation will be the last days’ supply of the last filled prescription.</p>
<b>Time-to-Discontinuation</b>	<p>Time from the index date to discontinuation date will be evaluated among patients that discontinued index therapy.</p>
<b>Switch among Anticoagulants</b>	<p>Patients that receive a prescription for another anticoagulation other than apixaban (dabigatran, edoxaban, rivaroxaban, warfarin, UFH, LMWHs, fondaparinux, danaparoid, hirudin, bivalirudin, and argatroban) during the follow-up period will be considered switchers if within <math>\pm 30</math> days of the last days’ supply.</p>
<b>Dose Change</b>	<p>Patients that have a different dose of apixaban after index date during the follow-up period. The number and percentage of patients who switched from 5mg to 2.5mg or 2.5mg to 5mg apixaban after the index date will be calculated.</p>
<b>Time-to-Dose Change</b>	<p>The mean time from the index date to the first dose change will be calculated in days.</p>

## 5.4. Data Source

### *MarketScan*

The Truven MarketScan Commercial Claims and Encounters and Medicare Supplemental and Coordination of Benefits database will be used for this study. The MarketScan Commercial Claims and Encounters database is a high-quality resource with the combined claims of employer- and health-plan-sourced data containing medical and drug data for several million individuals annually. The database offers the largest convenience sample with >94 million unique patients since 1996. All census regions are represented, predominantly the South and North Central (Midwest) regions. The database includes enrollment history and claims for medical (provider and institutional) and pharmacy services. Inpatient services

are at both the claim and summarized stay level. The Medicare Supplemental and Coordination of Benefits database only includes a subset of the Medicare population consisting of Medicare-eligible retirees with employer-sponsored Medicare Supplemental plans. This database contains predominantly fee-for-service plan data. The Medicare Supplemental and Coordination of Benefits database may not accurately represent the US Medicare population.

### ***Optum***

OptumInsight has access to a proprietary research database containing claims and enrollment data dating back to 1993. For 2013, data relating to ~57 million individuals with both medical and pharmacy benefit coverage are available. An additional 39 million enrollees with medical benefits only are also available. Underlying information is geographically diverse across the United States and is updated frequently.

Claims for pharmacy services are typically submitted electronically by the pharmacy at the time prescriptions are filled. The claims history is a profile of all outpatient prescription pharmacy services provided and covered by the health plan. Pharmacy claims data include drug name, dosage form, drug strength, fill date, days of supply, financial information, and de-identified patient and prescriber codes, allowing for longitudinal tracking of medication refill patterns and changes in medications. Pharmacy claims are typically added to the research database within 6 weeks of dispensing.

Medical claims or encounter data are collected from all available health care sites (inpatient hospital, outpatient hospital, emergency room [ER], physician's office, surgery center, etc) for virtually all types of provided services, including specialty, preventive, and office-based treatments. Medical claims and coding conform to insurance industry standards. Claims for ambulatory services submitted by individual providers (eg, physicians) use the Health Care Financing Agency (HCFA)-1500 format. Claims for facility services submitted by institutions (eg, hospitals) use the uniform bill (UB)-82 or UB-92 format. Medical claims include multiple diagnosis codes recorded with the ICD-9-CM diagnosis codes; procedures recorded with ICD-9-CM procedure codes, Current Procedural Terminology (CPT), or HCFA Common Procedure Coding System (HCPCS) codes; site of service codes; provider specialty codes; revenue codes (for facilities); paid amounts; and other information. Typically, facility claims do not include any drugs administered in hospital. Approximately 6 months following the delivery of services is required for complete medical data. Medical claims identify patients that used United Health Group for their healthcare services.

### ***IMS PharMetrics Plus***

The IMS PharMetrics Plus claims database includes claims for medical (provider and institutional) and pharmacy services in the United States, with claim paid and allowed

amounts as well as all-patient payment amounts. The database reflects ~40 million lives in any given recent year. IMS PharMetrics Plus is the product of a strategic partnership between IMS and Blue Health Intelligence (BHI) and incorporates a number of Blue Cross Blue Shield plans. Complete data from a large number of commercial health plans, covering all 50 states, are available. The population aged  $\geq 65$  years consists of enrollees in managed care plans for seniors, the working elderly, and others in commercial plans; BHI Medicare Advantage members are not included.

### ***Humana***

The Humana database includes >11.3 million lives of commercial and Medicare members and covers all census regions in the United States. The database contains information on patient demographics; enrollment history; and claims for inpatient, outpatient, ER, and other medical services. In addition, the Humana database contains information on pharmacy and laboratory claims. Most of the members in Humana reside in Midwestern and southern regions of the country. More than 9 million people in Humana have both medical and pharmacy coverage. Medical claims include information regarding physician visits, outpatient visits and hospital inpatient stay. Pharmacy data includes information on prescription fills for each member, days of supply, payment amounts per insurers and beneficiaries and dates of services.

## **5.5. Study Size**

All eligible patients available for analysis will be included.

The four commercial databases described will be pooled together to create a master pooled dataset. The advantages of using this pooled dataset includes large study sample, diverse patient population and generalizability of the data.

## **5.6. Data Analysis**

Means, medians, and standard deviations will be provided for continuous variables when performing descriptive analysis of continuous data. Numbers and percentages will be provided for dichotomous and polychotomous variables when performing descriptive analysis of categorical data. Bivariate comparisons of baseline characteristics and outcomes measures will be provided. Appropriate tests (eg, t-test, chi-square test) will be used based on the distribution of the measure. The cumulative incidence rate for clinical outcomes (major bleeding, CRNM, recurrent VTE) will be calculated. The incidence rate will be calculated as the number of patients who experience the event divided by the observed time at risk.

All data analysis will be executed using statistical software STATA and SAS version 9.3/9.4.

## **5.7. Subgroup and sensitivity analyses**

**Subgroup Analyses:** Analyses of study measures, as described above, may be repeated focusing alternatively on subgroups of interest—sample size permitting. Subgroups may include but not limited to obesity and renal disease.

**Sensitivity Analyses:** Analyses may be conducted—sample size permitting—to evaluate the robustness of findings with respect to changes in the definitions of the following key variables and assumptions:

- Duration of continuous apixaban use—3 months

### **5.8. Quality control**

Not applicable

### **5.9. Strengths and limitations of the research methods**

A key strength is that retrospective observational analyses provide a better understanding about the study population in real-world clinical practice and offer complimentary information to controlled clinical trials. Retrospective observational studies also allow for the evaluation of patients who are often under-represented in clinical trials, such as those with comorbidities and the elderly. Since prescribing patterns in the real world can be complex, the retrospective analysis provides a comprehensive picture of how medications are used by clinicians in routine practice. The national commercial claims databases incorporate all medical and pharmacy claims of patients and allow for longitudinal analysis of a nationally representative sample. Pooling four databases together increases study sample size and improves generalizability of study findings

There are certain limitations associated with the use of claims data. First, the presence of a claim for a filled prescription does not indicate whether the medication was actually consumed or taken as prescribed. Second, the presence of a diagnosis code on a medical claim is not a positive presence of disease, as the diagnosis code may be incorrectly coded or included as rule-out criteria rather than actual disease. Third, this retrospective observational study can only demonstrate association and not causality. Fourth, we did not exclude duplicates from the database. However, prior literature reported only 0.5% duplicates between two databases.<sup>16</sup> Hence, it should not impact our study results largely. Finally, the results may not be generalizable to entire US VTE population since only commercially insured patients are evaluated.

### **5.10. Other aspects**

Not Applicable

## **6. PROTECTION OF HUMAN SUBJECTS**

### **6.1. Patient Information and Consent**

As a secondary data collection study using fully anonymized data, informed consent is not required.

## **6.2. Patient withdrawal**

Not Applicable

## **6.3. Institutional Review Board/Independent Ethics Committee**

Institutional Review Board/Independent Ethics Committee review is not required.

## **6.4. Ethical conduct of the study**

The study will be conducted in accordance with legal and regulatory requirements; with scientific purpose, value, and rigor; and following generally accepted research practices described in Guidelines for Good Pharmacoepidemiology Practices issued by the International Society for Pharmacoepidemiology.

## **7. MANAGEMENT AND REPORTING OF ADVERSE EVENTS/ADVERSE REACTIONS**

This study includes unstructured data (eg, narrative fields in the database) that will be converted to structured (ie, coded) data solely by a computer using automated/algorithmic methods and/or data that already exist as structured data in an electronic database. In these data sources, it is not possible to link (ie, identify a potential association between) a particular product and medical event for any individual. Thus, the minimum criteria for reporting an adverse event (AE) (ie, identifiable patient, identifiable reporter, a suspect product, and event) are not available and AEs are not reportable as individual AE reports.

## **8. PLANS FOR DISSEMINATING AND COMMUNICATING STUDY RESULTS**

A final study report detailing the final study protocol and the analysis results will be provided when the study is complete.

## **9. COMMUNICATION OF ISSUES**

In the event of any prohibition or restriction imposed (eg, clinical hold) by an applicable Competent Authority in any area of the world, or if the investigator is aware of any new information which might influence the evaluation of the benefits and risks of a Pfizer/BMS product, Pfizer/BMS should be informed immediately.

In addition, the investigator will inform Pfizer/BMS immediately of any urgent safety measures taken by the investigator to protect the study patients against any immediate hazard and of any serious breaches of this NI study protocol of which the investigator becomes aware.

## **10. LIST OF TABLES**

**Table 1.** Baseline Demographic and Clinical Characteristic Variables in VTE population

**Table 2.** Outcome Variables in the VTE Population

## **11. LIST OF FIGURES**

**Figure 1.** Study Design Figure

**12. APPENDIX 1. LIST OF RELEVANT ICD-9-CM DIAGNOSIS, CPT, AND HCPCS CODES**

**Appendix Table 1. Selection Criteria**

Diagnosis	ICD-9 Code	ICD-10 Code
Atrial fibrillation	427.31, 427.32	I480, I482, I481, I483, I484, I4891, I4892
Mechanical Heart Valve	<b>ICD-9 Procedure Codes:</b> 35.05-35.09, 35.20-35.28, 35.97	<b>ICD-10 Procedure Codes:</b> 02RF07Z, 02RF08Z, 02RF0JZ, 02RF0KZ, 02RF37H, 02RF37Z, 02RF38H, 02RF38Z, 02RF3JH, 02RF3JZ, 02RF3KH, 02RF3KZ, 02RF47Z, 02RF48Z, 02RF4JZ, 02RF4KZ, 02RG07Z, 02RG08Z, 02RG0JZ, 02RG0KZ, 02RG37H, 02RG37Z, 02RG38H, 02RG38Z, 02RG3JH, 02RG3JZ, 02RG3KH, 02RG3KZ, 02RG47Z, 02RG48Z, 02RG4JZ, 02RG4KZ, 02RH07Z, 02RH08Z, 02RH0JZ, 02RH0KZ, 02RH37H, 02RH37Z, 02RH38H, 02RH38Z, 02RH3JH, 02RH3JZ, 02RH3KH, 02RH3KZ, 02RH47Z, 02RH48Z, 02RH4JZ, 02RH4KZ, 02RJ07Z, 02RJ08Z, 02RJ0JZ, 02RJ0KZ, 02RJ47Z, 02RJ48Z, 02RJ4JZ, 02RJ4KZ, 02UG3JZ, X2RF032, X2RF332, X2RF432
VTE	415.11, 415.13, 415.19, 415.11, 415.19, 451.2, 451.81, 451.83, 451.84, 451.9, 453.1, 453.2, 453.4, 453.6, 453.8, 453.9	I2692, I2699, T82817A, T82818A, I801, I802, I803, I809, I821, I82210, I82220, I82290, I8240, I8241, I8242, I8243, I8244, I8249, I824Y, I824Z, I8281, I8260, I8261, I8262, I82A1, I82B1, I82C1, I82890, I8290
Malignant Neoplasm (excluding non-melanoma skin)	140-172, 174-209.3	C01, C07, C12, C19, C20, C23, C33, C37, C55, C58, C52, C61, C73, D45, C000, C001, C003, C004, C005, C006, C008, C002, C009, C020, C021, C022, C023, C028, C024, C029, C080, C081, C089, C030, C031, C039, C040, C041, C048, C049, C060, C061, C050, C051, C052, C058, C059, C062, C069, C098, C099, C090, C091, C100, C101, C108, C102, C103, C104, C109, C110, C111, C112, C113, C118, C119, C130, C131, C132, C138, C139, C140, C142, C148, C153, C154, C155, C158, C159, C160, C164, C163, C161, C162, C165, C166, C168, C169, C170, C171, C172, C173, C178, C179, C183, C184, C186, C187, C180, C181, C182, C185, C188, C189, C211, C210, C212, C218, C220, C222, C223, C224, C227, C228, C221, C229, C240, C241, C248, C249, C250, C251, C252, C253, C254, C257, C258, C259, C480, C451, C481, C488, C482, C260, C261, C269, C300, C301, C310, C311, C312, C313, C318, C319, C320, C321, C322, C323, C328, C329, C342, C384, C450, C380, C452, C381, C382, C388, C383, C390, C399, C410, C411, C412, C413, C414, C419, C470, C490, C473, C493, C474, C494, C475, C495, C476, C496, C478, C498, C479, C499, C430, C434, C438, C439, C460, C461, C462, C464, C463, C467, C469, C530, C531, C538, C539, C541, C542, C543, C549, C540, C548, C561, C562, C569, C573, C574, C510, C511, C512, C519, C518, C577, C578, C579, C600, C601, C602, C609, C632, C608, C637, C638, C639, C670, C671, C672, C673, C674, C675, C676, C677, C678, C679, C641, C642, C649, C651, C652, C659, C661, C662, C669, C680, C681, C688, C689, C710, C711, C712, C713, C714, C715, C716, C717, C718, C719, C700, C709, C720, C721, C701, C729, C750, C751, C752, C753, C754, C755, C758, C759, C760, C761, C762, C763, C457, C768, C770, C771, C772, C773, C774, C775, C778, C779, C781, C782, C784, C785, C786, C787, C792, C799, C800, C459, C801, C802, C884, C865, C866, C96A, C960, C962, C864, C860, C862, C863, C861, C964, C969, C96Z, C882, C883, C888, C889, C7A1, C7A8, C4A0, C4A4, C4A8, C4A9, C0680, C0689, C3400, C3401, C3402, C3410, C3411, C3412, C3430, C3431, C3432, C3480, C3481, C3482, C3490, C3491, C3492,

Diagnosis	ICD-9 Code	ICD-10 Code
		C4000, C4001, C4002, C4010, C4011, C4012, C4020, C4021, C4022, C4030, C4031, C4032, C4080, C4081, C4082, C4090, C4091, C4092, C4710, C4711, C4712, C4910, C4911, C4912, C4720, C4721, C4722, C4920, C4921, C4922, C4310, C4311, C4312, C4320, C4321, C4322, C4330, C4331, C4339, C4351, C4352, C4359, C4360, C4361, C4362, C4370, C4371, C4372, C4650, C4651, C4652, C5700, C5701, C5702, C5710, C5711, C5712, C5720, C5721, C5722, C6200, C6201, C6202, C6210, C6211, C6212, C6290, C6291, C6292, C6300, C6301, C6302, C6310, C6311, C6312, C6940, C6941, C6942, C6960, C6961, C6962, C6950, C6951, C6952, C6900, C6901, C6902, C6910, C6911, C6912, C6920, C6921, C6922, C6930, C6931, C6932, C6980, C6981, C6982, C6990, C6991, C6992, C7220, C7221, C7222, C7230, C7231, C7232, C7240, C7241, C7242, C7250, C7259, C7400, C7401, C7402, C7410, C7411, C7412, C7490, C7491, C7492, C7640, C7641, C7642, C7650, C7651, C7652, C7800, C7801, C7802, C7830, C7839, C7880, C7889, C7900, C7901, C7902, C7910, C7911, C7919, C7931, C7932, C7940, C7949, C7951, C7952, C7960, C7961, C7962, C7970, C7971, C7972, C7981, C7982, C7989, C8330, C8339, C8331, C8332, C8333, C8334, C8335, C8336, C8337, C8338, C8350, C8359, C8351, C8352, C8353, C8354, C8355, C8356, C8357, C8358, C8370, C8379, C8371, C8372, C8373, C8374, C8375, C8376, C8377, C8378, C8380, C8389, C8381, C8382, C8383, C8384, C8385, C8386, C8387, C8388, C8310, C8319, C8311, C8312, C8313, C8314, C8315, C8316, C8317, C8318, C8460, C8469, C8470, C8479, C8461, C8471, C8462, C8472, C8463, C8473, C8464, C8474, C8465, C8475, C8466, C8476, C8467, C8477, C8468, C8478, C8520, C8529, C8521, C8522, C8523, C8524, C8525, C8526, C8527, C8528, C8300, C8309, C8390, C8399, C8301, C8391, C8302, C8392, C8303, C8393, C8304, C8394, C8305, C8395, C8306, C8396, C8307, C8397, C8308, C8398, C8170, C8179, C8171, C8172, C8173, C8174, C8175, C8176, C8177, C8178, C8100, C8109, C8140, C8149, C8101, C8141, C8102, C8142, C8103, C8143, C8104, C8144, C8105, C8145, C8106, C8146, C8107, C8147, C8108, C8148, C8110, C8119, C8111, C8112, C8113, C8114, C8115, C8116, C8117, C8118, C8120, C8129, C8121, C8122, C8123, C8124, C8125, C8126, C8127, C8128, C8130, C8139, C8131, C8132, C8133, C8134, C8135, C8136, C8137, C8138, C8190, C8199, C8191, C8192, C8193, C8194, C8195, C8196, C8197, C8198, C8200, C8209, C8210, C8219, C8220, C8229, C8230, C8239, C8240, C8249, C8260, C8269, C8280, C8289, C8290, C8299, C8201, C8211, C8221, C8231, C8241, C8261, C8281, C8291, C8202, C8212, C8222, C8232, C8242, C8262, C8282, C8292, C8203, C8213, C8223, C8233, C8243, C8263, C8283, C8293, C8204, C8214, C8224, C8234, C8244, C8264, C8284, C8294, C8205, C8215, C8225, C8235, C8245, C8265, C8285, C8295, C8206, C8216, C8226, C8236, C8246, C8266, C8286, C8296, C8207, C8217, C8227, C8237, C8247, C8267, C8287, C8297, C8208, C8218, C8228, C8238, C8248, C8268, C8288, C8298, C8400, C8409, C8401, C8402, C8403, C8404, C8405, C8406, C8407, C8408, C8410, C8419, C8411, C8412, C8413, C8414, C8415, C8416, C8417, C8418, C9140, C9141, C9142, C8440, C8449, C8441, C8442, C8443, C8444, C8445, C8446, C8447, C8448, C8250, C8259, C8490, C8499, C84A0, C84A9, C84Z0, C84Z9, C8510, C8519, C8580, C8589, C8590, C8599, C8251, C8491, C84A1, C84Z1, C8511, C8581, C8591, C8252, C8492, C84A2, C84Z2, C8512, C8582, C8592, C8253, C8493, C84A3, C84Z3, C8513, C8583, C8593, C8254, C8494, C84A4, C84Z4, C8514, C8584, C8594, C8255, C8495, C84A5, C84Z5, C8515, C8585, C8595, C8256, C8496, C84A6, C84Z6, C8516, C8586, C8596, C8257, C8497, C84A7, C84Z7, C8517, C8587, C8597, C8258, C8498, C84A8, C84Z8, C8518, C8588, C8598, C9000, C9001, C9002, C9010, C9011, C9012, C9020, C9030, C9021, C9031, C9022, C9032, C9100, C9101, C9102, C9110, C9111, C9112, C91Z0, C91Z1, C91Z2, C9130,

Diagnosis	ICD-9 Code	ICD-10 Code
		C9150, C9160, C91A0, C9131, C9151, C9161, C91A1, C9132, C9152, C9162, C91A2, C9190, C9191, C9192, C9200, C9240, C9250, C9260, C92A0, C9201, C9241, C9251, C9261, C92A1, C9202, C9242, C9252, C9262, C92A2, C9210, C9211, C9212, C9220, C9221, C9222, C9230, C9231, C9232, C92Z0, C92Z1, C92Z2, C9290, C9291, C9292, C9300, C9301, C9302, C9310, C9311, C9312, C9390, C9391, C9392, C9330, C93Z0, C9331, C93Z1, C9332, C93Z2, C9400, C9401, C9402, C9420, C9421, C9422, C9430, C9480, C9431, C9481, C9432, C9482, C9500, C9501, C9502, C9510, C9511, C9512, C9590, C9591, C9592, C7A00, C4A10, C4A11, C4A12, C4A20, C4A21, C4A22, C4A30, C4A31, C4A39, C4A60, C4A61, C4A62, C4A70, C4A71, C4A72, C4A51, C4A52, C4A59, C50011, C50012, C50019, C50111, C50112, C50119, C50211, C50212, C50219, C50311, C50312, C50319, C50411, C50412, C50419, C50511, C50512, C50519, C50611, C50612, C50619, C50811, C50812, C50819, C50911, C50912, C50919, C50021, C50022, C50029, C50121, C50122, C50129, C50221, C50222, C50229, C50321, C50322, C50329, C50421, C50422, C50429, C50521, C50522, C50529, C50621, C50622, C50629, C50821, C50822, C50829, C50921, C50922, C50929, C7A019, C7A010, C7A011, C7A012, C7A029, C7A020, C7A021, C7A022, C7A023, C7A024, C7A025, C7A026, C7A090, C7A091, C7A092, C7A093, C7A094, C7A095, C7A096, C7A098
IVCF	<b>ICD-9-PCS Code:</b> 38.7x  <b>CPT Code:</b> 37191, 37192, 37193, 37620	<b>ICD-10-PCS Codes:</b> 02HV0DZ, 02HV3DZ, 02HV4DZ, 02LV0CZ, 02LV0DZ, 02LV0ZZ, 02LV3CZ, 02LV3DZ, 02LV3ZZ, 02LV4CZ, 02LV4DZ, 02LV4ZZ, 02VV0CZ, 02VV0DZ, 02VV0ZZ, 02VV3CZ, 02VV3DZ, 02VV3ZZ, 02VV4CZ, 02VV4DZ, 02VV4ZZ, 06H00DZ, 06H03DZ, 06H04DZ, 06L00CZ, 06L00DZ, 06L00ZZ, 06L03CZ, 06L03DZ, 06L03ZZ, 06L04CZ, 06L04DZ, 06L04ZZ, 06V00CZ, 06V00DZ, 06V00ZZ, 06V03CZ, 06V03DZ, 06V03ZZ, 06V04CZ, 06V04DZ, 06V04ZZ
Cancer-related surgery <sup>17</sup>	<b>ICD-9-PCS Code:</b> 8521, 8523, 8523, 8531, 8532, 8533, 8534, 8535, 8536, 8541, 8542, 8543, 8544, 8545, 8546, 8547, 8548, 9925, 9928, 9985  <b>CPT Code:</b> 19120, 19125, 19126, 19301, 19302-19307, 19140, 19160, 19162, 19180, 19182, 19200, 19220, 19240, 19260, 19271, 19272, 19300, 19301, 19302, 19303, 19304, 19305, 19306, 19307, 19316, 19318, 19324, 19325, 19357, 19361, 19364, 19366, 19367, 19368, 19369, 21015, 21016, 21034, 21044, 21045, 21557, 21935, 21936, 23200, 23210, 23220, 23221, 23222, 24077, 24079, 24150, 24151, 24152, 24153, 25077, 25170, 26117, 26250, 26255, 26260, 26261, 26262, 27049, 27075, 27076, 27077, 27078, 27079, 27329, 27365, 27615, 27645, 27646, 27647, 28046, 28171, 28173, 28175, 31785, 31786, 32503, 32504, 33050, 33120, 33130,	<b>ICD-10-PCS Codes:</b> 0HBT7ZZ, 0HBT8ZZ, 0HBTXZZ, 0HBU7ZZ, 0HBU8ZZ, 0HBUXZZ, 0HBV7ZZ, 0HBV8ZZ, 0HBVXZZ, 0HBT0ZZ, 0HBT3ZZ, 0HBU0ZZ, 0HBU3ZZ, 0HBV0ZZ, 0HBV3ZZ, 0HBT0ZZ, 0HBT3ZZ, 0HBU0ZZ, 0HBU3ZZ, 0HBV0ZZ, 0HBV3ZZ, 0HOT0JZ, 0HOT3JZ, 0HOU0JZ, 0HOU3JZ, 0HRT0JZ, 0HRT3JZ, 0HRU0JZ, 0HRU3JZ, 0HRV0JZ, 0HRV3JZ, 0HBT0ZZ, 0HBT3ZZ, 0HBU0ZZ, 0HBU3ZZ, 0HOU0JZ, 0HOU3JZ, 0HBV0ZZ, 0HBV3ZZ, 0HTT0ZZ, 0HTU0ZZ, 0HTV0ZZ, 07T50ZZ, 07T60ZZ, 0HTT0ZZ, 0HTU0ZZ, 07T50ZZ, 07T60ZZ, 0HTV0ZZ, 07T50ZZ, 07T60ZZ, 0HTT0ZZ, 0HTU0ZZ, 0KTH0ZZ, 0KTJ0ZZ, 07T50ZZ, 07T60ZZ, 07T70ZZ, 07T80ZZ, 07T90ZZ, 0HTT0ZZ, 0HTU0ZZ, 0KTH0ZZ, 0KTJ0ZZ, 07T50ZZ, 07T60ZZ, 07T70ZZ, 07T80ZZ, 07T90ZZ, 0HTV0ZZ, 0KTH0ZZ, 0KTJ0ZZ, 3E03305, 3E04305, 3E00X0M, 3E0130M, 3E0230M, 3E03303, 3E0330M, 3E04303, 3E0430M, 3E05303, 3E0530M, 3E06303, 3E0630M, DWY18ZZ, DWY28ZZ, DWY38ZZ, DWY48ZZ, DWY58ZZ, DWY68ZZ

Diagnosis	ICD-9 Code	ICD-10 Code
	45160, 45170, 47711, 47712, 49200, 49201, 49215, 54530, 54535, 58950, 58951, 58952, 58957, 58958, 58960, 60252, 60254, 60600, 60605, 61510, 61517, 61518, 61519, 61520, 61521, 61526, 61530, 61546, 61548, 63275, 63276, 63277, 63278, 63280, 63281, 63282, 63283, 63285, 63286, 63287, 63290	

**TABLE 2: PREGNANCY CODES**

ICD-9- DIAGNOSIS CODES	630-679, V22, V23, V24, V27, V28, V61.6, V61.7, 792.3, 796.5
ICD-10- DIAGNOSIS CODES	O80, O68, O76, O82, O85, O94, O654, O720, O650, O651, O652, O653, O658, O659, O662, O666, O010, O011, O019, O020, O029, O021, O000, O001, O002, O008, O009, O035, O030, O036, O031, O037, O032, O039, O034, O045, O046, O047, Z332, O070, O071, O072, O074, O080, O081, O086, O084, O085, O083, O082, O087, O089, O200, O208, O209, O670, O678, O679, O119, O111, O112, O113, O139, O131, O132, O133, O161, O162, O163, O152, O159, O151, O169, O210, O211, O212, O218, O219, O479, O471, O480, O481, O905, O906, O330, O252, O253, O331, O332, O337, O338, O339, O770, O771, O778, O779, O755, O611, O610, O618, O619, O752, O753, O759, O655, O660, O661, O665, O668, O663, O669, O620, O621, O622, O623, O624, O629, O628, O630, O639, O631, O632, O700, O701, O702, O703, O709, O717, O704, O719, O711, O712, O713, O714, O715, O716, O721, O722, O723, O730, O731, O741, O740, O742, O891, O743, O892, O748, O744, O745, O746, O747, O898, O893, O894, O895, O896, O749, O899, O750, O751, O904, O754, O874, O870, O871, O873, O872, O878, O879, O864, O900, O901, O860, O902, O903, O909, O923, O925, O926, O924, O289, O280, O281, O282, O283, O284, O285, O288, O1220, O1221, O1222, O1223, O0281, O0289, O0387, O0337, O0384, O0334, O0382, O0332, O0383, O0333, O0381, O0331, O0385, O0386, O0388, O0389, O0335, O0336, O0338, O0339, O0380, O0330, O0487, O0484, O0482, O0483, O0481, O0485, O0486, O0488, O0489, O0480, O0737, O0734, O0732, O0733, O0731, O0735, O0736, O0738, O0739, O0730, O0882, O0881, O0883, O0889, O4400, O4401, O4402, O4403, O4410, O4411, O4412, O4413, O4590, O4591, O4592, O4593, O4690, O4691, O4692, O4693, O1002, O1092, O1003, O1093, O1042, O1043, O1012, O1022, O1032, O1013, O1023, O1033, O1400, O1490, O1402, O1403, O1492, O1493, O1410, O1420, O1412, O1413, O1422, O1423, O1500, O1502, O1503, O6000, O6002, O6003, O4700, O4702, O4703, O1200, O2600, O1201, O1202, O1203, O2601, O2602, O2603, O1210, O1211, O1212, O1213, O9089, O2620, O2621, O2622, O2623, O2300, O2310, O2320, O2330, O2340, O2390, O2341, O2342, O2343, O2391, O2392, O2393, O2301, O2302, O2303, O2311, O2312, O2313, O2321, O2322, O2323, O2331, O2332, O2333, O8611, O8613, O8619, O8620, O8621, O8622, O8629, O2662, O2610, O2630, O2640, O2940, O2960, O2990, O9989, O2611, O2612, O2613, O2631, O2632, O2633, O2641, O2642, O2643, O2672, O2686, O2691, O2692, O2693, O2941, O2942, O2943, O2961, O2962, O2963, O2991, O2992, O2993, O2663, O2673, O2690, O9812, O9813, O9822, O9823, O9832, O9833, O9802, O9803, O9862, O9863, O9852, O9853, O9842, O9872, O9843, O9873, O9882, O9883, O9892, O9893, O2402, O2412, O2432, O2482, O2492, O2493, O2403, O2413, O2433, O2483, O9902, O9903, O9081, O9942, O9943, O2510, O2511, O2512, O2513, O9952, O9962, O9972, O9A12, O9A22, O9A32, O9A42, O9A52, O9953, O9963, O9973, O9A13, O9A23, O9A33, O9A43, O9A53, O9912, O9913, O7582, O3090, O3091, O3092, O3093, O3400, O3401, O3402, O3403, O3410, O3411, O3412, O3413, O3421, O3430, O3431, O3432, O3433, O3440, O3441, O3442, O3443, O3460, O3461, O3462, O3463, O3470, O3471, O3472, O3473, O3480, O3490, O3429, O3481, O3482, O3483, O3491, O3492, O3493, O4390, O4391, O4392, O4393, O4200, O4290, O4202, O4292, O4210, O4212, O0940, O0941, O0942, O0943, O7589, O6640, O6641, O7182, O7100, O7102, O7103, O7189, O7181, O8909, O8901, O2650, O2651, O2652, O2653, O7581, O8689, O8612, O8681, O2200, O2201, O2202, O2203, O2210, O2211, O2212, O2213, O2220, O2221, O2222, O2223, O2230, O2231, O2232, O2233, O2250, O2251, O2252, O2253, O2291, O2292, O2293, O2240, O2241, O2242, O2243, O2290, O8802, O8803, O8812, O8813, O8822, O8823, O8832, O8833, O8882, O8883, O9102, O9103, O9112, O9113, O9122, O9123, O9203, O9202,

<p>O9213, O9212, O9229, O9220, O9279, O9270, O30001, O30002, O30003, O30009, O30019, O30039, O30049, O30099, O30101, O30102, O30103, O30109, O30119, O30129, O30199, O30201, O30202, O30203, O30209, O30219, O30229, O30299, O30801, O30802, O30803, O30809, O30819, O30829, O30899, O43211, O43212, O43213, O43221, O43222, O43223, O43231, O43232, O43233, O30011, O30012, O30013, O30031, O30032, O30033, O30041, O30042, O30043, O30091, O30092, O30093, O30111, O30112, O30113, O30121, O30122, O30123, O30191, O30192, O30193, O30211, O30212, O30213, O30221, O30222, O30223, O30291, O30292, O30293, O30811, O30812, O30813, O30821, O30822, O30823, O30891, O30892, O30893, O99820, O99824, O99825, O458X9, O458X1, O458X2, O458X3, O45009, O45019, O45029, O45099, O46009, O46019, O46029, O46099, O45001, O45002, O45003, O45011, O45012, O45013, O45021, O45022, O45023, O45091, O45092, O45093, O46001, O46002, O46003, O46011, O46012, O46013, O46021, O46022, O46023, O46091, O46092, O46093, O468X9, O468X1, O468X2, O468X3, O10019, O10919, O10011, O10012, O10013, O10911, O10912, O10913, O10419, O10411, O10412, O10413, O10119, O10219, O10319, O10111, O10112, O10113, O10211, O10212, O10213, O10311, O10312, O10313, O26839, O26831, O26832, O26833, O26829, O26821, O26822, O26823, O23519, O23529, O23599, O23511, O23512, O23513, O23521, O23522, O23523, O23591, O23592, O23593, O26619, O26611, O26612, O26613, O26719, O26819, O26899, O29019, O29029, O29099, O29119, O29129, O29199, O29219, O29299, O293X9, O295X9, O298X9, O99350, O26711, O26712, O26713, O26811, O26812, O26813, O26891, O26892, O26893, O29011, O29012, O29013, O29021, O29022, O29023, O29091, O29092, O29093, O29111, O29112, O29113, O29121, O29122, O29123, O29191, O29192, O29193, O29211, O29212, O29213, O29291, O29292, O29293, O293X1, O293X2, O293X3, O295X1, O295X2, O295X3, O298X1, O298X2, O298X3, O99351, O99352, O99353, O99354, O99355, O98119, O98111, O98112, O98113, O98219, O98211, O98212, O98213, O98319, O98311, O98312, O98313, O98019, O98011, O98012, O98013, O98619, O98611, O98612, O98613, O98519, O98511, O98512, O98513, O98419, O98719, O98411, O98412, O98413, O98711, O98712, O98713, O98819, O98811, O98812, O98813, O99830, O99834, O99835, O98919, O98911, O98912, O98913, O24019, O24119, O24319, O24819, O24919, O24011, O24012, O24013, O24111, O24112, O24113, O24311, O24312, O24313, O24811, O24812, O24813, O24911, O24912, O24913, O99280, O99281, O99282, O99283, O99284, O99285, O99019, O99011, O99012, O99013, O99320, O99321, O99322, O99323, O99324, O99325, O99310, O99340, O99311, O99312, O99313, O99314, O99341, O99342, O99343, O99344, O99345, O99315, O99419, O99411, O99412, O99413, O99810, O24410, O24414, O24419, O24420, O24424, O24429, O99814, O99815, O24430, O24434, O24439, O99519, O99619, O99719, O9A119, O9A219, O9A319, O9A419, O9A519, O99511, O99512, O99513, O99611, O99612, O99613, O99711, O99712, O99713, O9A111, O9A112, O9A113, O9A211, O9A212, O9A213, O9A311, O9A312, O9A313, O9A411, O9A412, O9A413, O9A511, O9A512, O9A513, O99330, O99331, O99332, O99333, O99334, O99335, O99210, O99211, O99212, O99213, O99214, O99215, O99840, O99841, O99842, O99843, O99844, O99845, O99119, O99111, O99112, O99113, O26859, O26851, O26852, O26853, O26849, O26841, O26842, O26843, O26879, O26872, O26873, O34519, O34539, O34511, O34512, O34513, O34531, O34532, O34533, O34529, O34599, O34521, O34522, O34523, O34591, O34592, O34593, O43019, O43029, O43011, O43012, O43013, O43109, O43119, O43199, O43819, O43021, O43022, O43023, O43101, O43102, O43103, O43111, O43112, O43113, O43191, O43192, O43193, O43811, O43812, O43813, O43899, O43891, O43892, O43893, O42019, O42919, O42011, O42012, O42013, O42911, O42912, O42119, O42111, O42112, O42113, O09519, O09511, O09512, O09513, O09529, O09521, O09522, O09523, O43129, O43121, O43122, O43123, O43219, O43229, O43239, O228X9, O228X1, O228X2, O228X3, O88019, O88011, O88012, O88013, O88119, O88111, O88112, O88113, O88219, O88211, O88212, O88213, O88319, O88311, O88312, O88313, O88819, O88811, O88812, O88813, O91019, O91011, O91012, O91013, O91119, O91111, O91112, O91113, O91219, O91211, O91212, O91213, O92019, O92011, O92012, O92013, O92119, O92111, O92112, O92113, O30029, O30021, O30022, O30023, O649XX0, O641XX0, O641XX1, O641XX2, O641XX3, O641XX4, O641XX5, O641XX9, O642XX0, O642XX1, O642XX2, O642XX3, O642XX4, O642XX5, O642XX9, O643XX0, O643XX1, O643XX2, O643XX3, O643XX4, O643XX5, O643XX9, O644XX0, O644XX1, O644XX2, O644XX3, O644XX4, O644XX5, O644XX9, O645XX0, O645XX1, O645XX2, O645XX3, O645XX4, O645XX5, O645XX9, O648XX0, O648XX1, O648XX2, O648XX3, O648XX4, O648XX5, O648XX9, O649XX1, O649XX2, O649XX3, O649XX4, O649XX5, O649XX9, O6010X0, O6010X1, O6010X2, O6010X3, O6010X4, O6010X5, O6010X9, O6020X0, O6020X1, O6020X2, O6020X3, O6020X4, O6020X5, O6020X9, O6012X0, O6012X1, O6012X2, O6012X3, O6012X4, O6012X5, O6012X9, O6013X0, O6013X1, O6013X2, O6013X3, O6013X4, O6013X5, O6013X9, O6014X0, O6014X1, O6014X2, O6014X3, O6014X4, O6014X5, O6014X9, O6022X0, O6022X1, O6022X2, O6022X3, O6022X4, O6022X5, O6022X9, O6023X0, O6023X1, O6023X2, O6023X3, O6023X4, O6023X5, O6023X9, O3100X0, O3100X1, O3100X2, O3100X3, O3100X4, O3100X5, O3100X9, O3101X0, O3101X1, O3101X2, O3101X3,</p>
---

O3101X4, O3101X5, O3101X9, O3102X0, O3102X1, O3102X2, O3102X3, O3102X4, O3102X5, O3102X9, O3103X0, O3103X1, O3103X2, O3103X3, O3103X4, O3103X5, O3103X9, O3110X0, O3110X1, O3110X2, O3120X0, O3120X1, O3120X2, O3111X0, O3111X1, O3111X2, O3112X0, O3112X1, O3112X2, O3113X0, O3113X1, O3113X2, O3121X0, O3121X1, O3121X2, O3122X0, O3122X1, O3122X2, O3123X0, O3123X1, O3123X2, O3110X3, O3110X4, O3110X5, O3110X9, O3120X3, O3120X4, O3120X5, O3120X9, O3111X3, O3111X4, O3111X5, O3111X9, O3112X3, O3112X4, O3112X5, O3112X9, O3113X3, O3113X4, O3113X5, O3113X9, O3121X3, O3121X4, O3121X5, O3121X9, O3122X3, O3122X4, O3122X5, O3122X9, O3123X3, O3123X4, O3123X5, O3123X9, O3130X0, O3130X1, O3130X2, O3130X3, O3130X4, O3130X5, O3130X9, O3131X0, O3131X1, O3131X2, O3131X3, O3131X4, O3131X5, O3131X9, O3132X0, O3132X1, O3132X2, O3132X3, O3132X4, O3132X5, O3132X9, O3133X0, O3133X1, O3133X2, O3133X3, O3133X4, O3133X5, O3133X9, O318X10, O318X11, O318X12, O318X13, O318X14, O318X15, O318X19, O318X20, O318X21, O318X22, O318X23, O318X24, O318X25, O318X29, O318X30, O318X31, O318X32, O318X33, O318X34, O318X35, O318X39, O318X90, O318X91, O318X92, O318X93, O318X94, O318X95, O318X99, O320XX0, O320XX1, O320XX2, O320XX3, O320XX4, O320XX5, O320XX9, O321XX0, O321XX1, O321XX2, O321XX3, O321XX4, O321XX5, O321XX9, O322XX0, O322XX1, O322XX2, O322XX3, O322XX4, O322XX5, O322XX9, O323XX0, O323XX1, O323XX2, O323XX3, O323XX4, O323XX5, O323XX9, O324XX0, O324XX1, O324XX2, O324XX3, O324XX4, O324XX5, O324XX9, O329XX0, O329XX1, O329XX2, O329XX3, O329XX4, O329XX5, O329XX9, O328XX0, O326XX0, O326XX1, O326XX2, O326XX3, O326XX4, O326XX5, O326XX9, O328XX1, O328XX2, O328XX3, O328XX4, O328XX5, O328XX9, O333XX0, O333XX1, O333XX2, O333XX3, O333XX4, O333XX5, O333XX9, O334XX0, O334XX1, O334XX2, O334XX3, O334XX4, O334XX5, O334XX9, O335XX0, O335XX1, O335XX2, O335XX3, O335XX4, O335XX5, O335XX9, O336XX0, O336XX1, O336XX2, O336XX3, O336XX4, O336XX5, O336XX9, O350XX0, O350XX1, O350XX2, O350XX3, O350XX4, O350XX5, O350XX9, O351XX0, O351XX1, O351XX2, O351XX3, O351XX4, O351XX5, O351XX9, O352XX0, O352XX1, O352XX2, O352XX3, O352XX4, O352XX5, O352XX9, O353XX0, O353XX1, O353XX2, O353XX3, O353XX4, O353XX5, O353XX9, O354XX0, O354XX1, O354XX2, O354XX3, O354XX4, O354XX5, O354XX9, O355XX0, O355XX1, O355XX2, O355XX3, O355XX4, O355XX5, O355XX9, O356XX0, O356XX1, O356XX2, O356XX3, O356XX4, O356XX5, O356XX9, O368190, O368120, O368121, O368122, O368123, O368124, O368125, O368129, O368130, O368131, O368132, O368133, O368134, O368135, O368139, O368191, O368192, O368193, O368194, O368195, O368199, O358XX0, O358XX1, O358XX2, O358XX3, O358XX4, O358XX5, O358XX9, O359XX0, O359XX1, O359XX2, O359XX3, O359XX4, O359XX5, O359XX9, O360190, O360191, O360192, O360193, O360194, O360195, O360199, O360990, O360991, O360992, O360993, O360994, O360995, O360999, O360110, O360111, O360112, O360113, O360114, O360115, O360119, O360120, O360121, O360122, O360123, O360124, O360125, O360129, O360130, O360131, O360132, O360133, O360134, O360135, O360139, O360910, O360911, O360912, O360913, O360914, O360915, O360919, O360920, O360921, O360922, O360923, O360924, O360925, O360929, O360930, O360931, O360932, O360933, O360934, O360935, O360939, O361190, O361191, O361192, O361193, O361194, O361195, O361199, O361990, O361991, O361992, O361993, O361994, O361995, O361999, O361110, O361111, O361112, O361113, O361114, O361115, O361119, O361120, O361121, O361122, O361123, O361124, O361125, O361129, O361130, O361131, O361132, O361133, O361134, O361135, O361139, O361910, O361911, O361912, O361913, O361914, O361915, O361919, O361920, O361921, O361922, O361923, O361924, O361925, O361929, O361930, O361931, O361932, O361933, O361934, O361935, O361939, O364XX0, O364XX1, O364XX2, O364XX3, O364XX4, O364XX5, O364XX9, O365190, O365191, O365192, O365193, O365194, O365195, O365199, O365990, O365991, O365992, O365993, O365994, O365995, O365999, O365110, O365111, O365112, O365113, O365114, O365115, O365119, O365120, O365121, O365122, O365123, O365124, O365125, O365129, O365130, O365131, O365132, O365133, O365134, O365135, O365139, O365910, O365911, O365912, O365913, O365914, O365915, O365919, O365920, O365921, O365922, O365923, O365924, O365925, O365929, O365930, O365931, O365932, O365933, O365934, O365935, O365939, O3660X0, O3660X1, O3660X2, O3660X3, O3660X4, O3660X5, O3660X9, O3661X0, O3661X1, O3661X2, O3661X3, O3661X4, O3661X5, O3661X9, O3662X0, O3662X1, O3662X2, O3662X3, O3662X4, O3662X5, O3662X9, O3663X0, O3663X1, O3663X2, O3663X3, O3663X4, O3663X5, O3663X9, O3620X0, O3620X1, O3620X2, O3620X3, O3620X4, O3620X5, O3620X9, O3670X0, O3670X1, O3670X2, O3670X3, O3670X4, O3670X5, O3670X9, O368990, O368991, O368992, O368993, O368994, O368995, O368999, O3621X0, O3621X1, O3621X2, O3621X3, O3621X4, O3621X5, O3621X9, O3622X0, O3622X1, O3622X2, O3622X3, O3622X4, O3622X5, O3622X9, O3623X0, O3623X1, O3623X2, O3623X3, O3623X4, O3623X5, O3623X9, O3671X0, O3671X1, O3671X2, O3671X3, O3671X4, O3671X5, O3671X9, O3672X0, O3672X1, O3672X2, O3672X3, O3672X4, O3672X5, O3672X9, O3673X0, O3673X1, O3673X2,
---

	O3673X3, O3673X4, O3673X5, O3673X9, O368910, O368911, O368912, O368913, O368914, O368915, O368919, O368920, O368921, O368922, O368923, O368924, O368925, O368929, O368930, O368931, O368932, O368933, O368934, O368935, O368939, O3690X0, O3690X1, O3690X2, O3690X3, O3690X4, O3690X5, O3690X9, O3691X0, O3691X1, O3691X2, O3691X3, O3691X4, O3691X5, O3691X9, O3692X0, O3692X1, O3692X2, O3692X3, O3692X4, O3692X5, O3692X9, O3693X0, O3693X1, O3693X2, O3693X3, O3693X4, O3693X5, O3693X9, O409XX0, O409XX1, O409XX2, O409XX3, O409XX4, O409XX5, O409XX9, O401XX0, O401XX1, O401XX2, O401XX3, O401XX4, O401XX5, O401XX9, O402XX0, O402XX1, O402XX2, O402XX3, O402XX4, O402XX5, O402XX9, O403XX0, O403XX1, O403XX2, O403XX3, O403XX4, O403XX5, O403XX9, O4100X0, O4100X1, O4100X2, O4100X3, O4100X4, O4100X5, O4100X9, O4101X0, O4101X1, O4101X2, O4101X3, O4101X4, O4101X5, O4101X9, O4102X0, O4102X1, O4102X2, O4102X3, O4102X4, O4102X5, O4102X9, O4103X0, O4103X1, O4103X2, O4103X3, O4103X4, O4103X5, O4103X9, O411090, O411091, O411092, O411093, O411094, O411095, O411099, O411099, O411290, O411291, O411292, O411293, O411294, O411295, O411299, O411490, O411491, O411492, O411493, O411494, O411495, O411499, O411010, O411011, O411012, O411013, O411014, O411015, O411019, O411020, O411021, O411022, O411023, O411024, O411025, O411029, O411030, O411031, O411032, O411033, O411034, O411035, O411039, O411210, O411211, O411212, O411213, O411214, O411215, O411219, O411220, O411221, O411222, O411223, O411224, O411225, O411229, O411230, O411231, O411232, O411233, O411234, O411235, O411239, O411410, O411411, O411412, O411413, O411414, O411415, O411419, O411420, O411421, O411422, O411423, O411424, O411425, O411429, O411430, O411431, O411432, O411433, O411434, O411435, O411439, O418X90, O418X91, O418X92, O418X93, O418X94, O418X95, O418X99, O418X10, O418X11, O418X12, O418X13, O418X14, O418X15, O418X19, O418X20, O418X21, O418X22, O418X23, O418X24, O418X25, O418X29, O418X30, O418X31, O418X32, O418X33, O418X34, O418X35, O418X39, O4190X0, O4190X1, O4190X2, O4190X3, O4190X4, O4190X5, O4190X9, O4191X0, O4191X1, O4191X2, O4191X3, O4191X4, O4191X5, O4191X9, O4192X0, O4192X1, O4192X2, O4192X3, O4192X4, O4192X5, O4192X9, O4193X0, O4193X1, O4193X2, O4193X3, O4193X4, O4193X5, O4193X9, O640XX0, O640XX1, O640XX2, O640XX3, O640XX4, O640XX5, O640XX9, O690XX0, O690XX1, O690XX2, O690XX3, O690XX4, O690XX5, O690XX9, O691XX0, O691XX1, O691XX2, O691XX3, O691XX4, O691XX5, O691XX9, O692XX0, O692XX1, O692XX2, O692XX3, O692XX4, O692XX5, O692XX9, O6981X0, O6982X0, O6989X0, O6981X1, O6981X2, O6981X3, O6981X4, O6981X5, O6981X9, O6982X1, O6982X2, O6982X3, O6982X4, O6982X5, O6982X9, O6989X1, O6989X2, O6989X3, O6989X4, O6989X5, O6989X9, O693XX0, O693XX1, O693XX2, O693XX3, O693XX4, O693XX5, O693XX9, O694XX0, O694XX1, O694XX2, O694XX3, O694XX4, O694XX5, O694XX9, O695XX0, O695XX1, O695XX2, O695XX3, O695XX4, O695XX5, O695XX9, O699XX0, O699XX1, O699XX2, O699XX3, O699XX4, O699XX5, O699XX9, O368290, O368291, O368292, O368293, O368294, O368295, O368299, O368210, O368211, O368212, O368213, O368214, O368215, O368219, O368220, O368221, O368222, O368223, O368224, O368225, O368229, O368230, O368231, O368232, O368233, O368234, O368235, O368239, Z3400, Z3401, Z3402, Z3403, Z3480, Z3481, Z3482, Z3483, Z3490, Z3491, Z3492, Z3493, Z331, O0900, O0901, O0902, O0903, O0910, O0911, O0912, O0913, O09291, O0940, O0941, O0942, O0943, O09211, O09212, O09213, O09219, O0910, O0911, O0912, O0913, O09291, O09292, O09293, O09299, O09291, O09292, O09293, O0930, O0931, O0932, O0933, O09511, O09512, O09513, O09519, O09521, O09522, O09523, O09529, O09611, O09612, O09613, O09619, O09621, O09622, O09623, O09629, O09811, O09812, O09813, O09819, O09821, O09822, O09823, O09829, O3680X0, O3680X1, O3680X2, O3680X3, O3680X4, O3680X5, O3680X9, O0970, O0971, O0972, O0973, O09891, O09892, O09893, O09899, O0990, O0991, O0992, O0993, Z370, Z371, Z372, Z373, Z374, Z3750, Z3751, Z3752, Z3753, Z3754, Z3759, Z3760, Z3761, Z3762, Z3763, Z3764, Z3769, Z377, Z379, Z36Z640
<b>ICD-9-PCS CODES</b>	72.00-75.99
<b>ICD-10-PCS CODES</b>	0DQP0ZZ, 0DQP3ZZ, 0DQP4ZZ, 0DQP7ZZ, 0DQP8ZZ, 0DQR0ZZ, 0DQR3ZZ, 0DQR4ZZ, 0JCB0ZZ, 0JCB3ZZ, 0Q820ZZ, 0Q823ZZ, 0Q824ZZ, 0Q830ZZ, 0Q833ZZ, 0Q834ZZ, 0TQB0ZZ, 0TQB3ZZ, 0TQB4ZZ, 0TQB7ZZ, 0TQB8ZZ, 0TQD0ZZ, 0TQD3ZZ, 0TQD4ZZ, 0TQD7ZZ, 0TQD8ZZ, 0TQDXZZ, 0U7C7ZZ, 0UCG0ZZ, 0UCG3ZZ, 0UCG4ZZ, 0UCM0ZZ, 0UJD7ZZ, 0UQ90ZZ, 0UQ93ZZ, 0UQ94ZZ, 0UQ97ZZ, 0UQ98ZZ, 0UQC0ZZ, 0UQC3ZZ, 0UQC4ZZ, 0UQC7ZZ, 0UQC8ZZ, 0UQG0ZZ, 0UQG3ZZ, 0UQG4ZZ, 0UQG7ZZ, 0UQG8ZZ, 0UQG9ZZ, 0UQM0ZZ, 0UQM9ZZ, 0US90ZZ, 0US94ZZ, 0US9XZZ, 0W3R0ZZ, 0W3R3ZZ, 0W3R4ZZ, 0W3R7ZZ, 0W3R8ZZ, 0W8NXZZ, 0WQNXZZ, 10900Z9, 10900ZA, 10900ZB, 10900ZC, 10900ZD, 10900ZU, 10903Z9, 10903ZA, 10903ZB, 10903ZC, 10903ZD, 10903ZU, 10904Z9, 10904ZA, 10904ZB, 10904ZC, 10904ZD, 10904ZU, 10907Z9, 10907ZA, 10907ZB, 10907ZC, 10907ZD, 10907ZU, 10908Z9, 10908ZA, 10908ZB, 10908ZC,

	10908ZD, 10908ZU, 10A00ZZ, 10A03ZZ, 10A04ZZ, 10A07Z6, 10A07ZX, 10A07ZZ, 10A08ZZ, 10D00Z0, 10D00Z1, 10D00Z2, 10D07Z3, 10D07Z4, 10D07Z5, 10D07Z6, 10D07Z7, 10D07Z8, 10D17ZZ, 10D18ZZ, 10E0XZZ, 10H00Z3, 10H00YZ, 10H07Z3, 10H07YZ, 10J00ZZ, 10J03ZZ, 10J04ZZ, 10J07ZZ, 10J08ZZ, 10J0XZZ, 10J10ZZ, 10J13ZZ, 10J14ZZ, 10J17ZZ, 10J18ZZ, 10J1XZZ, 10J20ZZ, 10J23ZZ, 10J24ZZ, 10J27ZZ, 10J28ZZ, 10J2XZZ, 10P00Z3, 10P00YZ, 10P07Z3, 10P07YZ, 10Q00YE, 10Q00YF, 10Q00YG, 10Q00YH, 10Q00YJ, 10Q00YK, 10Q00YL, 10Q00YM, 10Q00YN, 10Q00YP, 10Q00YQ, 10Q00YR, 10Q00YS, 10Q00YT, 10Q00YV, 10Q00YY, 10Q00ZE, 10Q00ZF, 10Q00ZG, 10Q00ZH, 10Q00ZJ, 10Q00ZK, 10Q00ZL, 10Q00ZM, 10Q00ZN, 10Q00ZP, 10Q00ZQ, 10Q00ZR, 10Q00ZS, 10Q00ZT, 10Q00ZV, 10Q00ZY, 10Q03YE, 10Q03YF, 10Q03YG, 10Q03YH, 10Q03YJ, 10Q03YK, 10Q03YL, 10Q03YM, 10Q03YN, 10Q03YP, 10Q03YQ, 10Q03YR, 10Q03YS, 10Q03YT, 10Q03YV, 10Q03YY, 10Q03ZE, 10Q03ZF, 10Q03ZG, 10Q03ZH, 10Q03ZJ, 10Q03ZK, 10Q03ZL, 10Q03ZM, 10Q03ZN, 10Q03ZP, 10Q03ZQ, 10Q03ZR, 10Q03ZS, 10Q03ZT, 10Q03ZV, 10Q03ZY, 10Q04YE, 10Q04YF, 10Q04YG, 10Q04YH, 10Q04YJ, 10Q04YK, 10Q04YL, 10Q04YM, 10Q04YN, 10Q04YP, 10Q04YQ, 10Q04YR, 10Q04YS, 10Q04YT, 10Q04YV, 10Q04YY, 10Q04ZE, 10Q04ZF, 10Q04ZG, 10Q04ZH, 10Q04ZJ, 10Q04ZK, 10Q04ZL, 10Q04ZM, 10Q04ZN, 10Q04ZP, 10Q04ZQ, 10Q04ZR, 10Q04ZS, 10Q04ZT, 10Q04ZV, 10Q04ZY, 10Q07YE, 10Q07YF, 10Q07YG, 10Q07YH, 10Q07YJ, 10Q07YK, 10Q07YL, 10Q07YM, 10Q07YN, 10Q07YP, 10Q07YQ, 10Q07YR, 10Q07YS, 10Q07YT, 10Q07YV, 10Q07YY, 10Q07ZE, 10Q07ZF, 10Q07ZG, 10Q07ZH, 10Q07ZJ, 10Q07ZK, 10Q07ZL, 10Q07ZM, 10Q07ZN, 10Q07ZP, 10Q07ZQ, 10Q07ZR, 10Q07ZS, 10Q07ZT, 10Q07ZV, 10Q07ZY, 10Q08YE, 10Q08YF, 10Q08YG, 10Q08YH, 10Q08YJ, 10Q08YK, 10Q08YL, 10Q08YM, 10Q08YN, 10Q08YP, 10Q08YQ, 10Q08YR, 10Q08YS, 10Q08YT, 10Q08YV, 10Q08YY, 10Q08ZE, 10Q08ZF, 10Q08ZG, 10Q08ZH, 10Q08ZJ, 10Q08ZK, 10Q08ZL, 10Q08ZM, 10Q08ZN, 10Q08ZP, 10Q08ZQ, 10Q08ZR, 10Q08ZS, 10Q08ZT, 10Q08ZV, 10Q08ZY, 10S07ZZ, 10S0XZZ, 10T20ZZ, 10T23ZZ, 10T24ZZ, 10Y03ZE, 10Y03ZF, 10Y03ZG, 10Y03ZH, 10Y03ZJ, 10Y03ZK, 10Y03ZL, 10Y03ZM, 10Y03ZN, 10Y03ZP, 10Y03ZQ, 10Y03ZR, 10Y03ZS, 10Y03ZT, 10Y03ZV, 10Y03ZY, 10Y04ZE, 10Y04ZF, 10Y04ZG, 10Y04ZH, 10Y04ZJ, 10Y04ZK, 10Y04ZL, 10Y04ZM, 10Y04ZN, 10Y04ZP, 10Y04ZQ, 10Y04ZR, 10Y04ZS, 10Y04ZT, 10Y04ZV, 10Y04ZY, 10Y07ZE, 10Y07ZF, 10Y07ZG, 10Y07ZH, 10Y07ZJ, 10Y07ZK, 10Y07ZL, 10Y07ZM, 10Y07ZN, 10Y07ZP, 10Y07ZQ, 10Y07ZR, 10Y07ZS, 10Y07ZT, 10Y07ZV, 10Y07ZY, 2Y44X5Z, 30273H1, 30273J1, 30273K1, 30273L1, 30273M1, 30273N1, 30273P1, 30273Q1, 30273R1, 30273S1, 30273T1, 30273V1, 30273W1, 30277H1, 30277J1, 30277K1, 30277L1, 30277M1, 30277N1, 30277P1, 30277Q1, 30277R1, 30277S1, 30277T1, 30277V1, 30277W1, 3E0DXGC, 3E0E305, 3E0E329, 3E0E33Z, 3E0E36Z, 3E0E37Z, 3E0E3BZ, 3E0E3GC, 3E0E3HZ, 3E0E3KZ, 3E0E3NZ, 3E0E3SF, 3E0E3TZ, 3E0E705, 3E0E729, 3E0E73Z, 3E0E76Z, 3E0E77Z, 3E0E7BZ, 3E0E7GC, 3E0E7HZ, 3E0E7KZ, 3E0E7NZ, 3E0E7SF, 3E0E7TZ, 3E0E805, 3E0E829, 3E0E83Z, 3E0E86Z, 3E0E87Z, 3E0E8BZ, 3E0E8GC, 3E0E8HZ, 3E0E8KZ, 3E0E8NZ, 3E0E8SF, 3E0E8TZ, 3E0P3VZ, 3E0P7VZ, 4A0H74Z, 4A0H7CZ, 4A0H7FZ, 4A0H7HZ, 4A0H84Z, 4A0H8CZ, 4A0H8FZ, 4A0H8HZ, 4A0HX4Z, 4A0HXCZ, 4A0HXFZ, 4A0HXXZ, 4A0J72Z, 4A0J74Z, 4A0J7BZ, 4A0J82Z, 4A0J84Z, 4A0J8BZ, 4A0JX2Z, 4A0JX4Z, 4A0JXBZ, 4A1H74Z, 4A1H7CZ, 4A1H7FZ, 4A1H7HZ, 4A1H84Z, 4A1H8CZ, 4A1H8FZ, 4A1H8HZ, 4A1HX4Z, 4A1HXCZ, 4A1HXFZ, 4A1HXXZ, 4A1J72Z, 4A1J74Z, 4A1J7BZ, 4A1J82Z, 4A1J84Z, 4A1J8BZ, 4A1JX2Z, 4A1JX4Z, 4A1JXBZ
<b>HCPCS CODES</b>	59000-59350, 59400-59430, 59510-59866, 59870-59899, 76801-76828, 83661-8366

**TABLE 3: LIST OF ANTINEOPLASTIC AGENTS <sup>18</sup>**

Medication	Type	HCPCS Codes*
Abemaciclib	Oral Chemotherapy	
Abiraterone Acetate	Oral Chemotherapy	
Acalabrutinib	Oral Chemotherapy	
Ado-Trastuzumab Emtansine	Oral Chemotherapy	

Afatinib Dimaleate	Oral Chemotherapy	
Aldesleukin	IV Chemotherapy	J9015
Alectinib	Oral Chemotherapy	
Alemtuzumab	IV Chemotherapy	J0202, J9010
Anastrozole	Oral Chemotherapy	
Apalutamide	Oral Chemotherapy	
Arsenic Trioxide	IV Chemotherapy	J9017
Asparaginase Erwinia chrysanthemi	Oral Chemotherapy	
Atezolizumab	Immunotherapy	C9483, J9022
Avelumab	IV Chemotherapy	C9491, J9023
Axicabtagene Ciloleucel	IV Chemotherapy	Q2041
Axitinib	Oral Chemotherapy	
Azacitidine	IV Chemotherapy	J9025
Bendamustine Hydrochloride	IV Chemotherapy	J9033, J9034
Bevacizumab	IV Chemotherapy	C9257, J9035
Bexarotene	Oral Chemotherapy	
Bicalutamide	Oral Chemotherapy	
Bleomycin	Oral Chemotherapy	J9040
Blinatumomab	Oral Chemotherapy	
Bortezomib	Oral Chemotherapy	
Bosutinib	Oral Chemotherapy	
Brentuximab Vedotin	IV Chemotherapy	J9042
Brigatinib	Oral Chemotherapy	
BuMel	Oral Chemotherapy	
Busulfan	IV Chemotherapy	J0594, J8510
Cabazitaxel	IV Chemotherapy	J9043
Cabozantinib-S-Malate	Oral Chemotherapy	
Capecitabine	IV Chemotherapy	J8520, J8521
Carboplatin	IV Chemotherapy	J9045
Carfilzomib	IV Chemotherapy	J9047
Carmustine	IV Chemotherapy	J9050
Ceritinib	Oral Chemotherapy	
Cetuximab	IV Chemotherapy	J9055
Chlorambucil	Oral Chemotherapy	S0172

Cisplatin	IV Chemotherapy	J9060
Cladribine	IV Chemotherapy	J9065
Clofarabine	IV Chemotherapy	J9027
Cobimetinib	Oral Chemotherapy	
Copanlisib Hydrochloride	IV Chemotherapy	C9030
Crizotinib	Oral Chemotherapy	
Cyclophosphamide	IV Chemotherapy	J8530, J9070
Cytarabine	IV Chemotherapy	J9100
Cytarabine Liposome	IV Chemotherapy	J9098, C9024
Dabrafenib	Oral Chemotherapy	
Dacarbazine	IV Chemotherapy	J9130
Dactinomycin	IV Chemotherapy	J9120
Daratumumab	IV Chemotherapy	C9476, J9145
Dasatinib	Oral Chemotherapy	
Daunorubicin Hydrochloride	IV Chemotherapy	J9150, J9151
Daunorubicin Hydrochloride and Cytarabine Liposome	IV Chemotherapy	C9024
Decitabine	IV Chemotherapy	J0894
Degarelix	IV Chemotherapy	J9155
Denileukin Diftitox	IV Chemotherapy	J9160
Docetaxel	IV Chemotherapy	J9171
Doxorubicin Hydrochloride	IV Chemotherapy	J9000
Doxorubicin Hydrochloride Liposome	IV Chemotherapy	Q2049, Q2050
Durvalumab	Immunotherapy	C9492
Elotuzumab	IV Chemotherapy	C9477, C9176
Enasidenib Mesylate	Oral Chemotherapy	
Enzalutamide	Oral Chemotherapy	
Epirubicin Hydrochloride	IV Chemotherapy	J9178
Eribulin Mesylate	IV Chemotherapy	J9179
Erlotinib Hydrochloride	Oral Chemotherapy	
Etoposide	IV Chemotherapy	J8560, J9181
Everolimus	IV Chemotherapy	J7527
Exemestane	Oral Chemotherapy	
Fludarabine Phosphate	IV Chemotherapy	J8562, J9185

Fluorouracil Injection	IV Chemotherapy	J9190
Fluorouracil--Topical	Oral Chemotherapy	
Flutamide	Oral Chemotherapy	
Fulvestrant	IV Chemotherapy	J9395
Gefitinib	IV Chemotherapy	J8565
Gemcitabine Hydrochloride	IV Chemotherapy	J9201
Gemtuzumab Ozogamicin	IV Chemotherapy	J9203, J9300
Goserelin Acetate	IV Chemotherapy	J9202
Hydroxyurea	Oral Chemotherapy	S0176
Ibritumomab Tiuxetan	IV Chemotherapy	A9542, A9543
Ibrutinib	Oral Chemotherapy	
Idarubicin Hydrochloride	IV Chemotherapy	J9211
Idelalisib	Oral Chemotherapy	
Ifosfamide	IV Chemotherapy	J9208
IL-2 (Aldesleukin)	IV Chemotherapy	J9015
Imatinib Mesylate	Oral Chemotherapy	S0088
Inotuzumab Ozogamicin	IV Chemotherapy	C9028
Ipilimumab	Immunotherapy	J9228
Irinotecan Hydrochloride	IV Chemotherapy	J9206
Irinotecan Hydrochloride Liposome	IV Chemotherapy	J9205, C9474
Ixabepilone	IV Chemotherapy	J9207
Ixazomib Citrate	Oral Chemotherapy	
Lapatinib Ditosylate	Oral Chemotherapy	
Lenalidomide	Oral Chemotherapy	
Lenvatinib Mesylate	Oral Chemotherapy	
Letrozole	Oral Chemotherapy	
Leuprolide Acetate	IV Chemotherapy	J1950, J9217, J9218, J9219
Lomustine	Oral Chemotherapy	S0178
Mechlorethamine Hydrochloride	IV Chemotherapy	J9230
Melphalan	IV Chemotherapy	J8600
Melphalan Hydrochloride	IV Chemotherapy	J9245
Mercaptopurine	Oral Chemotherapy	S0108
Methotrexate	Oral Chemotherapy	J8610, J9250, J9260

Midostaurin	Oral Chemotherapy	
Mitomycin C	IV Chemotherapy	J7315, J9280
Mitoxantrone Hydrochloride	IV Chemotherapy	J9293
Necitumumab	IV Chemotherapy	C9475, J9292
Nelarabine	IV Chemotherapy	J9261
Neratinib Maleate	Oral Chemotherapy	
Nilotinib	Oral Chemotherapy	
Nilutamide	Oral Chemotherapy	
Nivolumab	Immunotherapy	C9453, J9299
Obinutuzumab	IV Chemotherapy	C9021, J9301
Ofatumumab	IV Chemotherapy	J9302
Olaparib	Oral Chemotherapy	
Olaratumab	IV Chemotherapy	C9485, J9285
Omacetaxine Mepesuccinate	IV Chemotherapy	J9262
Osimertinib	Oral Chemotherapy	
Oxaliplatin	IV Chemotherapy	J9263
Paclitaxel	IV Chemotherapy	J9264, J9265, J9267, S1016
Palbociclib	Oral Chemotherapy	
Panitumumab	IV Chemotherapy	J9303
Panobinostat	Oral Chemotherapy	
Pazopanib Hydrochloride	Oral Chemotherapy	
Pegaspargase	IV Chemotherapy	J9266
Peginterferon Alfa-2b	IV Chemotherapy	S0148
Pembrolizumab	Immunotherapy	C9027, J9271
Pemetrexed Disodium	IV Chemotherapy	J9305
Pertuzumab	IV Chemotherapy	J9306
Pomalidomide	Oral Chemotherapy	
Ponatinib Hydrochloride	Oral Chemotherapy	
Pralatrexate	IV Chemotherapy	J9307
Procarbazine Hydrochloride	Oral Chemotherapy	S0182
Radium 223 Dichloride	IV Chemotherapy	A9606
Ramucirumab	IV Chemotherapy	C9025, J9308
Recombinant Interferon Alfa-2b	IV Chemotherapy	J9214

Regorafenib	Oral Chemotherapy	
Ribociclib	Oral Chemotherapy	
Rituxan (Rituximab)	IV Chemotherapy	J9310
Rituxan Hycela (Rituximab and Hyaluronidase Human)	IV Chemotherapy	C9467
Romidepsin	IV Chemotherapy	J9315
Rucaparib Camsylate	Oral Chemotherapy	
Ruxolitinib Phosphate	Oral Chemotherapy	
Siltuximab	IV Chemotherapy	C9455, J2860
Sipuleucel-T	IV Chemotherapy	Q2043
Sonidegib	Oral Chemotherapy	
Sorafenib Tosylate	Oral Chemotherapy	
Sunitinib Malate	Oral Chemotherapy	
Talimogene Laherparepvec	IV Chemotherapy	C9472, J9325
Tamoxifen Citrate	Oral Chemotherapy	S0187
Temozolomide	IV Chemotherapy	J8700, J9328
Temsirolimus	IV Chemotherapy	J9330
Thalidomide	Oral Chemotherapy	
Thioguanine	Oral Chemotherapy	
Thiotepa	IV Chemotherapy	J9340
Tisagenlecleucel	IV Chemotherapy	Q2040
Topotecan Hydrochloride	IV Chemotherapy	J8705, J9351
Toremifene	Oral Chemotherapy	
Trabectedin	IV Chemotherapy	C9480, J9352
Trametinib	Oral Chemotherapy	
Trastuzumab	IV Chemotherapy	J9354, J9355
Trifluridine and Tipiracil Hydrochloride	Oral Chemotherapy	
Valrubicin	IV Chemotherapy	J9357
Vandetanib	Oral Chemotherapy	
Vemurafenib	Oral Chemotherapy	
Venetoclax	Oral Chemotherapy	
Vinblastine Sulfate	IV Chemotherapy	J9360
Vincristine Sulfate	IV Chemotherapy	J9370
Vincristine Sulfate Liposome	IV Chemotherapy	J9371

Vinorelbine Tartrate	IV Chemotherapy	J9390
Vismodegib	Oral Chemotherapy	
Vorinostat	Oral Chemotherapy	
Ziv-Aflibercept	IV Chemotherapy	J9400

\* use NDC codes wherever applicable

**TABLE 4: LIST OF CHEMOTHERAPY ADMINISTRATION CODES<sup>18</sup>**

<b>CPT Codes</b>	36640, 61517, 96401, 96402, 96405, 96406, 96409, 96411, 96413, 96415, 96416, 96417, 96420, 96422, 96423, 96425, 96440, 96445, 96446, 96450, 96542, 96549, 99555, Q0083, Q0084, Q0085, S9329, S9330, S9331, 180F, 36640, 96410, 96408, 96400, 219583, 96542, 203682, 96414, 96412, 242226, 61517, 219687, 0519F, 96545, 206820, 206929, 96549, 99601, 99602, 62360, 62361, 62362, 36823, 36260, 61215, 90765, 90766, 90767, 90768, 96365, 96366, 96367, 96368, 96523, 90781, 90780, 96530, 96520, 95990, 95991, 96522, 96521, 62365, 0169T, 90775, 90776, 90773, 90774, 90772, 90783, 90784, 90782, 90799, 90779, 96379, 81350, 96912, 96910, 96570, 96571, 96567, 83520
<b>Revenue Codes</b>	331, 332, 335,
<b>ICD-9-PCS</b>	99.28, 99.25, 99.29, 17.7, 00.1x, 00.15
<b>ICD-10-PCS</b>	3E06003, 3E06003, 3E06303, 3E06303, 3E04003, 3E04003, 3E04303, 3E04303, 3E0S303, 3E0S303, 3E05003, 3E05003, 3E05303, 3E05303, 3E03003, 3E03003, 3E03303, 3E03303, 3E0R303, 3E0R303, 3E0J30M, 3E0J30M, 3E0J70M, 3E0J70M, 3E0J80M, 3E0J80M, 3E0A30M, 3E0A30M, 3E0V30M, 3E0V30M, 3E0600M, 3E0600M, 3E0630M, 3E0630M, 3E0400M, 3E0400M, 3E0430M, 3E0430M, 3E0Q30M, 3E0Q30M, 3E0Q70M, 3E0Q70M, 3E0BX0M, 3E0BX0M, 3E0B30M, 3E0B30M, 3E0B70M, 3E0B70M, 3E0S30M, 3E0S30M, 3E0CX0M, 3E0CX0M, 3E0C30M, 3E0C30M, 3E0C70M, 3E0C70M, 3E0P30M, 3E0P30M, 3E0P70M, 3E0P70M, 3E0P80M, 3E0P80M, 3E0K30M, 3E0K30M, 3E0K70M, 3E0K70M, 3E0K80M, 3E0K80M, 3E0U30M, 3E0U30M, 3E0H30M, 3E0H30M, 3E0H70M, 3E0H70M, 3E0H80M, 3E0H80M, 3E0W30M, 3E0W30M, 3E0N30M, 3E0N30M, 3E0N70M, 3E0N70M, 3E0N80M, 3E0N80M, 3E0DX0M, 3E0DX0M, 3E0D30M, 3E0D30M, 3E0D70M, 3E0D70M, 3E0230M, 3E0230M, 3E09X0M, 3E09X0M, 3E0930M, 3E0930M, 3E0970M, 3E0970M, 3E0Y30M, 3E0Y30M, 3E0Y70M, 3E0Y70M, 3E0500M, 3E0500M, 3E0530M, 3E0530M, 3E0300M, 3E0300M, 3E0330M, 3E0330M, 3E0M30M, 3E0M30M, 3E0M70M, 3E0M70M, 3E0L30M, 3E0L30M, 3E0L70M, 3E0L70M, 3E0E30M, 3E0E30M, 3E0E70M, 3E0E70M, 3E0E80M, 3E0E80M, 3E0F30M, 3E0F30M, 3E0F70M, 3E0F70M, 3E0F80M, 3E0F80M, 3E00X0M, 3E00X0M, 3E0R30M, 3E0R30M, 3E0130M, 3E0130M, 3E0G30M, 3E0G30M, 3E0G70M, 3E0G70M, 3E0G80M, 3E0G80M, 3E06005, 3E06305, 3E04005, 3E04305, 3E0BX05, 3E0B305, 3E0B705, 3E0S305, 3E0CX05, 3E0C305, 3E0C705, 3E0U305, 3E0DX05, 3E0D305, 3E0D705, 3E09X05, 3E09305, 3E09705, 3E05005, 3E05305, 3E03005, 3E03305, 3E0R305, 3E0600P, 3E0630P, 3E0400P, 3E0430P, 3E0500P, 3E0530P, 3E0300P, 3E0330P, XW04351, XW03351

**TABLE 5: RADIATION THERAPY CODES<sup>18</sup>**

<b>ICD-9- Diagnosis</b>	V58.0, V66.1, V67.1, E873.2, E879.2
-------------------------	-------------------------------------

Apixaban  
NON-INTERVENTIONAL STUDY PROTOCOL  
10 August 2018

<b>ICD-10-Diagnosis</b>	Z51.0, Z51.89, Z08, Z09, Y63.2, Y84.2
<b>CPT Codes</b>	77280, 77285, 77290, 77295, 77299, 77300, 77301, 77305, 77310, 77315, 77321, 77326, 77327, 77328, 77331, 77332, 77333, 77334, 77336, 77338, 77371, 77372, 77373, 77399, 77401, 77402, 77403, 77404, 77406, 77407, 77408, 77409, 77411, 77412, 77413, 77414, 77416, 77417, 77418, 77421, 77422, 77423, 77424, 77425, 77427, 77431, 77432, 77435, 77469, 77470, 77499, 77520, 77522, 77523, 77525, 77750, 77761, 77762, 77763, 77776, 77777, 77778, 77785, 77786, 77787, 77789, 77799, 0073T, 0082T, 0083T, 0182T, 0190T, 0197T, 19296, 19297, 19298, 20555, 20660, 31463, 32553, 41019, 49411, 49412, 52250, 55859, 55860, 55875, 55876, 55920, 57155, 57156, 58346, 61720, 61735, 61770, 61781, 61782, 61783, 61793, 61795, 61796, 61797, 61798, 61799, 61800, 63620, 63621, 73670, 76950, 76965, 77014, 77261, 77262, 77263, , 77285, 77306, 77307, 77370, 77380, 77381, 77385, 77386, 77387, 77405, 77410, 77415, 77419, 77420, 77430, 77781, 77782, 77783, 77784, 77790, 79005, 79030, 79035, 79100, 79101, 79200, 79300, 79400, 79403, 79420, 79440, 79445, 79900, 79999
<b>ICD-9 Procedure Codes</b>	92.2, 92.3, 92.4
<b>ICD-10 Procedure Codes</b>	3E0B304, 3E0B704, 3E0BX04, 3E0C304, 3E0C704, 3E0CX04, 3E0D304, 3E0D704, 3E0DX04, 3E0E304, 3E0E704, 3E0E804, 3E0F304, 3E0F704, 3E0F804, 3E0G304, 3E0G704, 3E0G804, 3E0H304, 3E0H704, 3E0H804, 3E0J304, 3E0J704, 3E0J804, 3E0K304, 3E0K704, 3E0K804, 3E0L304, 3E0L704, 3E0M304, 3E0M704, 3E0N304, 3E0N704, 3E0N804, 3E0P304, 3E0P704, 3E0P804, 3E0Q304, 3E0Q704, 3E0R304, 3E0S304, 3E0U304, 3E0Y304, 3E0Y704, D0Y07ZZ, D0Y17ZZ, D0Y67ZZ, D0Y77ZZ, D8Y07ZZ, D9Y07ZZ, D9Y17ZZ, D9Y37ZZ, D9Y47ZZ, D9Y57ZZ, D9Y67ZZ, D9Y77ZZ, D9Y87ZZ, D9Y97ZZ, D9YB7ZZ, D9YD7ZZ, D9YF7ZZ, DBY07ZZ, DBY17ZZ, DBY27ZZ, DBY57ZZ, DBY67ZZ, DBY77ZZ, DBY87ZZ, DDY07ZZ, DDY17ZZ, DDY27ZZ, DDY37ZZ, DDY47ZZ, DDY57ZZ, DDY77ZZ, DFX07ZZ, DFX17ZZ, DFX27ZZ, DFX37ZZ, DFX47ZZ, DFX57ZZ, DFX77ZZ, DFX87ZZ, DFX97ZZ, DFXB7ZZ, DFXD7ZZ, DFXF7ZZ, DFXG7ZZ, DFXH7ZZ, DFXJ7ZZ, DFXK7ZZ, DFXL7ZZ, DFXM7ZZ, DFXN7ZZ, DFXO7ZZ, DFXP7ZZ, DFXQ7ZZ, DFXR7ZZ, DFXS7ZZ, DFXU7ZZ, DFXV7ZZ, DFXW7ZZ, DFXX7ZZ, DFXY7ZZ, DFXZ7ZZ, DGY07ZZ, DGY17ZZ, DGY27ZZ, DGY47ZZ, DGY57ZZ, DHY07ZZ, DHY17ZZ, DHY27ZZ, DHY37ZZ, DHY47ZZ, DHY57ZZ, DHY67ZZ, DHY77ZZ, DHY87ZZ, DHY97ZZ, DHYB7ZZ, DMY07ZZ, DMY17ZZ, DMY27ZZ, DMY37ZZ, DMY47ZZ, DMY57ZZ, DMY67ZZ, DMY77ZZ, DMY87ZZ, DMY97ZZ, DMYB7ZZ, DMYC7ZZ, DTY07ZZ, DTY17ZZ, DTY27ZZ, DTY37ZZ, DUY07ZZ, DUY17ZZ, DUY27ZZ, DVY07ZZ, DVY17ZZ, DWY07ZZ, DWY17ZZ, DWY27ZZ, DWY37ZZ, DWY47ZZ, DWY57ZZ, DWY67ZZ, D0000ZZ, D0010ZZ, D0060ZZ, D0070ZZ, D7000ZZ, D7010ZZ, D7020ZZ, D7030ZZ, D7040ZZ, D7050ZZ, D7060ZZ, D7070ZZ, D7080ZZ, D8000ZZ, D9000ZZ, D9010ZZ, D9030ZZ, D9040ZZ, D9050ZZ, D9060ZZ, D9070ZZ, D9080ZZ, D9090ZZ, D90B0ZZ, D90D0ZZ, D90F0ZZ, DB000ZZ, DB010ZZ, DB020ZZ, DB050ZZ, DB060ZZ, DB070ZZ, DB080ZZ, DD000ZZ, DD010ZZ, DD020ZZ, DD030ZZ, DD040ZZ, DD050ZZ, DD070ZZ, DF000ZZ, DF010ZZ, DF020ZZ, DF030ZZ, DG000ZZ, DG010ZZ, DG020ZZ, DG040ZZ, DG050ZZ, DH020ZZ, DH030ZZ, DH040ZZ, DH060ZZ, DH070ZZ, DH080ZZ, DH090ZZ, DH0B0ZZ, DM000ZZ, DM010ZZ, DP000ZZ, DP020ZZ, DP030ZZ, DP040ZZ, DP050ZZ, DP060ZZ, DP070ZZ, DP080ZZ, DP090ZZ, DP0B0ZZ, DPC0ZZ, DT000ZZ, DT010ZZ, DT020ZZ, DT030ZZ, DU000ZZ, DU010ZZ, DU020ZZ, DV000ZZ, DV010ZZ, DW010ZZ, DW020ZZ, DW030ZZ, DW040ZZ, DW050ZZ, DW060ZZ, D01097Z, D01098Z, D01099Z, D0109BZ, D0109CZ, D0109YZ, D010B7Z, D010B8Z, D010B9Z, D010BBZ, D010BCZ, D010BYZ, D01197Z, D01198Z, D01199Z, D0119BZ, D0119CZ, D0119YZ, D011B7Z, D011B8Z, D011B9Z, D011BBZ, D011BCZ, D011BYZ, D01697Z, D01698Z, D01699Z, D0169BZ, D0169CZ, D0169YZ, D016B7Z, D016B8Z, D016B9Z, D016BBZ, D016BCZ, D016BYZ, D01797Z, D01798Z, D01799Z, D0179BZ, D0179CZ, D0179YZ, D017B7Z, D017B8Z, D017B9Z, D017BBZ, D017BCZ, D017BYZ, D71097Z, D71098Z, D71099Z, D7109BZ, D7109CZ, D7109YZ, D710B7Z, D710B8Z, D710B9Z, D710BBZ, D710BCZ, D710BYZ, D71197Z, D71198Z, D71199Z, D7119BZ, D7119CZ, D7119YZ, D711B7Z, D711B8Z, D711B9Z, D711BBZ, D711BCZ, D711BYZ, D71297Z, D71298Z, D71299Z, D7129BZ, D7129CZ, D7129YZ, D712B7Z, D712B8Z, D712B9Z, D712BBZ, D712BCZ, D712BYZ, D71397Z, D71398Z, D71399Z, D7139BZ, D7139CZ, D7139YZ, D713B7Z, D713B8Z, D713B9Z, D713BBZ, D713BCZ, D713BYZ, D71497Z, D71498Z, D71499Z, D7149BZ, D7149CZ, D7149YZ, D714B7Z, D714B8Z, D714B9Z, D714BBZ, D714BCZ, D714BYZ, D71597Z, D71598Z, D71599Z, D7159BZ, D7159CZ, D7159YZ, D715B7Z, D715B8Z, D715B9Z, D715BBZ, D715BCZ, D715BYZ, D71697Z, D71698Z, D71699Z, D7169BZ, D7169CZ, D7169YZ, D716B7Z, D716B8Z, D716B9Z, D716BBZ, D716BCZ, D716BYZ, D71797Z, D71798Z, D71799Z, D7179BZ, D7179CZ, D7179YZ, D717B7Z, D717B8Z, D717B9Z, D717BBZ, D717BCZ, D717BYZ, D71897Z, D71898Z, D71899Z, D7189BZ, D7189CZ, D7189YZ, D718B7Z, D718B8Z, D718B9Z, D718BBZ,

D718BCZ, D718BYZ, D81097Z, D81098Z, D81099Z, D8109BZ, D8109CZ, D8109YZ, D810B7Z, D810B8Z, D810B9Z, D810BBZ, D810BCZ, D810BYZ, D91097Z, D91098Z, D91099Z, D9109BZ, D9109CZ, D9109YZ, D910B7Z, D910B8Z, D910B9Z, D910BBZ, D910BCZ, D910BYZ, D91197Z, D91198Z, D91199Z, D9119BZ, D9119CZ, D9119YZ, D911B7Z, D911B8Z, D911B9Z, D911BBZ, D911BCZ, D911BYZ, D91397Z, D91398Z, D91399Z, D9139BZ, D9139CZ, D9139YZ, D913B7Z, D913B8Z, D913B9Z, D913BBZ, D913BCZ, D913BYZ, D91497Z, D91498Z, D91499Z, D9149BZ, D9149CZ, D9149YZ, D914B7Z, D914B8Z, D914B9Z, D914BBZ, D914BCZ, D914BYZ, D91597Z, D91598Z, D91599Z, D9159BZ, D9159CZ, D9159YZ, D915B7Z, D915B8Z, D915B9Z, D915BBZ, D915BCZ, D915BYZ, D91697Z, D91698Z, D91699Z, D9169BZ, D9169CZ, D9169YZ, D916B7Z, D916B8Z, D916B9Z, D916BBZ, D916BCZ, D916BYZ, D91797Z, D91798Z, D91799Z, D9179BZ, D9179CZ, D9179YZ, D917B7Z, D917B8Z, D917B9Z, D917BBZ, D917BCZ, D917BYZ, D91897Z, D91898Z, D91899Z, D9189BZ, D9189CZ, D9189YZ, D918B7Z, D918B8Z, D918B9Z, D918BBZ, D918BCZ, D918BYZ, D91997Z, D91998Z, D91999Z, D9199BZ, D9199CZ, D9199YZ, D919B7Z, D919B8Z, D919B9Z, D919BBZ, D919BCZ, D919BYZ, D91B97Z, D91B98Z, D91B99Z, D91B9BZ, D91B9CZ, D91B9YZ, D91BB7Z, D91BB8Z, D91BB9Z, D91BBBZ, D91BBCZ, D91BBYZ, D91D97Z, D91D98Z, D91D99Z, D91D9BZ, D91D9CZ, D91D9YZ, D91DB7Z, D91DB8Z, D91DB9Z, D91DBBZ, D91DBCZ, D91DBYZ, D91F97Z, D91F98Z, D91F99Z, D91F9BZ, D91F9CZ, D91F9YZ, D91FB7Z, D91FB8Z, D91FB9Z, D91FBBZ, D91FBCZ, D91FBYZ, D91O97Z, D91O98Z, DB1099Z, DB109BZ, DB109CZ, DB109YZ, DB10B7Z, DB10B8Z, DB10B9Z, DB10BBZ, DB10BCZ, DB10BYZ, DB1197Z, DB1198Z, DB1199Z, DB119BZ, DB119CZ, DB119YZ, DB11B7Z, DB11B8Z, DB11B9Z, DB11BBZ, DB11BCZ, DB11BYZ, DB1297Z, DB1298Z, DB1299Z, DB129BZ, DB129CZ, DB129YZ, DB12B7Z, DB12B8Z, DB12B9Z, DB12BBZ, DB12BCZ, DB12BYZ, DB1597Z, DB1598Z, DB1599Z, DB159BZ, DB159CZ, DB159YZ, DB15B7Z, DB15B8Z, DB15B9Z, DB15BBZ, DB15BCZ, DB15BYZ, DB1697Z, DB1698Z, DB1699Z, DB169BZ, DB169CZ, DB169YZ, DB16B7Z, DB16B8Z, DB16B9Z, DB16BBZ, DB16BCZ, DB16BYZ, DB1797Z, DB1798Z, DB1799Z, DB179BZ, DB179CZ, DB179YZ, DB17B7Z, DB17B8Z, DB17B9Z, DB17BBZ, DB17BCZ, DB17BYZ, DB1897Z, DB1898Z, DB1899Z, DB189BZ, DB189CZ, DB189YZ, DB18B7Z, DB18B8Z, DB18B9Z, DB18BBZ, DB18BCZ, DB18BYZ, DD1097Z, DD1098Z, DD1099Z, DD109BZ, DD109CZ, DD109YZ, DD10B7Z, DD10B8Z, DD10B9Z, DD10BBZ, DD10BCZ, DD10BYZ, DD1197Z, DD1198Z, DD1199Z, DD119BZ, DD119CZ, DD119YZ, DD11B7Z, DD11B8Z, DD11B9Z, DD11BBZ, DD11BCZ, DD11BYZ, DD1297Z, DD1298Z, DD1299Z, DD129BZ, DD129CZ, DD129YZ, DD12B7Z, DD12B8Z, DD12B9Z, DD12BBZ, DD12BCZ, DD12BYZ, DD1397Z, DD1398Z, DD1399Z, DD139BZ, DD139CZ, DD139YZ, DD13B7Z, DD13B8Z, DD13B9Z, DD13BBZ, DD13BCZ, DD13BYZ, DD1497Z, DD1498Z, DD1499Z, DD149BZ, DD149CZ, DD149YZ, DD14B7Z, DD14B8Z, DD14B9Z, DD14BBZ, DD14BCZ, DD14BYZ, DD1597Z, DD1598Z, DD1599Z, DD159BZ, DD159CZ, DD159YZ, DD15B7Z, DD15B8Z, DD15B9Z, DD15BBZ, DD15BCZ, DD15BYZ, DD1797Z, DD1798Z, DD1799Z, DD179BZ, DD179CZ, DD179YZ, DD17B7Z, DD17B8Z, DD17B9Z, DD17BBZ, DD17BCZ, DD17BYZ, DF1097Z, DF1098Z, DF1099Z, DF109BZ, DF109CZ, DF109YZ, DF10B7Z, DF10B8Z, DF10B9Z, DF10BBZ, DF10BCZ, DF10BYZ, DF1197Z, DF1198Z, DF1199Z, DF119BZ, DF119CZ, DF119YZ, DF11B7Z, DF11B8Z, DF11B9Z, DF11BBZ, DF11BCZ, DF11BYZ, DF1297Z, DF1298Z, DF1299Z, DF129BZ, DF129CZ, DF129YZ, DF12B7Z, DF12B8Z, DF12B9Z, DF12BBZ, DF12BCZ, DF12BYZ, DF1397Z, DF1398Z, DF1399Z, DF139BZ, DF139CZ, DF139YZ, DF13B7Z, DF13B8Z, DF13B9Z, DF13BBZ, DF13BCZ, DF13BYZ, DG1097Z, DG1098Z, DG1099Z, DG109BZ, DG109CZ, DG109YZ, DG10B7Z, DG10B8Z, DG10B9Z, DG10BBZ, DG10BCZ, DG10BYZ, DG1197Z, DG1198Z, DG1199Z, DG119BZ, DG119CZ, DG119YZ, DG11B7Z, DG11B8Z, DG11B9Z, DG11BBZ, DG11BCZ, DG11BYZ, DG1297Z, DG1298Z, DG1299Z, DG129BZ, DG129CZ, DG129YZ, DG12B7Z, DG12B8Z, DG12B9Z, DG12BBZ, DG12BCZ, DG12BYZ, DG1497Z, DG1498Z, DG1499Z, DG149BZ, DG149CZ, DG149YZ, DG14B7Z, DG14B8Z, DG14B9Z, DG14BBZ, DG14BCZ, DG14BYZ, DG1597Z, DG1598Z, DG1599Z, DG159BZ, DG159CZ, DG159YZ, DG15B7Z, DG15B8Z, DG15B9Z, DG15BBZ, DG15BCZ, DG15BYZ, DM1097Z, DM1098Z, DM1099Z, DM109BZ, DM109CZ, DM109YZ, DM10B7Z, DM10B8Z, DM10B9Z, DM10BBZ, DM10BCZ, DM10BYZ, DM1197Z, DM1198Z, DM1199Z, DM119BZ, DM119CZ, DM119YZ, DM11B7Z, DM11B8Z, DM11B9Z, DM11BBZ, DM11BCZ, DM11BYZ, DT1097Z, DT1098Z, DT1099Z, DT109BZ, DT109CZ, DT109YZ, DT10B7Z, DT10B8Z, DT10B9Z, DT10BBZ, DT10BCZ, DT10BYZ, DT1197Z, DT1198Z, DT1199Z, DT119BZ, DT119CZ, DT119YZ, DT11B7Z, DT11B8Z, DT11B9Z, DT11BBZ,
--

DT11BCZ, DT11BYZ, DT1297Z, DT1298Z, DT1299Z, DT129BZ, DT129CZ, DT129YZ, DT12B7Z, DT12B8Z, DT12B9Z, DT12BBZ, DT12BCZ, DT12BYZ, DT1397Z, DT1398Z, DT1399Z, DT139BZ, DT139CZ, DT139YZ, DT13B7Z, DT13B8Z, DT13B9Z, DT13BBZ, DT13BCZ, DT13BYZ, DU1097Z, DU1098Z, DU1099Z, DU109BZ, DU109CZ, DU109YZ, DU10B7Z, DU10B8Z, DU10B9Z, DU10BBZ, DU10BCZ, DU10BYZ, DU1197Z, DU1198Z, DU1199Z, DU119BZ, DU119CZ, DU119YZ, DU11B7Z, DU11B8Z, DU11B9Z, DU11BBZ, DU11BCZ, DU11BYZ, DU1297Z, DU1298Z, DU1299Z, DU129BZ, DU129CZ, DU129YZ, DU12B7Z, DU12B8Z, DU12B9Z, DU12BBZ, DU12BCZ, DU12BYZ, DV1097Z, DV1098Z, DV1099Z, DV109BZ, DV109CZ, DV109YZ, DV10B7Z, DV10B8Z, DV10B9Z, DV10BBZ, DV10BCZ, DV10BYZ, DV1197Z, DV1198Z, DV1199Z, DV119BZ, DV119CZ, DV119YZ, DV11B7Z, DV11B8Z, DV11B9Z, DV11BBZ, DV11BCZ, DV11BYZ, DW1197Z, DW1198Z, DW1199Z, DW119BZ, DW119CZ, DW119YZ, DW11B7Z, DW11B8Z, DW11B9Z, DW11BBZ, DW11BCZ, DW11BYZ, DW1297Z, DW1298Z, DW1299Z, DW129BZ, DW129CZ, DW129YZ, DW12B7Z, DW12B8Z, DW12B9Z, DW12BBZ, DW12BCZ, DW12BYZ, DW1397Z, DW1398Z, DW1399Z, DW139BZ, DW139CZ, DW139YZ, DW13B7Z, DW13B8Z, DW13B9Z, DW13BBZ, DW13BCZ, DW13BYZ, DW1697Z, DW1698Z, DW1699Z, DW169BZ, DW169CZ, DW169YZ, DW16B7Z, DW16B8Z, DW16B9Z, DW16BBZ, DW16BCZ, DW16BYZ, D0000ZZ, D0001ZZ, D0002ZZ, D0010ZZ, D0011ZZ, D0012ZZ, D0060ZZ, D0061ZZ, D0062ZZ, D0070ZZ, D0071ZZ, D0072ZZ, D7000ZZ, D7001ZZ, D7002ZZ, D7010ZZ, D7011ZZ, D7012ZZ, D7020ZZ, D7021ZZ, D7022ZZ, D7030ZZ, D7031ZZ, D7032ZZ, D7040ZZ, D7041ZZ, D7042ZZ, D7050ZZ, D7051ZZ, D7052ZZ, D7060ZZ, D7061ZZ, D7062ZZ, D7070ZZ, D7071ZZ, D7072ZZ, D7080ZZ, D7081ZZ, D7082ZZ, D8000ZZ, D8001ZZ, D8002ZZ, D9000ZZ, D9001ZZ, D9002ZZ, D9010ZZ, D9011ZZ, D9012ZZ, D9030ZZ, D9031ZZ, D9032ZZ, D9040ZZ, D9041ZZ, D9042ZZ, D9050ZZ, D9051ZZ, D9052ZZ, D9060ZZ, D9061ZZ, D9062ZZ, D9070ZZ, D9071ZZ, D9072ZZ, D9080ZZ, D9081ZZ, D9082ZZ, D9090ZZ, D9091ZZ, D9092ZZ, D90B0ZZ, D90B1ZZ, D90B2ZZ, D90D0ZZ, D90D1ZZ, D90D2ZZ, D90F0ZZ, D90F1ZZ, D90F2ZZ, DB000ZZ, DB001ZZ, DB002ZZ, DB010ZZ, DB011ZZ, DB012ZZ, DB020ZZ, DB021ZZ, DB022ZZ, DB050ZZ, DB051ZZ, DB052ZZ, DB060ZZ, DB061ZZ, DB062ZZ, DB070ZZ, DB071ZZ, DB072ZZ, DB080ZZ, DB081ZZ, DB082ZZ, DD000ZZ, DD001ZZ, DD002ZZ, DD010ZZ, DD011ZZ, DD012ZZ, DD020ZZ, DD021ZZ, DD022ZZ, DD030ZZ, DD031ZZ, DD032ZZ, DD040ZZ, DD041ZZ, DD042ZZ, DD050ZZ, DD051ZZ, DD052ZZ, DD070ZZ, DD071ZZ, DD072ZZ, DF000ZZ, DF001ZZ, DF002ZZ, DF010ZZ, DF011ZZ, DF012ZZ, DF020ZZ, DF021ZZ, DF022ZZ, DF030ZZ, DF031ZZ, DF032ZZ, DG000ZZ, DG001ZZ, DG002ZZ, DG010ZZ, DG011ZZ, DG012ZZ, DG020ZZ, DG021ZZ, DG022ZZ, DG040ZZ, DG041ZZ, DG042ZZ, DG050ZZ, DG051ZZ, DG052ZZ, DH020ZZ, DH021ZZ, DH022ZZ, DH030ZZ, DH031ZZ, DH032ZZ, DH040ZZ, DH041ZZ, DH042ZZ, DH060ZZ, DH061ZZ, DH062ZZ, DH070ZZ, DH071ZZ, DH072ZZ, DH080ZZ, DH081ZZ, DH082ZZ, DH090ZZ, DH091ZZ, DH092ZZ, DH0B0ZZ, DH0B1ZZ, DH0B2ZZ, DM000ZZ, DM001ZZ, DM002ZZ, DM010ZZ, DM011ZZ, DM012ZZ, DP000ZZ, DP001ZZ, DP002ZZ, DP020ZZ, DP021ZZ, DP022ZZ, DP030ZZ, DP031ZZ, DP032ZZ, DP040ZZ, DP041ZZ, DP042ZZ, DP050ZZ, DP051ZZ, DP052ZZ, DP060ZZ, DP061ZZ, DP062ZZ, DP070ZZ, DP071ZZ, DP072ZZ, DP080ZZ, DP081ZZ, DP082ZZ, DP090ZZ, DP091ZZ, DP092ZZ, DP0B0ZZ, DP0B1ZZ, DP0B2ZZ, DPOC0ZZ, DPOC1ZZ, DPOC2ZZ, DT000ZZ, DT001ZZ, DT002ZZ, DT010ZZ, DT011ZZ, DT012ZZ, DT020ZZ, DT021ZZ, DT022ZZ, DT030ZZ, DT031ZZ, DT032ZZ, DU000ZZ, DU001ZZ, DU002ZZ, DU010ZZ, DU011ZZ, DU012ZZ, DU020ZZ, DU021ZZ, DU022ZZ, DV000ZZ, DV001ZZ, DV002ZZ, DV010ZZ, DV011ZZ, DV012ZZ, DW010ZZ, DW011ZZ, DW012ZZ, DW020ZZ, DW021ZZ, DW022ZZ, DW030ZZ, DW031ZZ, DW032ZZ, DW040ZZ, DW041ZZ, DW042ZZ, DW050ZZ, DW051ZZ, DW052ZZ, DW060ZZ, DW061ZZ, DW062ZZ, D0003ZZ, D0013ZZ, D0063ZZ, D0073ZZ, D7003ZZ, D7013ZZ, D7023ZZ, D7033ZZ, D7043ZZ, D7053ZZ, D7063ZZ, D7073ZZ, D7083ZZ, D8003ZZ, D9003ZZ, D9013ZZ, D9033ZZ, D9043ZZ, D9053ZZ, D9063ZZ, D9073ZZ, D9083ZZ, D9093ZZ, D90B3ZZ, D90D3ZZ, D90F3ZZ, DB003ZZ, DB013ZZ, DB023ZZ, DB053ZZ, DB063ZZ, DB073ZZ, DB083ZZ, DD003ZZ, DD013ZZ, DD023ZZ, DD033ZZ, DD043ZZ, DD053ZZ, DD073ZZ, DF003ZZ, DF013ZZ, DF023ZZ, DF033ZZ, DG003ZZ, DG013ZZ, DG023ZZ, DG043ZZ, DG053ZZ, DH023ZZ, DH033ZZ, DH043ZZ, DH063ZZ, DH073ZZ, DH083ZZ, DH093ZZ, DH0B3ZZ, DM003ZZ, DM013ZZ, DP003ZZ, DP023ZZ, DP033ZZ, DP043ZZ, DP053ZZ, DP063ZZ, DP073ZZ, DP083ZZ, DP093ZZ, DP0B3ZZ, DPOC3ZZ, DT003ZZ, DT013ZZ, DT023ZZ, DT033ZZ, DU003ZZ, DU013ZZ, DU023ZZ, DV003ZZ, DV013ZZ, DW013ZZ, DW023ZZ, DW033ZZ, DW043ZZ, DW053ZZ, DW063ZZ, D0004ZZ, D0005ZZ, D0014ZZ, D0015ZZ, D0064ZZ, D0065ZZ, D0074ZZ, D0075ZZ, D7004ZZ, D7005ZZ, D7014ZZ, D7015ZZ, D7024ZZ, D7025ZZ, D7034ZZ, D7035ZZ,
--

D7044ZZ, D7045ZZ, D7054ZZ, D7055ZZ, D7064ZZ, D7065ZZ, D7074ZZ, D7075ZZ, D7084ZZ, D7085ZZ, D8004ZZ, D8005ZZ, D9004ZZ, D9005ZZ, D9014ZZ, D9015ZZ, D9034ZZ, D9035ZZ, D9044ZZ, D9045ZZ, D9054ZZ, D9055ZZ, D9064ZZ, D9065ZZ, D9074ZZ, D9075ZZ, D9084ZZ, D9085ZZ, D9094ZZ, D9095ZZ, D90B4ZZ, D90B5ZZ, D90D4ZZ, D90D5ZZ, D90F4ZZ, D90F5ZZ, DB004ZZ, DB005ZZ, DB014ZZ, DB015ZZ, DB024ZZ, DB025ZZ, DB054ZZ, DB055ZZ, DB064ZZ, DB065ZZ, DB074ZZ, DB075ZZ, DB084ZZ, DB085ZZ, DD004ZZ, DD005ZZ, DD014ZZ, DD015ZZ, DD024ZZ, DD025ZZ, DD034ZZ, DD035ZZ, DD044ZZ, DD045ZZ, DD054ZZ, DD055ZZ, DD074ZZ, DD075ZZ, DF004ZZ, DF005ZZ, DF014ZZ, DF015ZZ, DF024ZZ, DF025ZZ, DF034ZZ, DF035ZZ, DG005ZZ, DG015ZZ, DG025ZZ, DG045ZZ, DG055ZZ, DH024ZZ, DH025ZZ, DH034ZZ, DH035ZZ, DH044ZZ, DH045ZZ, DH064ZZ, DH065ZZ, DH074ZZ, DH075ZZ, DH084ZZ, DH085ZZ, DH094ZZ, DH095ZZ, DH0B4ZZ, DH0B5ZZ, DM004ZZ, DM005ZZ, DM014ZZ, DM015ZZ, DP004ZZ, DP005ZZ, DP024ZZ, DP025ZZ, DP034ZZ, DP035ZZ, DP044ZZ, DP045ZZ, DP054ZZ, DP055ZZ, DP064ZZ, DP065ZZ, DP074ZZ, DP075ZZ, DP084ZZ, DP085ZZ, DP094ZZ, DP095ZZ, DP0B4ZZ, DP0B5ZZ, DP0C4ZZ, DP0C5ZZ, DT004ZZ, DT005ZZ, DT014ZZ, DT015ZZ, DT024ZZ, DT025ZZ, DT034ZZ, DT035ZZ, DU004ZZ, DU005ZZ, DU014ZZ, DU015ZZ, DU024ZZ, DU025ZZ, DV004ZZ, DV005ZZ, DV014ZZ, DV015ZZ, DW014ZZ, DW015ZZ, DW024ZZ, DW025ZZ, DW034ZZ, DW035ZZ, DW044ZZ, DW045ZZ, DW054ZZ, DW055ZZ, DW064ZZ, DW065ZZ, 08H031Z, 08H0X1Z, 08H131Z, 08H1X1Z, 0BH001Z, 0BH031Z, 0BH041Z, 0BH071Z, 0BH081Z, 0BHK01Z, 0BHK31Z, 0BHK41Z, 0BHK71Z, 0BHK81Z, 0BHL01Z, 0BHL31Z, 0BHL41Z, 0BHL71Z, 0BHL81Z, 0CH701Z, 0CH731Z, 0CH7X1Z, 0DH501Z, 0DH531Z, 0DH541Z, 0DH571Z, 0DH581Z, 0DHP01Z, 0DHP31Z, 0DHP41Z, 0DHP71Z, 0DHP81Z, 0FHB01Z, 0FHB31Z, 0FHB41Z, 0FHB71Z, 0FHB81Z, 0FHD01Z, 0FHD31Z, 0FHD41Z, 0FHD71Z, 0FHD81Z, 0HHT01Z, 0HHT31Z, 0HHT71Z, 0HHT81Z, 0HHTX1Z, 0HHU01Z, 0HHU31Z, 0HHU71Z, 0HHU81Z, 0HHUX1Z, 0HHV01Z, 0HHV31Z, 0HHV71Z, 0HHV81Z, 0HHVX1Z, 0HHW01Z, 0HHW31Z, 0HHW71Z, 0HHW81Z, 0HHWX1Z, 0HHX01Z, 0HHX31Z, 0HHX71Z, 0HHX81Z, 0HHXX1Z, 0JHS01Z, 0JHS31Z, 0JHT01Z, 0JHT31Z, 0JHV01Z, 0JHV31Z, 0JHW01Z, 0JHW31Z, 0UHC01Z, 0UHC31Z, 0UHC41Z, 0UHC71Z, 0UHC81Z, 0UHG01Z, 0UHG31Z, 0UHG41Z, 0UHG71Z, 0UHG81Z, 0UHGX1Z, 0VH001Z, 0VH031Z, 0VH041Z, 0VH071Z, 0VH081Z, 0WH001Z, 0WH031Z, 0WH041Z, 0WH101Z, 0WH131Z, 0WH141Z, 0WH201Z, 0WH231Z, 0WH241Z, 0WH301Z, 0WH331Z, 0WH341Z, 0WH401Z, 0WH431Z, 0WH441Z, 0WH501Z, 0WH531Z, 0WH541Z, 0WH601Z, 0WH631Z, 0WH641Z, 0WH801Z, 0WH831Z, 0WH841Z, 0WH901Z, 0WH931Z, 0WH941Z, 0WHB01Z, 0WHB31Z, 0WHB41Z, 0WHC01Z, 0WHC31Z, 0WHC41Z, 0WHD01Z, 0WHD31Z, 0WHD41Z, 0WHF01Z, 0WHF31Z, 0WHF41Z, 0WHG01Z, 0WHG31Z, 0WHG41Z, 0WHH01Z, 0WHH31Z, 0WHH41Z, 0WHJ01Z, 0WHJ31Z, 0WHJ41Z, 0WHK01Z, 0WHK31Z, 0WHK41Z, 0WHL01Z, 0WHL31Z, 0WHL41Z, 0WHM01Z, 0WHM31Z, 0WHM41Z, 0WHN01Z, 0WHN31Z, 0WHN41Z, 0WHP01Z, 0WHP31Z, 0WHP41Z, 0WHP71Z, 0WHP81Z, 0WHQ01Z, 0WHQ31Z, 0WHQ41Z, 0WHQ71Z, 0WHQ81Z, 0WHR01Z, 0WHR31Z, 0WHR41Z, 0WHR71Z, 0WHR81Z, 0XH201Z, 0XH231Z, 0XH241Z, 0XH301Z, 0XH331Z, 0XH341Z, 0XH401Z, 0XH431Z, 0XH441Z, 0XH501Z, 0XH531Z, 0XH541Z, 0XH601Z, 0XH631Z, 0XH641Z, 0XH701Z, 0XH731Z, 0XH741Z, 0XH801Z, 0XH831Z, 0XH841Z, 0XH901Z, 0XH931Z, 0XH941Z, 0XHB01Z, 0XHB31Z, 0XHB41Z, 0XHC01Z, 0XHC31Z, 0XHC41Z, 0XHD01Z, 0XHD31Z, 0XHD41Z, 0XHF01Z, 0XHF31Z, 0XHF41Z, 0XHG01Z, 0XHG31Z, 0XHG41Z, 0XHH01Z, 0XHH31Z, 0XHH41Z, 0XHJ01Z, 0XHJ31Z, 0XHJ41Z, 0XHK01Z, 0XHK31Z, 0XHK41Z, 0YH001Z, 0YH031Z, 0YH041Z, 0YH101Z, 0YH131Z, 0YH141Z, 0YH501Z, 0YH531Z, 0YH541Z, 0YH601Z, 0YH631Z, 0YH641Z, 0YH701Z, 0YH731Z, 0YH741Z, 0YH801Z, 0YH831Z, 0YH841Z, 0YH901Z, 0YH931Z, 0YH941Z, 0YHB01Z, 0YHB31Z, 0YHB41Z, 0YHC01Z, 0YHC31Z, 0YHC41Z, 0YHD01Z, 0YHD31Z, 0YHD41Z, 0YHF01Z, 0YHF31Z, 0YHF41Z, 0YHG01Z, 0YHG31Z, 0YHG41Z, 0YHH01Z, 0YHH31Z, 0YHH41Z, 0YHJ01Z, 0YHJ31Z, 0YHJ41Z, 0YHK01Z, 0YHK31Z, 0YHK41Z, 0YHL01Z, 0YHL31Z, 0YHL41Z, 0YHM01Z, 0YHM31Z, 0YHM41Z, 0YHN01Z, 0YHN31Z, 0YHN41Z, CW70NZZ, CW70YZZ, CW73NZZ, CW73YZZ, CW7GGZZ, CW7GYZZ, CW7N8ZZ, CW7NGZZ, CW7NNZZ, CW7NPZZ, CW7NYZZ, CW7YYZZ, DWY5GDZ, DWY5GFZ, DWY5GGZ, DWY5GHZ, DWY5GYZ, D0Y0FZZ, D0Y1FZZ, D0Y6FZZ, D0Y7FZZ, D7Y0FZZ, D7Y1FZZ, D7Y2FZZ, D7Y3FZZ, D7Y4FZZ, D7Y5FZZ, D7Y6FZZ, D7Y7FZZ, D7Y8FZZ, D8Y0FZZ, D9Y0FZZ, D9Y1FZZ, D9Y4CZZ, D9Y4FZZ, D9Y5FZZ, D9Y6FZZ, D9Y7FZZ, D9Y8FZZ, D9Y9FZZ, D9YBCZZ, D9YBFZZ, D9YCCZZ, D9YCFZZ, D9YDCZZ, D9YDFZZ, DBY0FZZ, DBY1FZZ, DBY2FZZ, DBY5FZZ, DBY6FZZ, DBY7FZZ, DBY8FZZ, DDY0FZZ, DDY1CZZ, DDY1FZZ, DDY2CZZ, DDY2FZZ, DDY3CZZ, DDY3FZZ, DDY4CZZ, DDY4FZZ, DDY5CZZ,
--

	DDY5FZZ, DDY7CZZ, DDY7FZZ, DDY8CZZ, DDY8FZZ, DFY0CZZ, DFY0FZZ, DFY1CZZ, DFY1FZZ, DFY2CZZ, DFY2FZZ, DFY3CZZ, DFY3FZZ, DGY0FZZ, DGY1FZZ, DGY2FZZ, DGY4FZZ, DGY5FZZ, DHY2FZZ, DHY3FZZ, DHY4FZZ, DHY5FZZ, DHY6FZZ, DHY7FZZ, DHY8FZZ, DHY9FZZ, DHYBFZZ, DHYCFZZ, DMY0FZZ, DMY1FZZ, DPY0FZZ, DPY2FZZ, DPY3FZZ, DPY4FZZ, DPY5FZZ, DPY6FZZ, DPY7FZZ, DPY8FZZ, DPY9FZZ, DPYBFZZ, DPYCFZZ, DTY0CZZ, DTY0FZZ, DTY1CZZ, DTY1FZZ, DTY2CZZ, DTY2FZZ, DTY3CZZ, DTY3FZZ, DUY0CZZ, DUY0FZZ, DUY1CZZ, DUY1FZZ, DUY2CZZ, DUY2FZZ, DVY0CZZ, DVY0FZZ, DVY1FZZ, DWY1FZZ, DWY2FZZ, DWY3FZZ, DWY4FZZ, DWY5FZZ, DWY6FZZ, D0003Z0, D0013Z0, D0063Z0, D0073Z0, D7003Z0, D7013Z0, D7023Z0, D7033Z0, D7043Z0, D7053Z0, D7063Z0, D7073Z0, D7083Z0, D8003Z0, D9003Z0, D9013Z0, D9033Z0, D9043Z0, D9053Z0, D9063Z0, D9073Z0, D9083Z0, D9093Z0, D90B3Z0, D90D3Z0, D90F3Z0, DB003Z0, DB013Z0, DB023Z0, DB053Z0, DB063Z0, DB073Z0, DB083Z0, DD003Z0, DD013Z0, DD023Z0, DD033Z0, DD043Z0, DD053Z0, DD073Z0, DF003Z0, DF013Z0, DF023Z0, DF033Z0, DG003Z0, DG013Z0, DG023Z0, DG043Z0, DG053Z0, DH023Z0, DH033Z0, DH043Z0, DH063Z0, DH073Z0, DH083Z0, DH093Z0, DH0B3Z0, DM003Z0, DM013Z0, DP003Z0, DP023Z0, DP033Z0, DP043Z0, DP053Z0, DP063Z0, DP073Z0, DP083Z0, DP093Z0, DP0B3Z0, DP0C3Z0, DT003Z0, DT013Z0, DT023Z0, DT033Z0, DU003Z0, DU013Z0, DU023Z0, DV003Z0, DV013Z0, DW013Z0, DW023Z0, DW033Z0, DW043Z0, DW053Z0, DW063Z0,
<b>Revenue Codes</b>	333, 344
<b>HCPCS</b>	A4650, A9606, A9699, C1715 , C1716 , C1717 , C1718 , C1719 , C1720 , C1728 , C2616 , C2633 , C2634 , C2635 , C2636 , C2637 , C2638 , C2639 , C2640 , C2641 , C2642 , C2643 , C2698 , C2699 , C9726, C9728, G0173, G0174, G0242, G0243, G0251, G0338, G0339, G0340, G6003, G6004, G6005, G6006, G6007, G6008, G6009, G6010, G6011, G6012, G6013, G6014, G6015, G6016, Q3001 , S2270, S8049, C1325, C1348, C1350, C1700 , C1701, C1702, C1703, C1704, C1705, C1706, C1707, C1708, C1709, C1710, C1711, C1712, C1790 , C1791, C1792, C1793, C1794, C1795, C1796, C1797, C1798, C1799, C1800, C1801, C1802, C1803, C1804, C1805, C1806, C2632, C9714, C9715, G0178, G0256, G0273, G0274, G0338, G0339, G0340, G0458, C2644, C2645

**TABLE 6: FACTORS IDENTIFYING PROVOKED VTE**

Factors	Identifying Strategies	
Hormone Therapy		
Estrogen Therapy	Estradiol Cypionate	J1000,
	Estradiol Valerate	J1380
	Estradiol	N/A
	Ethinyl Estradiol	N/A
	Estradiol Benzoate	N/A
	Estradiol Acetate	N/A
	Estradiol Micronized	N/A
	Estrone	J1435
	Estrogens, Conjugated/Meproban	N/A
	Estrogens, Conjugated	J1410
	Estriol	N/A
	Chlorotrianisene	N/A
	Quinestrol	N/A
	Dienestrol	N/A
	Estrogens, Esterified	N/A
	Estropipate	N/A
	Estrogens, Conj., Synthetic A	N/A
	Estrogens, Conj., Synthetic B	N/A
Estriol Micronized	N/A	
Combination E+P	Ethinyl Estradiol/Noreth Ac	N/A
	Norethind Ac/Ethinyl Estradiol	N/A
	Estradiol/Noreth Ac	N/A
	Estradiol/Norgestimate	N/A
	Estradiol/Levonorgestrel	N/A
	Estradiol/Drospirenone	N/A
	Estrogen, Con/M-Progest Acet	N/A
Fracture/Trauma involving the Lower Extremities	Refer to Table 7	
Pelvic or orthopedic surgery	Refer to Table 7	
Any hospitalization	Refer to Table 7	

**TABLE 7: BASELINE COVARIATES**

Condition	ICD-9 Code(s)	ICD-10 Code(s)
AIDS	042, V08	B20, Z21
Alcohol abuse	<p>ICD-9 Diagnosis: 291, 303, 305.0, 357.5, 425.5, 535.3, 571.0, 571.1, 571.2, 571.3, 790.3, E860.0, E860.1</p> <p>ICD-9 procedure: 94.46, 94.53, 94.61-94.63, 94.67-94.69</p> <p>CPT: 99408, 99409, G0396, G0397, H0049, H0050</p>	<p>ICD-10 Diagnosis: G621, I426, K700, K702, K709, R780, E8600, E8601, F1026, F1096, F1097, F1027, F1014, F1024, F1019, F1029, F1094, F1099, F1020, F1021, F1010, K2920, K2921, K7010, K7011, K7030, K7031, K7040, F10121, F10221, F10231, F10921, F10151, F10251, F10951, F10920, F10929, F10150, F10250, F10950, F10230, F10232, F10239, F10182, F10282, F10982, F10159, F10180, F10181, F10188, F10259, F10280, F10281, F10288, F10959, F10980, F10981, F10988, F10220, F10229, F10120, F10129</p> <p>ICD-10 Procedure: HZ2ZZZZ, HZ30ZZZ, HZ31ZZZ, HZ32ZZZ, HZ33ZZZ, HZ34ZZZ, HZ35ZZZ, HZ36ZZZ, HZ37ZZZ, HZ38ZZZ, HZ39ZZZ, HZ3BZZZ, HZ40ZZZ, HZ41ZZZ, HZ42ZZZ, HZ43ZZZ, HZ44ZZZ, HZ45ZZZ, HZ46ZZZ, HZ47ZZZ, HZ48ZZZ, HZ49ZZZ, HZ4BZZZ, HZ50ZZZ, HZ51ZZZ, HZ52ZZZ, HZ53ZZZ, HZ54ZZZ, HZ55ZZZ, HZ56ZZZ, HZ57ZZZ, HZ58ZZZ, HZ59ZZZ, HZ5BZZZ, HZ5CZZZ, HZ5DZZZ, HZ63ZZZ, HZ83ZZZ, HZ86ZZZ, HZ88ZZZ, HZ89ZZZ, HZ93ZZZ, HZ96ZZZ, HZ98ZZZ, HZ99ZZZ</p>
Anemia	280.x-285.x	D500, D508, D501, D509, D510, D511, D512, D513, D518, D519, D520, D521, D528, D529, D531, D530, D532, D538, D539, D580, D581, D550, D551, D552, D553, D558, D559, D569, D560, D561, D562, D563, D565, D568, D573, D571, D564, D582, D588, D589, D590, D591, D594, D593, D592, D595, D596, D598, D599, D600, D601, D608, D609, D611, D612, D613, D619, D640, D641, D642, D643, D631, D630, D638, D644, D649, D5702, D5701, D5740, D5700, D5720, D5780, D6101, D6109, D6182, D6189, D6481, D6489, D57212, D57412, D57211, D57411, D57811, D57812, D57419, D57219, D57819, D61810, D61811, D61818
Central venous catheter	<p>ICD-9 diagnosis: 999.31, 999.32, 999.33</p> <p>ICD-9 procedure: 38.93, 38.95, 38.97, 89.62</p> <p>CPT: 36555-36569, S5520, S5522</p>	<p>ICD-10 diagnosis: T80218A, T80219A, T80211A, T80212A</p> <p>ICD-10 procedure: 02HS03Z, 02HS33Z, 02HS43Z, 02HT03Z, 02HT33Z, 02HT43Z, 02HV03Z, 02HV33Z, 02HV43Z, 05H003Z, 05H033Z, 05H043Z, 05H103Z, 05H133Z, 05H143Z, 05H303Z, 05H333Z, 05H343Z, 05H403Z, 05H433Z, 05H443Z, 05H503Z, 05H533Z, 05H543Z, 05H603Z, 05H633Z, 05H643Z, 05H703Z, 05H733Z, 05H743Z, 05H803Z, 05H833Z, 05H843Z, 05H903Z,</p>

Condition	ICD-9 Code(s)	ICD-10 Code(s)
		05H933Z, 05H943Z, 05HA03Z, 05HA33Z, 05HA43Z, 05HB03Z, 05HB33Z, 05HB43Z, 05HC03Z, 05HC33Z, 05HC43Z, 05HD03Z, 05HD33Z, 05HD43Z, 05HF03Z, 05HF33Z, 05HF43Z, 05HG03Z, 05HG33Z, 05HG43Z, 05HH03Z, 05HH33Z, 05HH43Z, 05HL03Z, 05HL33Z, 05HL43Z, 05HM03Z, 05HM33Z, 05HM43Z, 05HN03Z, 05HN33Z, 05HN43Z, 05HP03Z, 05HP33Z, 05HP43Z, 05HQ03Z, 05HQ33Z, 05HQ43Z, 05HR03Z, 05HR33Z, 05HR43Z, 05HS03Z, 05HS33Z, 05HS43Z, 05HT03Z, 05HT33Z, 05HT43Z, 05HV03Z, 05HV33Z, 05HV43Z, 05HY03Z, 05HY33Z, 05HY43Z, 06H003Z, 06H033Z, 06H043Z, 06H103Z, 06H133Z, 06H143Z, 06H203Z, 06H233Z, 06H243Z, 06H303Z, 06H333Z, 06H343Z, 06H403Z, 06H433Z, 06H443Z, 06H503Z, 06H533Z, 06H543Z, 06H603Z, 06H633Z, 06H643Z, 06H703Z, 06H733Z, 06H743Z, 06H803Z, 06H833Z, 06H843Z, 06H903Z, 06H933Z, 06H943Z, 06HB03Z, 06HB33Z, 06HB43Z, 06HC03Z, 06HC33Z, 06HC43Z, 06HD03Z, 06HD33Z, 06HD43Z, 06HF03Z, 06HF33Z, 06HF43Z, 06HG03Z, 06HG33Z, 06HG43Z, 06HH03Z, 06HH33Z, 06HH43Z, 06HJ03Z, 06HJ33Z, 06HJ43Z, 06HM03Z, 06HM33Z, 06HM43Z, 06HN03Z, 06HN33Z, 06HN43Z, 06HP03Z, 06HP33Z, 06HP43Z, 06HQ03Z, 06HQ33Z, 06HQ43Z, 06HT03Z, 06HT33Z, 06HT43Z, 06HV03Z, 06HV33Z, 06HV43Z, 06HY03Z, 06HY33Z, 06HY43Z, 0JH60XZ, 0JH63XZ, 0JH80XZ, 0JH83XZ, 0JHD0XZ, 0JHD3XZ, 0JHF0XZ, 0JHF3XZ, 0JHG0XZ, 0JHG3XZ, 0JHH0XZ, 0JHH3XZ, 0JHL0XZ, 0JHL3XZ, 0JHM0XZ, 0JHM3XZ, 0JHN0XZ, 0JHN3XZ, 0JHP0XZ, 0JHP3XZ, 4A02X4A, 4A04XB1, 4A14XB1, B5130ZA, B5131ZA, B513YZA, B513ZZA, B5140ZA, B5141ZA, B514YZA, B514ZZA, B5150ZA, B5151ZA, B515YZA, B515ZZA, B5160ZA, B5161ZA, B516YZA, B516ZZA, B5170ZA, B5171ZA, B517YZA, B517ZZA, B51B0ZA, B51B1ZA, B51BYZA, B51BZZA, B51C0ZA, B51C1ZA, B51CYZA, B51CZZA, B51D0ZA, B51D1ZA, B51DYZA, B51DZZA, B543ZZA, B544ZZA, B546ZZA, B547ZZA, B54BZZA, B54CZZA, B54DZZA
Cerebrovascular disease	ICD-9 Diagnosis: 430, 431, 432.x, 433.xx, 434.xx, 435.x, 436, 437.0, 437.1, 437.8, 437.9, 438.xx, 997.02  CPT: 35390, 37215, 37216 ICD-9 procedure: 38.11, 38.12,	I602, I604, I606, I607, I608, I609, I610, I611, I612, I613, I614, I615, I616, I618, I619, I621, I629, I651, I658, I659, I663, I636, I669, I668, I638, I639, G450, G458, G451, G452, G460, G461, G462, G459, I672, G463, G464, G465, G466, G467, G468, I680, I688, I679, I6000,

Condition	ICD-9 Code(s)	ICD-10 Code(s)
	38.42	I6001, I6002, I6010, I6011, I6012, I6030, I6031, I6032, I6050, I6051, I6052, I6200, I6201, I6202, I6203, I6302, I6312, I6322, I6521, I6522, I6523, I6529, I6501, I6502, I6503, I6509, I6359, I6309, I6319, I6300, I6310, I6320, I6329, I6601, I6602, I6603, I6609, I6611, I6612, I6613, I6619, I6621, I6622, I6623, I6629, I6330, I6339, I6340, I6349, I6350, I6789, I6781, I6782, I6901, I6911, I6921, I6931, I6981, I6991, I6900, I6910, I6920, I6930, I6980, I6990, I63031, I63032, I63039, I63131, I63132, I63139, I63231, I63232, I63239, I63011, I63012, I63019, I63111, I63112, I63119, I63211, I63212, I63219, I63311, I63312, I63319, I63321, I63322, I63329, I63331, I63332, I63339, I63341, I63342, I63349, I63411, I63412, I63419, I63421, I63422, I63429, I63431, I63432, I63439, I63441, I63442, I63449, I63511, I63512, I63519, I63521, I63522, I63529, I63531, I63532, I63539, I63541, I63542, I63549, I67841, I67848, I69928, I69020, I69120, I69220, I69320, I69820, I69920, I69021, I69121, I69221, I69321, I69821, I69921, I69022, I69122, I69222, I69322, I69822, I69922, I69023, I69123, I69223, I69323, I69823, I69923, I69028, I69128, I69228, I69328, I69828, I69059, I69159, I69259, I69359, I69859, I69959, I69051, I69052, I69151, I69152, I69251, I69252, I69351, I69352, I69851, I69852, I69951, I69952, I69053, I69054, I69153, I69154, I69253, I69254, I69353, I69354, I69853, I69854, I69953, I69954, I69039, I69139, I69239, I69339, I69839, I69939, I69031, I69032, I69131, I69132, I69231, I69232, I69331, I69332, I69831, I69832, I69931, I69932, I69033, I69034, I69133, I69134, I69233, I69234, I69333, I69334, I69833, I69834, I69933, I69934, I69049, I69149, I69249, I69349, I69849, I69949, I69041, I69042, I69141, I69142, I69241, I69242, I69341, I69342, I69841, I69842, I69941, I69942, I69043, I69044, I69143, I69144, I69243, I69244, I69343, I69344, I69843, I69844, I69943, I69944, I69069, I69169, I69269, I69369, I69869, I69969, I69061, I69062, I69161, I69162, I69261, I69262, I69361, I69362, I69861, I69862, I69961, I69962, I69063, I69064, I69163, I69164, I69263, I69264, I69363, I69364, I69863, I69864, I69963, I69964, I69065, I69165, I69265, I69365, I69865, I69965, I69998, I69090, I69190, I69290, I69390, I69890, I69990,

Condition	ICD-9 Code(s)	ICD-10 Code(s)
		I69091, I69191, I69291, I69391, I69891, I69991, I69092, I69192, I69292, I69392, I69892, I69992, I69093, I69193, I69293, I69393, I69893, I69993, I69098, I69198, I69298, I69398, I69898, G9731, G9732, I97810, I97811, I97820, I9782  <b>ICD-10-Procedure codes:</b> 03CG0ZZ, 03CG4ZZ, 03CH0ZZ, 03CH4ZZ, 03CJ0ZZ, 03CJ4ZZ, 03CK0ZZ, 03CK4ZZ, 03CL0ZZ, 03CL4ZZ, 03CM0ZZ, 03CM4ZZ, 03CN0ZZ, 03CN4ZZ, 03CP0ZZ, 03CP4ZZ, 03CQ0ZZ, 03CQ4ZZ, 03CR0ZZ, 03CR3ZZ, 03CR4ZZ, 03CS0ZZ, 03CS3ZZ, 03CS4ZZ, 03CT0ZZ, 03CT3ZZ, 03CT4ZZ, 03CU0ZZ, 03CU3ZZ, 03CU4ZZ, 03CV0ZZ, 03CV3ZZ, 03CV4ZZ, 03RH07Z, 03RH0JZ, 03RH0KZ, 03RH47Z, 03RH4JZ, 03RH4KZ, 03RJ07Z, 03RJ0JZ, 03RJ0KZ, 03RJ47Z, 03RJ4JZ, 03RJ4KZ, 03RK07Z, 03RK0JZ, 03RK0KZ, 03RK47Z, 03RK4JZ, 03RK4KZ, 03RL07Z, 03RL0JZ, 03RL0KZ, 03RL47Z, 03RL4JZ, 03RL4KZ, 03RM07Z, 03RM0JZ, 03RM0KZ, 03RM47Z, 03RM4JZ, 03RM4KZ, 03RN07Z, 03RN0JZ, 03RN0KZ, 03RN47Z, 03RN4JZ, 03RN4KZ, 03RP07Z, 03RP0JZ, 03RP0KZ, 03RP47Z, 03RP4JZ, 03RP4KZ, 03RQ07Z, 03RQ0JZ, 03RQ0KZ, 03RQ47Z, 03RQ4JZ, 03RQ4KZ, 03RR07Z, 03RR0JZ, 03RR0KZ, 03RR47Z, 03RR4JZ, 03RR4KZ, 03RS07Z, 03RS0JZ, 03RS0KZ, 03RS47Z, 03RS4JZ, 03RS4KZ, 03RT07Z, 03RT0JZ, 03RT0KZ, 03RT47Z, 03RT4JZ, 03RT4KZ, 03RU07Z, 03RU0JZ, 03RU0KZ, 03RU47Z, 03RU4JZ, 03RU4KZ, 03RV07Z, 03RV0JZ, 03RV0KZ, 03RV47Z, 03RV4JZ, 03RV4KZ, 05RM07Z, 05RM0JZ, 05RM0KZ, 05RM47Z, 05RM4JZ, 05RM4KZ, 05RN07Z, 05RN0JZ, 05RN0KZ, 05RN47Z, 05RN4JZ, 05RN4KZ, 05RP07Z, 05RP0JZ, 05RP0KZ, 05RP47Z, 05RP4JZ, 05RP4KZ, 05RQ07Z, 05RQ0JZ, 05RQ0KZ, 05RQ47Z, 05RQ4JZ, 05RQ4KZ, 05RR07Z, 05RR0JZ, 05RR0KZ, 05RR47Z, 05RR4JZ, 05RR4KZ, 05RS07Z, 05RS0JZ, 05RS0KZ, 05RS47Z, 05RS4JZ, 05RS4KZ, 05RT07Z, 05RT0JZ, 05RT0KZ, 05RT47Z, 05RT4JZ, 05RT4KZ, 05RV07Z, 05RV0JZ, 05RV0KZ, 05RV47Z, 05RV4JZ, 05RV4KZ
Coagulopathy	286.6, 286.7, 286.9	D65, D6832, D684, D688, D689
Ischemic Heart Disease/ Coronary Artery	ICD-9 Diagnosis: 410.xx, 411.0, 412, 429.71, 429.79, 413.x, 411.1, 411.8x, 414.0x, 414.8, 414.9	<b>ICD-10 Diagnosis:</b> I220, I221, I228, I214, I222, I213, I229, I241, I200, I240, I248, I249, I252, I208, I201, I209, I255, I256, I259, I231, I232, I510, I230, I233, I236, I237, I238, I513, I2109,

Condition	ICD-9 Code(s)	ICD-10 Code(s)
	CPT: 33508, 33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33522, 33523, 33530, 33533, 33534, 33535, 33536, 33572, 34001, 35301, 35501, 35506, 35507, 35508, 35509, 35510, 35515, 35601, 35606, 35691, 35693, 35694, 35695, 92973, 92974, 92975, 92977, 92978, 92979, 92980, 92981, 92982, 92984  ICD-9 procedure: 00.66, 17.55, 36.01, 36.02, 36.03, 36.04, 36.05, 36.06, 36.07, 36.09, 36.1, 36.10, 36.11, 36.12, 36.13, 36.14, 36.15, 36.16, 36.17, 36.19, 36.2, 36.31, 36.32, 36.33, 36.34, 36.39, 36.91, 36.99, 00.50, 00.51, 00.52, 00.53, 00.54, 37.90, 37.91, 37.92, 37.93, 37.94, 37.95, 37.96, 37.97, 37.98, 37.99	I2101, I2102, I2119, I2111, I2129, I2121, I2510, I2589, I25110, I25111, I25118, I25119, I25700, I25701, I25708, I25709, I25710, I25711, I25718, I25719, I25720, I25721, I25728, I25729, I25730, I25731, I25738, I25739, I25750, I25751, I25758, I25759, I25760, I25761, I25768, I25769, I25790, I25791, I25798, I25799, I25810, I25811, I25812  <b>ICD-10 Procedure:</b> 0210093, 0210093, 0210098, 0210098, 0210099, 0210099, 021009C, 021009F, 021009W, 02100A3, 02100A8, 02100A9, 02100AC, 02100AF, 02100AW, 02100J3, 02100J8, 02100J9, 02100JC, 02100JF, 02100JW, 02100K3, 02100K8, 02100K9, 02100KC, 02100KF, 02100KW, 02100Z3, 02100Z8, 02100Z9, 02100ZC, 02100ZF, 0210344, 0210344, 02103D4, 0210444, 0210444, 0210493, 0210493, 0210498, 0210498, 0210499, 0210499, 021049C, 021049F, 021049W, 02104A3, 02104A8, 02104A9, 02104AC, 02104AF, 02104AW, 02104D4, 02104J3, 02104J8, 02104J9, 02104JC, 02104JF, 02104JW, 02104K3, 02104K8, 02104K9, 02104KC, 02104KF, 02104KW, 02104Z3, 02104Z8, 02104Z9, 02104ZC, 02104ZF, 0211093, 0211098, 0211098, 0211099, 0211099, 021109C, 021109F, 021109W, 02110A3, 02110A8, 02110A9, 02110AC, 02110AF, 02110AW, 02110J3, 02110J8, 02110J9, 02110JC, 02110JF, 02110JW, 02110K3, 02110K8, 02110K9, 02110KC, 02110KF, 02110KW, 02110Z3, 02110Z8, 02110Z9, 02110ZC, 02110ZF, 0211344, 0211344, 02113D4, 0211444, 0211444, 0211493, 0211498, 0211498, 0211499, 0211499, 021149C, 021149F, 021149W, 02114A3, 02114A8, 02114A9, 02114AC, 02114AF, 02114AW, 02114D4, 02114J3, 02114J8, 02114J9, 02114JC, 02114JF, 02114JW, 02114K3, 02114K8, 02114K9, 02114KC, 02114KF, 02114KW, 02114Z3, 02114Z8, 02114Z9, 02114ZC, 02114ZF, 0212093, 0212098, 0212099, 021209C, 021209F, 021209W, 02120A3, 02120A8, 02120A9, 02120AC, 02120AF, 02120AW, 02120J3, 02120J8, 02120J9, 02120JC, 02120JF, 02120JW, 02120K3, 02120K8, 02120K9, 02120KC, 02120KF, 02120KW, 02120Z3, 02120Z8, 02120Z9, 02120ZC, 02120ZF, 0212344, 0212344, 02123D4, 0212444, 0212444, 0212493, 0212498, 0212499,

Condition	ICD-9 Code(s)	ICD-10 Code(s)			
		021249C,	021249F,	021249W,	02124A3,
		02124A8,	02124A9,	02124AC,	02124AF,
		02124AW,	02124D4,	02124J3,	02124J8,
		02124J9,	02124JC,	02124JF,	02124JW,
		02124K3,	02124K8,	02124K9,	02124KC,
		02124KF,	02124KW,	02124Z3,	02124Z8,
		02124Z9,	02124ZC,	02124ZF,	0213093,
		0213098,	0213099,	021309C,	021309F,
		021309W,	02130A3,	02130A8,	02130A9,
		02130AC,	02130AF,	02130AW,	02130J3,
		02130J8,	02130J9,	02130JC,	02130JF,
		02130JW,	02130K3,	02130K8,	02130K9,
		02130KC,	02130KF,	02130KW,	02130Z3,
		02130Z8,	02130Z9,	02130ZC,	02130ZF,
		0213344,	0213344,	02133D4,	0213444,
		0213444,	0213493,	0213498,	0213499,
		021349C,	021349F,	021349W,	02134A3,
		02134A8,	02134A9,	02134AC,	02134AF,
		02134AW,	02134D4,	02134J3,	02134J8,
		02134J9,	02134JC,	02134JF,	02134JW,
		02134K3,	02134K8,	02134K9,	02134KC,
		02134KF,	02134KW,	02134Z3,	02134Z8,
		02134Z9,	02134ZC,	02134ZF,	021K0Z5,
		021K0Z8,	021K0Z9,	021K0ZC,	021K0ZF,
		021K0ZW,	021K4Z5,	021K4Z8,	021K4Z9,
		021K4ZC,	021K4ZF,	021K4ZW,	021L09P,
		021L09Q,	021L09R,	021L0AP,	021L0AQ,
		021L0AR,	021L0JP,	021L0JQ,	021L0JR,
		021L0KP,	021L0KQ,	021L0KR,	021L0Z5,
		021L0Z8,	021L0Z9,	021L0ZC,	021L0ZF,
		021L0ZP,	021L0ZQ,	021L0ZR,	021L49P,
		021L49Q,	021L49R,	021L4AP,	021L4AQ,
		021L4AR,	021L4JP,	021L4JQ,	021L4JR,
		021L4KP,	021L4KQ,	021L4KR,	021L4Z5,
		021L4Z8,	021L4Z9,	021L4ZC,	021L4ZF,
		021L4ZP,	021L4ZQ,	021L4ZR,	02540ZZ,
		02543ZZ,	02544ZZ,	0270046,	027004Z,
		02700D6,	02700DZ,	02700T6,	02700TZ,
		02700Z6,	02700ZZ,	0270346,	027034Z,
		02703D6,	02703DZ,	02703T6,	02703TZ,
		02703Z6,	02703ZZ,	0270446,	027044Z,
		02704D6,	02704DZ,	02704T6,	02704TZ,
		02704Z6,	02704ZZ,	0271046,	027104Z,
		02710D6,	02710DZ,	02710T6,	02710TZ,
		02710Z6,	02710ZZ,	0271346,	027134Z,
		02713D6,	02713DZ,	02713T6,	02713TZ,
		02713Z6,	02713ZZ,	0271446,	027144Z,
		02714D6,	02714DZ,	02714T6,	02714TZ,
		02714Z6,	02714ZZ,	0272046,	027204Z,
		02720D6,	02720DZ,	02720T6,	02720TZ,
		02720Z6,	02720ZZ,	0272346,	027234Z,
		02723D6,	02723DZ,	02723T6,	02723TZ,
		02723Z6,	02723ZZ,	0272446,	027244Z,

Condition	ICD-9 Code(s)	ICD-10 Code(s)
		02724D6, 02724DZ, 02724T6, 02724TZ, 02724Z6, 02724ZZ, 0273046, 027304Z, 02730D6, 02730DZ, 02730T6, 02730TZ, 02730Z6, 02730ZZ, 0273346, 027334Z, 02733D6, 02733DZ, 02733T6, 02733TZ, 02733Z6, 02733ZZ, 0273446, 027344Z, 02734D6, 02734DZ, 02734T6, 02734TZ, 02734Z6, 02734ZZ, 02880ZZ, 02883ZZ, 02884ZZ, 02B40ZZ, 02B43ZZ, 02B44ZZ, 02C00ZZ, 02C03ZZ, 02C04ZZ, 02C10ZZ, 02C13ZZ, 02C14ZZ, 02C20ZZ, 02C23ZZ, 02C24ZZ, 02C30ZZ, 02C33ZZ, 02C34ZZ, 02C40ZZ, 02C43ZZ, 02C44ZZ, 02H40Z, 02H40Z, 02H40DZ, 02H40JZ, 02H40KZ, 02H43Z, 02H43Z, 02H43DZ, 02H43JZ, 02H43KZ, 02H43MZ, 02H44Z, 02H44Z, 02H44DZ, 02H44JZ, 02H44KZ, 02H60JZ, 02H60KZ, 02H63JZ, 02H63KZ, 02H64JZ, 02H64KZ, 02H70KZ, 02H73KZ, 02H74KZ, 02HK0JZ, 02HK0KZ, 02HK3JZ, 02HK3KZ, 02HK4JZ, 02HK4KZ, 02HL0JZ, 02HL0KZ, 02HL3JZ, 02HL3KZ, 02HL4JZ, 02HL4KZ, 02HN0KZ, 02HN3KZ, 02HN4KZ, 02PA0MZ, 02PA3MZ, 02PA4MZ, 02PAXMZ, 02Q00ZZ, 02Q03ZZ, 02Q04ZZ, 02Q10ZZ, 02Q13ZZ, 02Q14ZZ, 02Q20ZZ, 02Q23ZZ, 02Q24ZZ, 02Q30ZZ, 02Q33ZZ, 02Q34ZZ, 02Q40ZZ, 02Q43ZZ, 02Q44ZZ, 02QA0ZZ, 02QA3ZZ, 02QA4ZZ, 02QB0ZZ, 02QB3ZZ, 02QB4ZZ, 02QC0ZZ, 02QC3ZZ, 02QC4ZZ, 02U73JZ, 02U74JZ, 0JH607Z, 0JH608Z, 0JH609Z, 0JH637Z, 0JH638Z, 0JH639Z, 0JH807Z, 0JH808Z, 0JH809Z, 0JH837Z, 0JH838Z, 0JH839Z, 0JPT0PZ, 0JPT3PZ, 0JWT0PZ, 0JWT3PZ, 3E07017, 3E070GC, 3E070KZ, 3E070PZ, 3E07317, 3E073GC, 3E073KZ, 3E073PZ, 3E080GC, 3E080KZ, 3E083GC, 3E083KZ
Dementia	290-290.9	F0390, F0150, F0151
Dyspepsia	787.1, 789.0, 789.4, 789.6, 536.8	K30, R12, R100, R109, R102, R1011, R1012, R1031, R1032, R1033, R1013, R1084, R1010, R1030, R1930, R1931, R1932, R1933, R1934, R1935, R1936, R1937, R10819, R10829, R10811, R10821, R10812, R10822, R10813, R10823, R10814, R10824, R10815, R10825, R10816, R10826, R10817, R10827
Hemiplegia or Paraplegia	344.1, 342-342.9	G041, G8100, G8101, G8102, G8103, G8104, G8110, G8111, G8112, G8113, G8114, G8190, G8191, G8192, G8193, G8194, G8220, G8221, G8222
Hyperlipidemia	272.2, 272.4	E782, E784, E785
Pneumonia	480.x-486	J13, J14, J17, B250, B440, A221, J120, J121, J122, J123, J129, J181, J150, J151, J154, J153,

Condition	ICD-9 Code(s)	ICD-10 Code(s)
		J158, J155, J156, A481, J159, J157, J160, J168, J180, J188, J189, A3791, B7781, A3701, A3711, A3781, J1281, J1289, J1520, J1529, J15211, J15212
Rheumatologic disease	710.1, 710.1, 710.4, 714.0-714.2, 714.81, 725	M340, M341, M342, M349, M059, M069, M061, M353, M3481, M0540, M0549, M0550, M0559, M3321, M3322, M3482, M3483, M3489, M3320, M3329, M0570, M0579, M0580, M0589, M0600, M0608, M0609, M0620, M0628, M0629, M0630, M0638, M0639, M0680, M0688, M0689, M0500, M0509, M0520, M0529, M0530, M0539, M0560, M0569, M0510, M0519, M05411, M05412, M05419, M05421, M05422, M05429, M05431, M05432, M05439, M05441, M05442, M05449, M05451, M05452, M05459, M05461, M05462, M05469, M05471, M05472, M05479, M05511, M05512, M05519, M05521, M05522, M05529, M05531, M05532, M05539, M05541, M05542, M05549, M05551, M05552, M05559, M05561, M05562, M05569, M05571, M05572, M05579, M05711, M05712, M05719, M05721, M05722, M05729, M05731, M05732, M05739, M05741, M05742, M05749, M05751, M05752, M05759, M05761, M05762, M05769, M05771, M05772, M05779, M05811, M05812, M05819, M05821, M05822, M05829, M05831, M05832, M05839, M05841, M05842, M05849, M05851, M05852, M05859, M05861, M05862, M05869, M05871, M05872, M05879, M06011, M06012, M06019, M06021, M06022, M06029, M06031, M06032, M06039, M06041, M06042, M06049, M06051, M06052, M06059, M06061, M06062, M06069, M06071, M06072, M06079, M06211, M06212, M06219, M06221, M06222, M06229, M06231, M06232, M06239, M06241, M06242, M06249, M06251, M06252, M06259, M06261, M06262, M06269, M06271, M06272, M06279, M06311, M06312, M06319, M06321, M06322, M06329, M06331, M06332, M06339, M06341, M06342, M06349, M06351, M06352, M06359, M06361, M06362, M06369, M06371, M06372, M06379, M06811, M06812, M06819, M06821, M06822, M06829, M06831, M06832, M06839, M06841, M06842, M06849, M06851, M06852, M06859, M06861, M06862, M06869, M06871, M06872, M06879, M05011, M05012, M05019, M05021, M05022, M05029, M05031, M05032, M05039, M05041, M05042, M05049, M05051, M05052, M05059, M05061, M05062, M05069, M05071, M05072, M05079, M05211, M05212, M05219, M05221, M05222, M05229, M05231, M05232, M05239, M05241, M05242, M05249,

Condition	ICD-9 Code(s)	ICD-10 Code(s)
		M05251, M05252, M05259, M05261, M05262, M05269, M05271, M05272, M05279, M05311, M05312, M05319, M05321, M05322, M05329, M05331, M05332, M05339, M05341, M05342, M05349, M05351, M05352, M05359, M05361, M05362, M05369, M05371, M05372, M05379, M05611, M05612, M05619, M05621, M05622, M05629, M05631, M05632, M05639, M05641, M05642, M05649, M05651, M05652, M05659, M05661, M05662, M05669, M05671, M05672, M05679, M05111, M05112, M05119, M05121, M05122, M05129, M05131, M05132, M05139, M05141, M05142, M05149, M05151, M05152, M05159, M05161, M05162, M05169, M05171, M05172, M05179
Sleep apnea	327.23, 780.57 CPT: G8839, G8841, G8900	G4733, G4730
Spinal Cord Injury	952.xx	S14101A, S14102A, S14103A, S14104A, S14111A, S14112A, S14113A, S14114A, S14131A, S14132A, S14133A, S14134A, S14121A, S14122A, S14123A, S14124A, S14151A, S14152A, S14153A, S14154A, S14105A, S14106A, S14107A, S14108A, S14115A, S14116A, S14117A, S14118A, S14135A, S14136A, S14137A, S14138A, S14125A, S14126A, S14127A, S14128A, S14155A, S14156A, S14157A, S14158A, S24101A, S24102A, S24111A, S24112A, S24131A, S24132A, S24151A, S24152A, S24103A, S24104A, S24113A, S24114A, S24133A, S24134A, S24153A, S24154A, S34109A, S34139A, S343XXA, S14109A, S24109A, S140XXA, S14141A, S14142A, S14143A, S14144A, S14145A, S14146A, S14147A, S14148A, S240XXA, S24141A, S24142A, S24143A, S24144A, S3401XA, S34101A, S34102A, S34103A, S34104A, S34105A, S34111A, S34112A, S34113A, S34114A, S34115A, S34119A, S34121A, S34122A, S34123A, S34124A, S34125A, S34129A, S3402XA, S34131A, S34132A, S14119A, S14129A, S14139A, S14149A, S14159A, S24119A, S24139A, S24149A, S24159A
Thrombocytopenia	287.3x, 287.4x, 287.5x, 446.6, 289.84	D693, D696, M311, D6941, D6942, D6949, D6951, D6959, D7582
Thrombophilia	286.9, 289.81	D688, D689, D6851, D6852, D6859, D6861, D6862
Varicose Veins	454.x	<b>ICD-10 Diagnosis:</b> I8310, I8311, I8312, I8390, I8391, I8392, I8393, I83001, I83002, I83003, I83004, I83005, I83008, I83009, I83011, I83012, I83013, I83014, I83015, I83018,

Condition	ICD-9 Code(s)	ICD-10 Code(s)
		I83019, I83021, I83022, I83023, I83024, I83025, I83028, I83029, I83201, I83202, I83203, I83204, I83205, I83208, I83209, I83211, I83212, I83213, I83214, I83215, I83218, I83219, I83221, I83222, I83223, I83224, I83225, I83228, I83229, I83811, I83812, I83813, I83819, I83891, I83892, I83893, I83899
Congestive Heart Failure	<p><b>ICD-9-CM codes:</b> 398.91, 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 428.xx</p> <p><b>ICD-9-PCS:</b> 37.20, 37.26, 37.27, 37.51, 37.52, 37.53, 37.54, 37.55, 37.60, 37.61, 37.62, 37.63, 37.64, 37.65, 37.66, 37.67, 37.68</p> <p><b>CPT codes:</b> 33930, 33933, 33935, 33940, 33944, 33945, 33960, 33961, 33967, 33968, 33970, 33971, 33973, 33974, 33975, 33976, 33977, 33978, 33979, 33980, 33981, 33982, 33983, 33990, 33991, 33992, 33993</p>	<p><b>ICD-10-diagnosis codes:</b> I110, I130, I132, I509, I501, I5020, I5021, I5022, I5023, I5030, I5031, I5032, I5033, I5040, I5041, I5042, I5043, I0981</p> <p><b>ICD-10-procedure codes:</b> 02HA0QZ, 02HA0RS, 02HA0RZ, 02HA3QZ, 02HA3RS, 02HA3RZ, 02HA4QZ, 02HA4RS, 02HA4RZ, 02HN0MZ, 02HN3MZ, 02HN4MZ, 02K80ZZ, 02K83ZZ, 02K84ZZ, 02PA0QZ, 02PA0RZ, 02PA3QZ, 02PA3RZ, 02PA4QZ, 02PA4RZ, 02WA0JZ, 02WA0QZ, 02WA0RZ, 02WA3QZ, 02WA3RZ, 02WA4QZ, 02WA4RZ, 02YA0Z0, 02YA0Z1, 02YA0Z2, 0KXF0ZZ, 0KXG0ZZ, 0PT10ZZ, 0PT20ZZ, 3E053KZ, 3E063KZ, 4A023FZ, 4A02X4Z, 4A02XFZ, 5A02110, 5A02116, 5A0211D, 5A02210, 5A02216, 5A0221D</p>
Diabetes Mellitus	249, 250, 357.2, 362, 366.41, 648.0, E932.3, V58.67	E9323, V5867, E089, E139, E088, E138, E119, E109, E118, E108, E098, E0821, E0836, E0840, E0841, E0842, E0843, E0844, E0849, E0851, E0921, E0936, E0940, E0941, E0942, E0943, E0944, E0949, E0951, E1036, E1040, E1042, E1051, E1136, E1140, E1142, E1151, E1336, E1340, E1341, E1342, E1343, E1344, E1349, E0822, E0829, E0852, E0922, E0929, E0952, E1041, E1043, E1044, E1049, E1052, E1141, E1143, E1144, E1149, E1152, E1351, E1352, E0865, E0810, E1310, E0800, E0801, E1300, E1301, E0811, E1311, E1321, E1322, E1329, E0839, E1339, E0859, E1359, E0869, E1365, E1369, E1165, E1065, E1169, E1010, E1100, E1101, E1069, E1011, E1121, E1122, E1129, E1021, E1022, E1029, E1139, E1039, E1159, E1059, O2402, O2412, O2432, O2482, O2492, O2493, O2403, O2413, O2433, O2483, E0910, E0901, E0911, E0965, E0969, E08311, E08319, E08610, E08618, E08628, E08630, E08638, E09311, E09319, E09610, E09618, E09628, E09630, E09638, E10311, E10319, E10618, E10630, E11311, E11319, E11329, E11339, E11349, E11359, E11618, E11630, E08321, E08329, E08331, E08339, E08341, E08349, E08351, E08359, E08649, E09321, E09329, E09331, E09339, E09341, E09349, E09351,

Condition	ICD-9 Code(s)	ICD-10 Code(s)
		E09359, E10321, E10329, E10331, E10339, E10341, E10349, E10351, E10359, E10610, E11321, E11331, E11341, E11351, E11610, E13311, E13319, E13321, E13329, E13331, E13339, E13341, E13349, E13351, E13359, E13610, E13618, E13630, E08641, E13641, E08620, E08621, E08622, E13620, E13621, E13622, E13628, E13638, E13649, E11641, E10641, E11620, E11621, E11622, E11628, E11638, E11649, E10620, E10621, E10622, E10628, E10638, E10649, O24019, O24119, O24319, O24819, O24919, O24011, O24012, O24013, O24111, O24112, O24113, O24311, O24312, O24313, O24811, O24812, O24813, O24911, O24912, O24913, T383X5A, T383X5S, Z794
Hypertension	362.11, 401, 402, 403, 404, 405	I10, I119, I110, I129, I120, I130, I132, I150, I158, I151, N262, I152, I159, I1310, I1311, H35031, H35032, H35033, H35039
Renal Disease	<p><b>ICD-9-CM:</b> V45.1x, V56.x, V42.0, 250.4x, 403.00, 403.10, 403.90, 404.00, 404.10, 404.90, 572.4, 581-583, 585, 586, 588, 791.0</p> <p><b>ICD-9-PCS:</b> 38.95, 39.27, 39.42, 39.43, 39.93, 39.95, 54.98, 55.69</p> <p><b>CPT Codes:</b> 36147, 36148, 36800-36821, 36825, 36830-36833, 36838, 36870, 90918-90925, 90935-90999, 50340, 50360, 50365, 50370</p>	<p>ICD-10 diagnosis: N08, N16, N19, B520, I129, K767, N044, N021, N022, N023, N041, N042, N024, N025, N026, N027, N043, N045, N046, N020, N040, N028, N047, N048, N029, N049, N032, N031, N033, N034, N035, N036, N037, N038, N030, N039, N059, N052, N062, N072, N053, N054, N055, N063, N064, N065, N073, N074, N075, N171, N172, N050, N051, N056, N057, N058, N060, N061, N066, N067, N068, N070, N071, N076, N077, N078, N140, N141, N142, N143, N144, N150, N158, N069, N079, N159, N181, N182, N183, N184, N185, N186, N189, N250, N251, N259, R800, R801, R803, R808, R809, M3214, M3215, M3504, Z4822, E1121, E1122, E1129, E1321, E1322, E1329, E1021, E1022, E1029, I1310, N2581, N2589, Z940, Z992, Z9115, Z4931, Z4901, Z4902, Z4932</p> <p><b>ICD-10 PCS Code:</b> 031209D, 031209F, 03120AD, 03120AF, 03120JD, 03120JF, 03120KD, 03120KF, 03120ZD, 03120ZF, 031309D, 031309F, 03130AD, 03130AF, 03130JD, 03130JF, 03130KD, 03130KF, 03130ZD, 03130ZF, 031409D, 031409F, 03140AD, 03140AF, 03140JD, 03140JF, 03140KD, 03140KF, 03140ZD, 03140ZF, 031509D, 031509F, 03150AD, 03150AF, 03150JD, 03150JF, 03150KD, 03150KF, 03150ZD, 03150ZF, 031609D, 031609F, 03160AD, 03160AF, 03160JD, 03160JF, 03160KD, 03160KF, 03160ZD, 03160ZF, 031709D, 031709F, 03170AD, 03170AF, 03170JD, 03170JF, 03170KD, 03170KF,</p>

Condition	ICD-9 Code(s)	ICD-10 Code(s)
		03170ZD, 03170ZF, 031809D, 031809F, 03180AD, 03180AF, 03180JD, 03180JF, 03180KD, 03180KF, 03180ZD, 03180ZF, 031909F, 03190AF, 03190JF, 03190KF, 03190ZF, 031A09F, 031A0AF, 031A0JF, 031A0KF, 031A0ZF, 031B09F, 031B0AF, 031B0JF, 031B0KF, 031B0ZF, 031C09F, 031C0AF, 031C0JF, 031C0KF, 031C0ZF, 03PY07Z, 03PY0JZ, 03PY0KZ, 03PY37Z, 03PY3JZ, 03PY3KZ, 03PY47Z, 03PY4JZ, 03PY4KZ, 05HY33Z, 06HY33Z, 0TY00Z0, 0TY00Z1, 0TY00Z2, 0TY10Z0, 0TY10Z1, 0TY10Z2, 3E1M39Z, 5A1D70Z, 5A1D80Z, 5A1D90Z
Liver Disease	<p><b>ICD-9-CM Codes:</b> 070.22, 070.23, 070.32, 070.33, 070.42-070.49, 070.52-070.59, 070.6, 070.7x, 070.9, 277.4, 456.0-456.2, 571-573, 751.62, 996.82, V42.7</p> <p><b>ICD-9-PCS:</b> 39.1, 42.91, 50.5</p> <p><b>CPT Codes:</b> 47135, 47136</p>	<p><b>ICD-10-CM Codes:</b> K77, B251, B181, B180, B170, B172, B182, B178, B188, B189, B190, B179, B199, E804, E805, E806, E807, K700, K702, K709, K739, K730, K754, K731, K732, K738, K740, K743, K744, K745, K760, K741, K742, K769, K750, K751, K766, K767, K761, K710, K712, K713, K714, K716, K717, K718, K719, K752, K753, K759, K764, K763, K765, K7291, K7041, K7111, K7201, K7211, Z4823, B1920, B1921, I8501, I8500, I8511, I8510, K7010, K7011, K7030, K7031, K7040, K7460, K7469, K7581, K7689, K7290, K7210, K7110, K7150, K7151, K7589, K7681, T8640, T8641, T8642, T8643, T8649, Z944</p> <p><b>ICD-10-PCS Codes:</b> 0610075, 0610075, 0610076, 0610076, 061007Y, 0610095, 0610095, 0610096, 0610096, 061009Y, 06100A5, 06100A6, 06100AY, 06100J5, 06100J6, 06100JY, 06100K5, 06100K6, 06100KY, 06100Z5, 06100Z6, 06100ZY, 0610475, 0610475, 0610476, 0610476, 061047Y, 0610495, 0610495, 0610496, 0610496, 061049Y, 06104A5, 06104A6, 06104AY, 06104J5, 06104J6, 06104JY, 06104K5, 06104K6, 06104KY, 06104Z5, 06104Z6, 06104ZY, 0611079, 0611079, 061107B, 061107Y, 0611099, 0611099, 061109B, 061109Y, 06110A9, 06110AB, 06110AY, 06110J9, 06110JB, 06110JY, 06110K9, 06110KB, 06110KY, 06110Z9, 06110ZB, 06110ZY, 0611479, 0611479, 061147B, 061147Y, 0611499, 0611499, 061149B, 061149Y, 06114A9, 06114AB, 06114AY, 06114J9, 06114JB, 06114JY, 06114K9, 06114KB, 06114KY, 06114Z9, 06114ZB, 06114ZY, 061207Y, 061209Y, 06120AY, 06120JY, 06120KY, 06120ZY,</p>

Condition	ICD-9 Code(s)	ICD-10 Code(s)
		061247Y, 061249Y, 06124AY, 06124JY, 06124KY, 06124ZY, 061407Y, 061409Y, 06140AY, 06140JY, 06140KY, 06140ZY, 061447Y, 061449Y, 06144AY, 06144JY, 06144KY, 06144ZY, 061507Y, 061509Y, 06150AY, 06150JY, 06150KY, 06150ZY, 061547Y, 061549Y, 06154AY, 06154JY, 06154KY, 06154ZY, 061607Y, 061609Y, 06160AY, 06160JY, 06160KY, 06160ZY, 061647Y, 061649Y, 06164AY, 06164JY, 06164KY, 06164ZY, 061707Y, 061709Y, 06170AY, 06170JY, 06170KY, 06170ZY, 061747Y, 061749Y, 06174AY, 06174JY, 06174KY, 06174ZY, 0618079, 0618079, 061807B, 061807Y, 0618099, 0618099, 061809B, 061809Y, 06180A9, 06180AB, 06180AY, 06180J9, 06180JB, 06180JY, 06180K9, 06180KB, 06180KY, 06180Z9, 06180ZB, 06180ZY, 0618479, 0618479, 061847B, 061847Y, 0618499, 0618499, 061849B, 061849Y, 06184A9, 06184AB, 06184AY, 06184J9, 06184JB, 06184JY, 06184K9, 06184KB, 06184KY, 06184Z9, 06184ZB, 06184ZY, 061907Y, 061909Y, 06190AY, 06190JY, 06190KY, 06190ZY, 061947Y, 061949Y, 06194AY, 06194JY, 06194KY, 06194ZY, 061B07Y, 061B09Y, 061B0AY, 061B0JY, 061B0KY, 061B0ZY, 061B47Y, 061B49Y, 061B4AY, 061B4JY, 061B4KY, 061B4ZY, 061J07Y, 061J09Y, 061J0AY, 061J0JY, 061J0KY, 061J0ZY, 061J47Y, 061J49Y, 061J4AY, 061J4JY, 061J4KY, 061J4ZY, 06L30ZZ, 06L33ZZ, 06L34ZZ, 0FY00Z0, 0FY00Z1, 0FY00Z2
COPD	491, 492, 496	J410, J411, J449, J441, J440, J418, J42, J439, J430, J431, J432, J438
Peptic Ulcer Disease	531-534	K250, K251, K252, K253, K254, K255, K256, K257, K259, K260, K261, K262, K263, K264, K265, K266, K267, K269, K270, K271, K272, K273, K274, K275, K276, K277, K279, K280, K281, K282, K283, K284, K285, K286, K287, K289
Inflammatory Bowel Disease	555, 556	K5000, K5010, K5080, K5090, K5180, K5120, K5130, K5140, K5150, K5100, K5190, K50012, K50013, K50014, K50112, K50113, K50114, K50812, K50813, K50814, K50912, K50913, K50914, K51012, K51013, K51014, K51212, K51213, K51214, K51312, K51313, K51314, K51412, K51413, K51414, K51512, K51513, K51514, K51812, K51813, K51814, K51912, K51913, K51914, K50011, K50018, K50019, K50111, K50118, K50119, K50811, K50818, K50819, K50911, K50918, K50919, K51211,

Condition	ICD-9 Code(s)	ICD-10 Code(s)
		K51218, K51219, K51311, K51318, K51319, K51411, K51418, K51419, K51511, K51518, K51519, K51011, K51018, K51019, K51811, K51818, K51819, K51911, K51918, K51919
Peripheral Vascular Disease	440, 441, 442, 443, 444, 445	I700, I701, I708, I711, I712, I713, I714, I718, I715, I716, I719, I790, I721, I722, I723, I724, I720, I728, I729, I731, I670, I791, I798, I739, I742, I743, I744, I745, I748, I749, I7025, I7035, I7045, I7055, I7065, I7075, I7301, I7092, I7090, I7091, I7100, I7101, I7102, I7103, I7300, I7771, I7772, I7773, I7774, I7779, I7381, I7389, I7401, I7409, I7410, I7419, I7411, I7581, I7589, I70231, I70232, I70233, I70234, I70235, I70238, I70239, I70241, I70242, I70243, I70244, I70245, I70248, I70249, I70331, I70332, I70333, I70334, I70335, I70338, I70339, I70341, I70342, I70343, I70344, I70345, I70348, I70349, I70361, I70362, I70363, I70368, I70369, I70431, I70432, I70433, I70434, I70435, I70438, I70439, I70441, I70442, I70443, I70444, I70445, I70448, I70449, I70461, I70462, I70463, I70468, I70469, I70531, I70532, I70533, I70534, I70535, I70538, I70539, I70541, I70542, I70543, I70544, I70545, I70548, I70549, I70561, I70562, I70563, I70568, I70569, I70631, I70632, I70633, I70634, I70635, I70638, I70639, I70641, I70642, I70643, I70644, I70645, I70648, I70649, I70661, I70662, I70663, I70668, I70669, I70731, I70732, I70733, I70734, I70735, I70738, I70739, I70741, I70742, I70743, I70744, I70745, I70748, I70749, I70761, I70762, I70763, I70768, I70769, I70201, I70202, I70203, I70208, I70209, I70211, I70212, I70213, I70218, I70219, I70221, I70222, I70223, I70228, I70229, I70261, I70262, I70263, I70268, I70269, I70291, I70292, I70293, I70298, I70299, I70301, I70302, I70303, I70308, I70309, I70311, I70312, I70313, I70318, I70319, I70321, I70322, I70323, I70328, I70329, I70391, I70392, I70393, I70398, I70399, I70601, I70602, I70603, I70608, I70609, I70611, I70612, I70613, I70618, I70619, I70621, I70622, I70623, I70628, I70629, I70691, I70692, I70693, I70698, I70699, I70701, I70702, I70703, I70708, I70709, I70711, I70712, I70713, I70718, I70719, I70721, I70722, I70723, I70728, I70729, I70791, I70792, I70793, I70798, I70799, I70401, I70402, I70403, I70408, I70409, I70411, I70412, I70413, I70418, I70419, I70421,

Condition	ICD-9 Code(s)	ICD-10 Code(s)
		I70422, I70423, I70428, I70429, I70491, I70492, I70493, I70498, I70499, I70501, I70502, I70503, I70508, I70509, I70511, I70512, I70513, I70518, I70519, I70521, I70522, I70523, I70528, I70529, I70591, I70592, I70593, I70598, I70599, I75011, I75012, I75013, I75019, I75021, I75022, I75023, I75029
Fractures/ Trauma involving the Lower Extremities	820-828, 835-838, 890-897, 904, 928.0-928.3, 928.8, 928.9, 945, 956, 959.6, 959.7	 <b>Fractures Involving the Lower Extremities</b>
Falls	E8800, E8801, E8809, E8810, E8811, E882, E8830, E8831, E8832, E8839, E8840, E8841, E8842, E8843, E8843, E8843, E8844, E8845, E8846, E8849, E8849, E8849, E8850, E8851, E8852, E8853, E8854, E8859, E8860, E8869, E887, E8880, E8881, E8888, E8889	W100XXA, W100XXD, W101XXA, W101XXD, W102XXA, W102XXD, W108XXA, W108XXD, W109XXA, W109XXD, W07XXXA, W07XXXD, W050XXA, W050XXD, W051XXA, W051XXD, W052XXA, W052XXD, W06XXXA, W06XXXD, W08XXXA, W08XXXD, W1811XA, W1811XD, W1812XA, W1812XD, W001XXA, W001XXD, W002XXA, W002XXD, W1789XA, W1789XD, W000XXA, W000XXD, W009XXA, W009XXD, W010XXA, W010XXD, W182XXA, W182XXD, W03XXXA, W03XXXD, W19XXXA, W0110XA, W0110XD, W01110A, W01110D, W01111A, W01111D, W01118A, W01118D, W01119A, W01119D, W1802XA, W1802XD, W01190A, W01190D, W01198A, W01198D, W1800XA, W1800XD, W1809XD, W04XXXA, W04XXXD, W1830XA, W1830XD, W1831XA, W1831XD, W1839XA, W1839XD, W19XXXD, W11XXXA, W11XXXD
Pelvic or orthopedic surgery	<b>Refer to Table 8</b>	<b>Refer to Table 8</b>
Any hospitalization for ≥3 days	Any acute-care inpatient stay for ≥3 days from medical claims	

**TABLE 8: SELECTED SURGERIES**



**TABLE 9: DEYO-CHARLSON COMORBIDITY INDEX CODES**

Comorbidity	ICD-9 Codes	ICD-10 Codes	Points
Myocardial Infarction	410, 412	I2109, I2111, I2119, I2129, I213, I214, I252,	1

Comorbidity	ICD-9 Codes	ICD-10 Codes	Points
Congestive Heart Failure	428-428.9	I50.1, I50.20, I50.21, I50.22, I50.23, I50.30, I50.31, I50.32, I50.33, I50.40, I50.41, I50.42, I50.43, I50.9	1
Peripheral vascular disease	443.9, 441-441.9, 785.4, V43.4, 38.48	I7100, I7101, I7102, I7103, I711, I712, I713, I714, I718, I715, I716, I719, I739, I96, Z95828, 04RK07Z, 04RKOJZ, 04RK0KZ, 04RK47Z, 04RK4JZ, 04RK4KZ, 04RL07Z, 04RLOJZ, 04RLOKZ, 04RL47Z, 04RL4JZ, 04RL4KZ, 04RM07Z, 04RMOJZ, 04RM0KZ, 04RM47Z, 04RM4JZ, 04RM4KZ, 04RN07Z, 04RNOJZ, 04RN0KZ, 04RN47Z, 04RN4JZ, 04RN4KZ, 04RP07Z, 04RPOJZ, 04RP0KZ, 04RP47Z, 04RP4JZ, 04RP4KZ, 04RQ07Z, 04RQ0JZ, 04RQ0KZ, 04RQ47Z, 04RQ4JZ, 04RQ4KZ, 04RR07Z, 04RR0JZ, 04RR0KZ, 04RR47Z, 04RR4JZ, 04RR4KZ, 04RS07Z, 04RS0JZ, 04RS0KZ, 04RS47Z, 04RS4JZ, 04RS4KZ, 04RT07Z, 04RT0JZ, 04RT0KZ, 04RT47Z, 04RT4JZ, 04RT4KZ, 04RU07Z, 04RU0JZ, 04RU0KZ, 04RU47Z, 04RU4JZ, 04RU4KZ, 04RV07Z, 04RVOJZ, 04RV0KZ, 04RV47Z, 04RV4JZ, 04RV4KZ, 04RW07Z, 04RW0JZ, 04RW0KZ, 04RW47Z, 04RW4JZ, 04RW4KZ, 04RY07Z, 04RY0JZ, 04RY0KZ, 04RY47Z, 04RY4JZ, 04RY4KZ	1
Cerebrovascular disease	430-438	G450, , G451, G454, G458, G459, I609, I619, I6200, I621, I629, I63019, I63119, I63139, I6320, I63219, I6322, I63239, I6330, I6340, I6350, I6359, , I6509, I651, I6529, I658, I658, I659, I6609, I6619, I6629, I669, I671, I672, I674, I675, I676, I677, I6781, I6782, I67848, I6789, I679, I69.9	1
Dementia	290-290.9	F0150, F0151, F0390, F05	1
Rheumatologic Disease	710.1, 710.4, 714.0-714.2, 714.81, 725	M0500, M0510, M0530, M0560, M061, M069, M3320, M340, M341, M349, M353	1
Peptic Ulcer Disease	531-534.9	K250-K289	1
Mild Liver Disease	571.2, 571.5, 571.6, 571.4	K7030, K730, K732, K738, K739, K740, K743, K744, K745, K7460, K7469, K754,	1
Diabetes	250-250.3, 250.7	E1010, E1011, E1051, E10641, E1065, E1069, E109, E1100, E1101, E1151, E11641, E1165, E1169, E119	1
Diabetes w/ Complications	250.4-250.6	E1021, E1029, E10311, E10319, E1036, E1039, E1040, E1065, E1121, E1129, E11311, E11319, E1136, E1139, E1140, E1165	2
Hemiplegia or Paraplegia	344.1, 342-342.9	G8101-G8104, G8110-G8114, G8190-GG8194, G8220	2
Renal Disease	582-582.9, 583-583.7, 585, 586, 588-588.9	N032, N033, N035, N038, N039, N052, N055, N059, N08, N171, N172, N181, N182, N183, N184, N185, N186, N189, N19, N250, N251, N2581, N2589, N259,	2
Any Malignancy	140-172.9, 174-195.8, 200-208.9	C0-C96, D0310, D0311, D0312, D0320, D0321, D0322, D0330, D0339, D034, D0351, D0352, D0359, D0360, D0361, D0362, D0370, D0371, D0372, D038, D039, D45, D45, D45,	2
Moderate or Severe Liver Disease	572.2-572.8, 456.0-456.21	I8500, I8501, I8510, I8511, K7210, K7290, K7290, K7291, K766, K767,	3
Metastatic Solid Tumor	196-199.1	C770, C771, C772, C773, C774, C775, C778, C779, C7800, C781, C782, C7839, C784, C785, C786, C787, C787, C7889,	6

Comorbidity	ICD-9 Codes	ICD-10 Codes	Points
		C7900, C7911, C7919, C792, C7931, C7932, C7949, C7951, C7952, C7960, C7970, C7981, C7982, C7989, C800	
AIDS	042-044	B20	6

**TABLE 10: CODES FOR PHARMACOTHERAPY**

Drug	National Drug Codes	HCPCS Codes*
ACE inhibitors/ARBs	Benazepril, Captopril, Enalapril, Fosinopril, Lisinopril, Moexipril, Perindopril, Quinapril, Ramipril, Trandolapril, azilsartan, candesartan, eprosartan, irbesartan, losartan, olmesartan, telmisartan, valsartan,	N/A
Antiarrhythmic	Alinidine, Bretylium, Digitalis, Diltiazem, Diphenylhydantoin, Disopyramide, Dofetilide, Encainide, Flecainide, Mexiletine, Moricizine, Nadolol, Propafenone, Quinidine, Tocainide, Verapamil	N/A
	Adenosine	J0150, J0151, J0152, J0153
	Amiodarone	J0282
	Atropine	J0461, J7635, J7636
	Digoxin	J1160, J1162
	Ibutilide	J1742
	Lidocaine	C9285, J2001
	Procainamide	J2690
	Sotalol	C9482
Antiplatelet	Abciximab	J0130
	Anagrelide Hydrochloride	N/A
	Aspirin/Dipyridamole	G8598, G8599, G8895, G8896, G8897, G9277, G9278, G9435, G9436, G9437, G9793, G9794, G9795
	Cilostazol	G9531
	Clopidogrel Hydrogen Sulfate	G9531
	Dipyridamole	G9531, J1245
	Eptifibatide	J1327
	Prasugrel Hydrochloride	G9531
	Ticagrelor	G9531
	Ticlopidine Hydrochloride	G9531
Tirofiban Hydrochloride	J3246	
Aromatase inhibitors	Arimidex, aromasin, femara	N/A
Beta blockers	Acebutolol, Atenolol, Betaxolol, Bisoprolol, Esmolol, Carteolol, Carvedilol, Labetalol, Levobunolol, Metipranolol, Metoprolol, Nebivolol, Nadolol, Penbutolol, Pindolol, Propranolol, Sotalol, Timolol,	N/A
Erythropoiesis stimulating agents	Epoetin alfa	J0885, J0886, Q4081
	Epoetin beta	J0887, J0888, Q9973, Q9972

Drug	National Drug Codes	HCPCS Codes*
	Epoetin delta	N/A
	Epoetin omega	N/A
	Darbepoetin alpha	J0881, J0882
	Pegylated Epoetin beta	N/A
Gastroprotective agents	Celecoxib, ketoprofen, meloxicam, etoricoxib, misoprostol, dexlansoprazole, esomeprazole, lansoprazole, omeprazole, pantoprazole, rabeprazole	N/A
Hormones		
NSAIDs	Diclofenac	J 1130
	Bromfenac, Choline and Magnesium salicylate, Methenamine and sodium salicylate, Fenoprofen, Flurbiprofen, Ketoprofen, Naproxen, Oxaprozin, Sulindac, Piroxicam, Etodolac, Meloxicam, Nabumetone, Celecoxib/Celebrex, Indomethacin, Mefenamic acid, Meclofenamate, Diflunisal, Tolmetin, Salsalate,	N/A
	Aspirin	G8598, G8895, G9277, G9793
	Ibuprofen	J1741
	Ketorolac	J1885, C9447
	Diclofenac	J 1130
SERMs	Tamoxifen, raloxifene, arzoxifene, bazedoxifene, lasofoxifene, ospemifene, clomifene, cyclofenil, ormeloxifene, toremifene, raloxifene,	N/A
	Tamoxifen	S0187
Statins	Atorvastatin, Fluvastatin, Lovastatin, Pitavastatin, Pravastatin, Rosuvastatin, Simvastatin.	N/A

\*National Drug Codes will be used wherever applicable.

**TABLE 11: MAJOR BLEEDING CODES**

Category	ICD-9 Codes	ICD-10 Codes
Gastrointestinal	<b>ICD-9-CM Codes:</b> 456.0x, 456.20, 530.82, 531.0x, 531.2x, 531.4x, 531.6x, 532.0x, 532.2x, 532.4x, 532.6x, 533.0x, 533.2x, 533.4x, 533.6x, 534.0x, 534.2x, 534.4x, 534.6x, 535.01, 535.11, 535.21, 535.31, 535.41, 535.51, 535.61, 537.83, 562.02, 562.03, 562.12, 562.13, 568.81, 569.3, 569.85, 578.x  <b>ICD-9-PCS Codes:</b> 44.43	<b>ICD-10-CM Codes:</b> I8501, I8511, K2211, K226, K250, K252, K254, K256, K260, K262, K264, K266, K270, K272, K274, K276, K280, K282, K284, K286, K2901, K2921, K2931, K2941, K2951, K2961, K2971, K2981, K2991, K31811, K3182, K5521, K5701, K5711, K5713, K5721, K5731, K5733, K5741, K5751, K5753, K5781, K5791, K5793, K625, K6381, K661, K920, K921, K922, K9161, K9162, K91840, K91841  <b>ICD-10-PCS Codes:</b> no codes
Intracranial	430.xx, 431.xx, 432.xx, 852.0x, 852.2x, 852.4x, 853.0x	I6000, I6001, I6002, I6010, I6011, I6012, I602, I6030, I6031, I6032, I604, I6050, I6051, I6052, I606, I607, I608, I609, I610, I611, I612, I613, I614, I615, I616, I618, I619, I6200, I6201, I6202, I6203, I621, I629, S06340A, S06341A, S06342A, S06343A, S06344A, S06345A, S06346A, S06347A, S06348A, S06349A, S06350A, S06351A, S06352A, S06353A, S06354A, S06355A,

Category	ICD-9 Codes	ICD-10 Codes
		S06356A, S06357A, S06358A, S06359A, S06360A, S06361A, S06362A, S06363A, S06364A, S06365A, S06366A, S06367A, S06368A, S06369A, S064X0A, S064X1A, S064X2A, S064X3A, S064X4A, S064X5A, S064X6A, S064X7A, S064X8A, S064X9A, S065X0A, S065X1A, S065X2A, S065X3A, S065X4A, S065X5A, S065X6A, S065X7A, S065X8A, S065X9A, S066X0A, S066X1A, S066X2A, S066X3A, S066X4A, S066X5A, S066X6A, S066X7A, S066X8A, S066X9A
Other MB	<p><b>ICD-9-Diagnosis:</b> 285.1, 360.43, 362.43, 362.81, 363.61, 363.62, 363.72, 364.41, 372.72, 374.81, 376.32, 377.42, 379.23, 423.0x, 596.7x, 599.7x, 602.1x, 620.1, 621.4, 626.2, 626.5, 626.7, 626.8, 626.9, 719.1x, 782.7, 784.7, 784.8, 786.3x, 958.2, 997.02, 998.11</p> <p><b>ICD-9 procedure:</b> 99.04</p>	<p><b>ICD-10 CM Codes:</b> D62, D7801, D7802, D7821, D7822, E3601, E3602, E89810, E89811, G9731, G9732, G9751, G9752, H05231, H05232, H05233, H05239, H1130, H1131, H1132, H1133, H2100, H2101, H2102, H2103, H31301, H31302, H31303, H31309, H31311, H31312, H31313, H31319, H31411, H31412, H31413, H31419, H3560, H3561, H3562, H3563, H35731, H35732, H35733, H35739, H4310, H4311, H4312, H4313, H44811, H44812, H44813, H44819, H47021, H47022, H47023, H47029, H59111, H59112, H59113, H59119, H59121, H59122, H59123, H59129, H59311, H59312, H59313, H59319, H59321, H59322, H59323, H59329, H9521, H9522, H9541, H9542, I312, I97410, I97411, I97418, I9742, I97610, I97611, I97618, I97620, J9561, J9562, J95830, J95831, L7601, L7602, L7621, L7622, M2500, M25011, M25012, M25019, M25021, M25022, M25029, M25031, M25032, M25039, M25041, M25042, M25049, M25051, M25052, M25059, M25061, M25062, M25069, M25071, M25072, M25073, M25074, M25075, M25076, M2508, M96810, M96811, M96830, M96831, N421, N857, N897, N920, N923, N930, N938, N939, N9961, N9962, N99820, N99821, R040, R041, R042, R0489, R049, R233, R310, R319, R58, T792XXA</p> <p><b>ICD-10 PCS Codes:</b> 30230N1, 30230P1, 30233N1, 30233P1, 30240N1, 30240P1, 30243N1, 30243P1, 30250N1, 30250P1, 30253N1, 30253P1, 30260N1, 30260P1, 30263N1, 30263P1</p>

**TABLE 12: CRNM BLEEDING CODE**

Critical Care Site	Bleeding Category	ICD-10-CM	ICD-9-CM
No	GI	I8501	4560
No	GI	I8511	45620
No	GI	K228	53082
No	GI	K250	53100
No	GI	K250	53101
No	GI	K252	53120
No	GI	K252	53121
No	GI	K254	53140

Critical Care Site	Bleeding Category	ICD-10-CM	ICD-9-CM
No	GI	K254	53141
No	GI	K256	53160
No	GI	K256	53161
No	GI	K260	53200
No	GI	K260	53201
No	GI	K262	53220
No	GI	K262	53221
No	GI	K264	53240
No	GI	K264	53241
No	GI	K266	53260
No	GI	K266	53261
No	GI	K270	53300
No	GI	K270	53301
No	GI	K272	53320
No	GI	K272	53321
No	GI	K274	53340
No	GI	K274	53341
No	GI	K276	53360
No	GI	K276	53361
No	GI	K280	53400
No	GI	K280	53401
No	GI	K282	53420
No	GI	K282	53421
No	GI	K284	53440
No	GI	K284	53441
No	GI	K286	53460
No	GI	K286	53461
No	GI	K2901	53501
No	GI	K2931	53511
No	GI	K2941	53511
No	GI	K2951	53511
No	GI	K2961	53521
No	GI	K2921	53531
No	GI	K2931	53541
No	GI	K2961	53541
No	GI	K2971	53551
No	GI	K2991	53551
No	GI	K2981	53561
No	GI	K31811	53783

Critical Care Site	Bleeding Category	ICD-10-CM	ICD-9-CM
No	GI	K5711	56202
No	GI	K5713	56203
No	GI	K5731	56212
No	GI	K5791	56212
No	GI	K5733	56213
No	GI	K5793	56213
Yes Probably	GI	K661	56881
No	GI	K625	5693
No	GI	K5521	56985
No	GI	K920	5780
No	GI	K921	5781
No	GI	K922	5789
Yes	ICH	I6000	430
Yes	ICH	I6001	430
Yes	ICH	I6002	430
Yes	ICH	I6010	430
Yes	ICH	I6011	430
Yes	ICH	I6012	430
Yes	ICH	I602	430
Yes	ICH	I6030	430
Yes	ICH	I6031	430
Yes	ICH	I6032	430
Yes	ICH	I604	430
Yes	ICH	I6050	430
Yes	ICH	I6051	430
Yes	ICH	I6052	430
Yes	ICH	I606	430
Yes	ICH	I607	430
Yes	ICH	I608	430
Yes	ICH	I609	430
Yes	ICH	I610	431
Yes	ICH	I611	431
Yes	ICH	I612	431
Yes	ICH	I613	431
Yes	ICH	I614	431
Yes	ICH	I615	431
Yes	ICH	I616	431
Yes	ICH	I618	431
Yes	ICH	I619	431

Critical Care Site	Bleeding Category	ICD-10-CM	ICD-9-CM
Yes	ICH	I621	4320
Yes	ICH	I6200	4321
Yes	ICH	I6201	4321
Yes	ICH	I6202	4321
Yes	ICH	I6203	4321
Yes	ICH	I629	4329
Yes	ICH	S066X0A	85200
Yes	ICH	S066X0A	85201
Yes	ICH	S066X1A	85202
Yes	ICH	S066X2A	85202
Yes	ICH	S066X3A	85203
Yes	ICH	S066X4A	85203
Yes	ICH	S066X5A	85204
Yes	ICH	S066X6A	85205
Yes	ICH	S066X7A	85205
Yes	ICH	S066X8A	85205
Yes	ICH	S066X9A	85206
Yes	ICH	S066X0A	85209
Yes	ICH	S066X9A	85209
Yes	ICH	S065X0A	85220
Yes	ICH	S065X0A	85221
Yes	ICH	S065X1A	85222
Yes	ICH	S065X2A	85222
Yes	ICH	S065X3A	85223
Yes	ICH	S065X4A	85223
Yes	ICH	S065X5A	85224
Yes	ICH	S065X6A	85225
Yes	ICH	S065X7A	85225
Yes	ICH	S065X8A	85225
Yes	ICH	S065X9A	85226
Yes	ICH	S065X0A	85229
Yes	ICH	S065X9A	85229
Yes	ICH	S064X0A	85240
Yes	ICH	S064X0A	85241
Yes	ICH	S064X1A	85242
Yes	ICH	S064X2A	85242
Yes	ICH	S064X3A	85243
Yes	ICH	S064X4A	85243
Yes	ICH	S064X5A	85244

Critical Care Site	Bleeding Category	ICD-10-CM	ICD-9-CM
Yes	ICH	S064X6A	85245
Yes	ICH	S064X7A	85245
Yes	ICH	S064X8A	85245
Yes	ICH	S064X9A	85246
Yes	ICH	S064X0A	85249
Yes	ICH	S064X9A	85249
Yes	ICH	S06360A	85300
Yes	ICH	S06340A	85301
Yes	ICH	S06350A	85301
Yes	ICH	S06360A	85301
Yes	ICH	S06341A	85302
Yes	ICH	S06342A	85302
Yes	ICH	S06351A	85302
Yes	ICH	S06352A	85302
Yes	ICH	S06361A	85302
Yes	ICH	S06362A	85302
Yes	ICH	S06343A	85303
Yes	ICH	S06344A	85303
Yes	ICH	S06353A	85303
Yes	ICH	S06354A	85303
Yes	ICH	S06363A	85303
Yes	ICH	S06364A	85303
Yes	ICH	S06345A	85304
Yes	ICH	S06355A	85304
Yes	ICH	S06365A	85304
Yes	ICH	S06346A	85305
Yes	ICH	S06347A	85305
Yes	ICH	S06348A	85305
Yes	ICH	S06356A	85305
Yes	ICH	S06357A	85305
Yes	ICH	S06358A	85305
Yes	ICH	S06366A	85305
Yes	ICH	S06367A	85305
Yes	ICH	S06368A	85305
Yes	ICH	S06349A	85306
Yes	ICH	S06359A	85306
Yes	ICH	S06369A	85306
Yes	ICH	S06360A	85309
Yes	ICH	S06369A	85309

Critical Care Site	Bleeding Category	ICD-10-CM	ICD-9-CM
No But Defines A Major Bleed	Other	D62	2851
Yes	Other	H44811	36043
Yes	Other	H44812	36043
Yes	Other	H44813	36043
Yes	Other	H44819	36043
Yes	Other	H35731	36243
Yes	Other	H35732	36243
Yes	Other	H35733	36243
Yes	Other	H35739	36243
Yes	Other	H3560	36281
Yes	Other	H3561	36281
Yes	Other	H3562	36281
Yes	Other	H3563	36281
Yes	Other	H31301	36361
Yes	Other	H31302	36361
Yes	Other	H31303	36361
Yes	Other	H31309	36361
Yes	Other	H31311	36362
Yes	Other	H31312	36362
Yes	Other	H31313	36362
Yes	Other	H31319	36362
Yes	Other	H31411	36372
Yes	Other	H31412	36372
Yes	Other	H31413	36372
Yes	Other	H31419	36372
Yes	Other	H2100	36441
Yes	Other	H2101	36441
Yes	Other	H2102	36441
Yes	Other	H2103	36441
No	Other	H1130	37272
No	Other	H1131	37272
No	Other	H1132	37272
No	Other	H1133	37272
No	Other	H0289	37481
Yes	Other	H05231	37632
Yes	Other	H05232	37632
Yes	Other	H05233	37632
Yes	Other	H05239	37632

Critical Care Site	Bleeding Category	ICD-10-CM	ICD-9-CM
Yes	Other	H47021	37742
Yes	Other	H47022	37742
Yes	Other	H47023	37742
Yes	Other	H47029	37742
Yes	Other	H4310	37923
Yes	Other	H4311	37923
Yes	Other	H4312	37923
Yes	Other	H4313	37923
Yes	Other	I312	4230
No	Other	N3289	5967
No	Other	R319	59970
No	Other	R310	59971
No	Other	R311	59972
No	Other	R312	59972
No	Other	N421	6021
No	Other	N831	6201
No	Other	N857	6214
No	Other	N920	6262
No	Other	N923	6265
No	Other	N930	6267
No	Other	N897	6268
No	Other	N925	6268
No	Other	N938	6268
No	Other	N926	6269
No	Other	N939	6269
Yes	Other	M2500	71910
Yes	Other	M25011	71911
Yes	Other	M25012	71911
Yes	Other	M25019	71911
Yes	Other	M25021	71912
Yes	Other	M25022	71912
Yes	Other	M25029	71912
Yes	Other	M25031	71913
Yes	Other	M25032	71913
Yes	Other	M25039	71913
Yes	Other	M25041	71914
Yes	Other	M25042	71914
Yes	Other	M25049	71914
Yes	Other	M25051	71915

Critical Care Site	Bleeding Category	ICD-10-CM	ICD-9-CM
Yes	Other	M25052	71915
Yes	Other	M25059	71915
Yes	Other	M25061	71916
Yes	Other	M25062	71916
Yes	Other	M25069	71916
Yes	Other	M25071	71917
Yes	Other	M25072	71917
Yes	Other	M25073	71917
Yes	Other	M25074	71917
Yes	Other	M25075	71917
Yes	Other	M25076	71917
Yes	Other	M2508	71918
Yes	Other	M2500	71919
No	Other	R233	7827
No	Other	R040	7847
No	Other	R041	7848
No	Other	R042	78630
No	Other	R049	78630
No	Other	R0481	78631
No	Other	R0489	78639
No	Other	T792XXA	9582
Yes If Brain Or Spinal	Other	G9731	99702
Yes If Brain Or Spinal	Other	G9732	99702
No These Are Infarcts	Other	I97810	99702
No These Are Infarcts	Other	I97811	99702
No These Are Infarcts	Other	I97820	99702
No These Are Infarcts	Other	I97821	99702
Yes As Retroperitoneal	Other	D7801	99811
Yes As Retroperitoneal	Other	D7802	99811
Yes As Retroperitoneal	Other	D7821	99811
Yes As Retroperitoneal	Other	D7822	99811
Yes If Retroperitoneal E.G Pancreas, Adrenal	Other	E3601	99811
Yes If Retroperitoneal E.G Pancreas, Adrenal	Other	E3602	99811
Yes If Brain Or Spinal	Other	G9731	99811
Yes If Brain Or Spinal	Other	G9732	99811
Yes If Brain Or Spinal	Other	G9751	99811
Yes If Brain Or Spinal	Other	G9752	99811
Yes	Other	H59111	99811

<b>Critical Care Site</b>	<b>Bleeding Category</b>	<b>ICD-10-CM</b>	<b>ICD-9-CM</b>
Yes	Other	H59112	99811
Yes	Other	H59113	99811
Yes	Other	H59119	99811
Yes	Other	H59121	99811
Yes	Other	H59122	99811
Yes	Other	H59123	99811
Yes	Other	H59129	99811
Yes	Other	H59311	99811
Yes	Other	H59312	99811
Yes	Other	H59313	99811
Yes	Other	H59319	99811
Yes	Other	H59321	99811
Yes	Other	H59322	99811
Yes	Other	H59323	99811
Yes	Other	H59329	99811
No	Other	H9521	99811
No	Other	H9522	99811
No	Other	H9541	99811
No	Other	H9542	99811
Yes As May Be Pericardial Or Extend To Retroperitoneal	Other	I97410	99811
Yes As May Be Pericardial Or Extend To Retroperitoneal	Other	I97411	99811
Yes As May Be Pericardial Or Extend To Retroperitoneal	Other	I97418	99811
Yes As May Be Pericardial Or Extend To Retroperitoneal	Other	I9742	99811
Yes As May Be Pericardial Or Extend To Retroperitoneal	Other	I97610	99811
Yes As May Be Pericardial Or Extend To Retroperitoneal	Other	I97611	99811
Yes As May Be Pericardial Or Extend To Retroperitoneal	Other	I97618	99811
Yes As May Be Pericardial Or Extend To Retroperitoneal	Other	I9762	99811

Critical Care Site	Bleeding Category	ICD-10-CM	ICD-9-CM
No Respiratory Not Critical	Other	J9561	99811
No	Other	J9562	99811
No	Other	J95830	99811
No	Other	J95831	99811
No GI Not Critical	Other	K9161	99811
No	Other	K9162	99811
No	Other	K91840	99811
No	Other	K91841	99811
No	Other	L7601	99811
No	Other	L7602	99811
No	Other	L7621	99811
No	Other	L7622	99811
No Unless Associated With Compartment Syndrome	Other	M96810	99811
No Unless Associated With Compartment Syndrome	Other	M96811	99811
No Unless Associated With Compartment Syndrome	Other	M96830	99811
No Unless Associated With Compartment Syndrome	Other	M96831	99811
No Unless Renal Which Is Retroperitoneal	Other	N9961	99811
No Unless Renal Which Is Retroperitoneal	Other	N9962	99811
No Unless Renal Which Is Retroperitoneal	Other	N99820	99811
No Unless Renal Which Is Retroperitoneal	Other	N99821	99811

### 13. ANNEX 1. ADDITIONAL INFORMATION

Not Applicable

## 14. REFERENCES

---

- <sup>1</sup> Dafni, U. (2011). Landmark analysis at the 25-year landmark point. *Circulation: Cardiovascular Quality and Outcomes*, 4(3), 363-371.
- <sup>2</sup> Goldhaber SZ, Bounameaux H. Pulmonary embolism and deep vein thrombosis. *Lancet* 2012;379(9828):1835-46.
- <sup>3</sup> Coleman CI, Baugh C, Crivera C, et al. Healthcare costs associated with rivaroxaban or warfarin use for the treatment of venous thromboembolism. *J Med Econ*. 2017;20:200–203.
- <sup>4</sup> Mahan CE, Borrego ME, Woerschling AL, et al. Venous thromboembolism: annualised United States models for total, hospital-acquired and preventable costs utilising long-term attack rates. *Thromb Haemost*. 2012;108(2):291–302.
- <sup>5</sup> Clearon K, Akl EA. Duration of anticoagulant therapy for deep vein thrombosis and pulmonary embolism *Blood*. 2014;123(12): 1794-1801.
- <sup>6</sup> Clearon K, et al. Antithrombotic Therapy for VTE Disease CHEST Guideline and Expert Panel Report. *CHEST* 2016; 149(2):315-352.
- <sup>7</sup> Schulman S, Ogren M. New concepts in optimal management of anticoagulant therapy for extended treatment of venous thromboembolism. *Thromb Haemost*. 2006;96(3):258-66.
- <sup>8</sup> Kearon C, Akl EA, Ornelas J, et al. Antithrombotic therapy for VTE disease: CHEST guideline and expert panel report. *Chest* 2016;149(2):315-52.
- <sup>9</sup> Baglin T, Luddington R, Brown K, Baglin C. Incidence of recurrent venous thromboembolism in relation to clinical and thrombophilic risk factors: prospective cohort study. *Lancet* 2003;362(9383):523-6.
- <sup>10</sup> Weitz JI. Extended VTE Treatment Insights About Direct Oral Anticoagulants. *Thrombosis Advisor website*. <https://www.thrombosisadviser.com/extended-vte-treatment-insights-direct-oral-anticoagulants-doacs/>. Updated January 26, 2018. Accessed May 25, 2018.
- <sup>11</sup> Konstantinides SV, Torbicki A, Agnelli G, et al. 2014 ESC guidelines on the diagnosis and management of acute pulmonary embolism. *Eur Heart J* 2014;35(43):3033-73.
- <sup>12</sup> Spirk D, Husmann M, Willenberg T, M, et al. Inconsistencies in the planning of the duration of anticoagulation among outpatients with acute deep-vein thrombosis: results from the OTIS-DVT registry. *Thromb. Haemost* 2011;105(2):239-44.
- <sup>13</sup> Bova C, Bianco A, Mascaro V, Nobile CG. Extended anticoagulation and mortality in venous thromboembolism. a meta-analysis of six randomized trials. *Thromb Res* 2016;139:22-8.

- <sup>14</sup> Connolly SJ, Eikelboom J, Joyner C, et al. Apixaban in patients with atrial fibrillation. *N Engl J Med* 2011;364(9):806-17.
- <sup>15</sup> Agnelli G, Buller HR, Cohen A, et al. Apixaban for extended treatment of venous thromboembolism. *N Engl J Med* 2013;368(8):699-708.
- <sup>16</sup> Broder, M., Neary, M. P., Chang, E., Cherepanov, D., & Katznelson, L. (2014). Treatments, complications, and healthcare utilization associated with acromegaly: a study in two large United States databases. *Pituitary*, 17(4), 333-341.
- <sup>17</sup> Blumen, H., Fitch, K., & Polkus, V. (2016). Comparison of treatment costs for breast cancer, by tumor stage and type of service. *American health & drug benefits*, 9(1), 23.
- <sup>18</sup> Crn.cancer.gov. (2018). Cancer Therapy Look-up Tables. [online] Available at: <https://crn.cancer.gov/resources/codes.html>