

Hospital Report Cards™
Mortality and Complications Outcomes
2013 Methodology

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Introduction

To help consumers evaluate and compare hospital performance, Healthgrades analyzed clinical outcomes data for virtually every hospital in the country. Analyses included Medicare-patient care records for nearly 4,500 short-term, acute care hospitals nationwide, assessing hospital performance relative to each of 28 common conditions and procedures (cohorts). The Healthgrades methodology uses multivariate logistic regression to risk adjust for patient demographic and clinical risk factors that influence patient outcomes in significant and systematic ways.

The purpose of risk adjustment is to obtain fair statistical comparisons of mortality and complication rates between hospitals while accounting for differences in underlying risk factors observed in the data among disparate populations or groups. Significant differences in demographic and clinical risk factors are found among patients treated in different hospitals; thus, it is necessary to make accurate and valid comparisons of clinical outcomes with a methodology using risk-adjustment techniques. Risk factors may include age, gender, specific procedure performed, and co-morbid conditions, such as hypertension and diabetes.

Individual risk models are constructed and tailored for each of the 28 conditions or procedures relative to each specific outcome. Model clinical outcomes reflect clinical-based measures of patient status during and after care and include in-hospital complications, or in-hospital, 30-day post-admission and 180-day post-admission mortality. In cases where Medicare data is not available for a specific condition or procedure, such as appendectomy, Healthgrades analyzed all-payer data from 19 states.

Data Acquisition

Healthgrades used the following data sources in the analysis of hospital patient records:

- Medicare inpatient data from the Medicare Provider Analysis and Review (MedPAR) database purchased from the Centers for Medicare and Medicaid Services (CMS) for years 2009 through 2011. The MedPAR data was selected for several reasons:
 - Almost every hospital in the country is included in the database, with the exception of military and Veterans Administration hospitals.
 - Accuracy is regulated; hospitals are required by law to submit complete and accurate information with substantial penalties for those that report inaccurate or incomplete data.
 - The Medicare population represents a majority of the patients for virtually all of the clinical categories studied.
- Inpatient data for the appendectomy cohort was provided by 19 states that provide all-payer state data (AZ, CA, CO, FL, IA, MA, MD, NC, NJ, NV, NY, OR, PA, RI, TX, UT, VA, WA, and WI) for years 2008 through 2010. Since the appendectomy cohort includes very few patients older than 65 years of age, all-payer state data were used to rate hospitals in those states where state data were available. Consequently, appendectomy is based exclusively on state data from years 2008 through 2010.

Healthgrades conducted a series of data quality checks to preserve the integrity of the analyses. Based on the applied integrity checks, a range of .24% to 11% of patient records were excluded from the 2009-2011 analysis, depending on the cohort. Patient records were identified for exclusion because they were determined to be miscoded or otherwise inappropriate for inclusion in the data sets used for analyses.

Examples of Healthgrades standard rules used to exclude patient records are:

- Patients who left the hospital against medical advice or who were transferred to another acute care hospital
- Patients discharged alive with a length of stay that is inconsistent with the reason for admission (e.g., a patient discharged alive with a one day length of stay for valve surgery would be excluded because this procedure requires several days for recovery)
- Patients who were still in the hospital when the Medicare claim was filed
- Patients with an invalid gender (e.g., a prostatectomy related to a female patient)

Cohort Definitions and Outcomes

Healthgrades analyzed clinical outcomes (mortality and complications) for each of 28 condition or procedure cohorts. For each, a list of specific procedures and diagnoses that define the cohort as well as a list of exclusions representing rare and/or clinically complex diagnoses and procedures that cannot be adequately risk adjusted were developed (*Appendix B*).

Inclusion criteria for cohort analyses required at least 30 cases across three years of data and at least five cases in the most current year per hospital. As a result, the number of hospitals that qualified ranged from a total low of 690 rated for peripheral vascular bypass to a total high of 4,457 rated for appendectomy.

For 18 of the cohorts, the clinical outcomes evaluated were in-hospital, 30-day post-admission, and 180-day post-admission mortality. Three of the 18 mortality rate-based cohorts used only two of the three clinical outcomes: Heart Failure and COPD were not evaluated for 30-day post admission mortality and Diabetic Acidosis and Coma was not evaluated for 180-day post admission mortality.

For 10 of the cohorts, the clinical outcome evaluated was in-hospital complications; Healthgrades clinical and coding experts define the complications for these 10 cohorts. A list of in-hospital complications by cohort can be found in *Appendix C*.

For the analyses, clinical outcomes were dichotomous:

- Complications were documented in the patient record as either present or not present.
- Mortality was documented in the patient record as either recorded as alive or deceased.

In cohorts where the clinical outcome was complications, mortality was considered a complication.

Mortality-Based Cohorts

Mortality Cohorts	
Bowel Obstruction	Neurosurgery
Chronic Obstructive Pulmonary Disease (COPD)	Pancreatitis
Coronary Interventional Procedures	Pneumonia
Diabetic Acidosis and Coma	Pulmonary Embolism
Gastrointestinal Bleed	Resection/Replacement Abdominal Aorta
Gastrointestinal Surgeries and Procedures	Respiratory Failure
Heart Attack	Sepsis
Coronary Artery Bypass Graft (CABG)	Stroke
Heart Failure	Valve Repair/Replacement Surgery

Complication-Based Cohorts

In-Hospital Complication Cohorts	
Appendectomy	Hip Fracture Treatment
Back and Neck Surgery (With Spinal Fusion)	Hip Replacement
Back and Neck Surgery (Without Spinal Fusion)	Peripheral Vascular Bypass
Carotid Surgery	Prostatectomy
Gallbladder Surgery	Total Knee Replacement

Defining In-Hospital Complications

In October of 2007 (fiscal year 2008), CMS began requiring most hospitals to provide a present on admission (POA) indicator for every diagnosis submitted. This indicator is intended to distinguish hospital-acquired conditions from those present at the time the patient was admitted to the hospital.

The summary below shows the POA indicators listed in the 2011 MedPAR file layout document* and how they were used by Healthgrades in determining in-hospital complications in the current 2013 analyses.

POA Indicator (Interpretation)	CMS Description*	Use by Healthgrades
Y (Yes, Present)	Present at the time of inpatient admission	Utilized in the risk-adjustment process
N (No, Not Present)	Not present at the time of inpatient admission	Used to identify in-hospital complications
U, [blank], Other (Unknown)	Documentation is insufficient to determine if condition was present on admission Unreported/not used—exempt from POA reporting	May require the co-occurrence of other codes to be a complication, see Records with No POA Indicator section below. If not considered a complication, it may be used in risk adjustment.
W (Clinically Undetermined)	Provider is unable to clinically determine whether condition was present on admission or not.	Not considered a complication nor used in risk adjustment

* MedPAR Limited Data Set – Hospital (National) File Layout. Also known as, Expanded Modified MedPAR File Layout. March 2011. Available from the Centers for Medicare and Medicaid Services. https://www.cms.gov/Research-Statistics-Data-and-Systems/Files-for-Order/LimitedDataSets/Downloads/LDS_MedPAR_Final_Rule_-FY11_J0312.zip.

Records With No POA Indicator

When utilizing administrative patient records, Healthgrades identifies diagnosed conditions as either pre-existing or hospital-acquired. Only the hospital-acquired conditions are considered as in-hospital complications in our analyses. To differentiate between pre-existing and hospital-acquired conditions when there is no POA indicator, we use the presence of a 900 post-operative complication code. For example, in the case where a patient record contains ICD 427.31 (Atrial Fibrillation), that code is considered a co-morbid risk factor if it occurs by itself and an in-hospital complication if there is a ICD 997.1 Cardiac Complications, NEC code also present in the patient record.

We did not require the presence of a post-operative complication code for diagnoses that were clearly hospital-acquired (i.e., heart attack in an elective procedure such as total knee replacement).

Records With POA Indicators

When there is a POA indicator present, a diagnosis is only considered an in-hospital complication if the POA indicator is set to No. This means that the condition was not present at the time of admission and was acquired during the hospitalization. Records where the POA indicator is *Unknown* were treated as described for records that have no POA indicator.

Multivariate Logistic Regression Models

For each of the 28 cohorts, individual risk models were constructed and tailored for each condition or procedure relative to the specific clinical outcome; including, in-hospital complication or in-hospital mortality, 30-day post-admission mortality, and 180-day post-admission mortality. Three of the 18 mortality rate-based cohorts used only two of the three clinical outcomes: Heart Failure and COPD were not evaluated for 30-day post admission mortality and Diabetic Acidosis and Coma was not evaluated for 180-day post admission mortality.

Healthgrades methodology uses multivariate logistic regression to adjust for patient risk factors that influence patient outcomes in significant and systematic ways. Risk factors may include age, gender, specific procedure performed, and co-morbid conditions such as hypertension, chronic renal failure, heart failure, and diabetes.

Statistically Significant Risk Factors

For each cohort, comorbid diagnoses (e.g., hypertension, chronic renal failure, anemia, and diabetes), demographic characteristics (e.g., age and gender), and specific procedures (e.g., percutaneous coronary intervention in heart bypass surgery) were classified as potential risk factors. We used logistic regression to determine which of these potential risk factors were statistically important in predicting the outcome measure (e.g., mortality). Risk factors with an odds ratio less than 1.0 were removed from the final model. All risk factors that remained in the final model were statistically significant at the $p < 0.05$ level in predicting the clinical outcome.

There were occasional exceptions to this rule, determined by statistical and clinical expert review. For example, risk factors that have been documented in the medical literature to be protective and risk factors that are part of the cohort definition remained in the model even if the odds ratio was less than one (e.g., pneumococcal pneumonia is one type of pneumonia that defines the pneumonia cohort). Complications were *not* counted as risk factors because they were considered a result of care received during the admission.

Appendix D lists the top five risk factors for each condition or procedure that were most likely (e.g., highest odds ratio) to lead to the clinical outcome (mortality or complications). They are not necessarily those with the highest volume.

The statistical models were checked for predictive ability and finalized. All of the models were predictive of the outcome being measured, with c-statistics ranging from 0.6 to 0.9. These cohort-specific and outcome-specific models were then used to estimate the probability of the outcome for each patient in the cohort (predicted probability of mortality and complications).

Adjustment for POA Fill Rate as an Additional Model Variable

For the 2013 logistic regression models, POA fill rates were included as an additional independent variable for each year of data. The POA fill rate was calculated as the percent of diagnosis codes having a known POA indicator value of Yes, No or Clinically Undetermined among patients in that cohort at that hospital. This additional risk adjustment was necessary due to the fact that critical access hospitals and some Maryland hospitals are exempt from POA reporting. Thus, these hospitals had lower rates of detectable in-hospital complications and conversely, more conditions potentially

factored into the acuity adjustment. Testing verified that the inclusion of POA fill rates in the logistic regression model adequately adjusted for the differing overall rates of complications between hospitals reporting POA and the exempt hospitals.

Hospital Performance

Once the regression models were developed, Healthgrades stratified hospital performance for each of the 28 conditions or procedures into three categories:

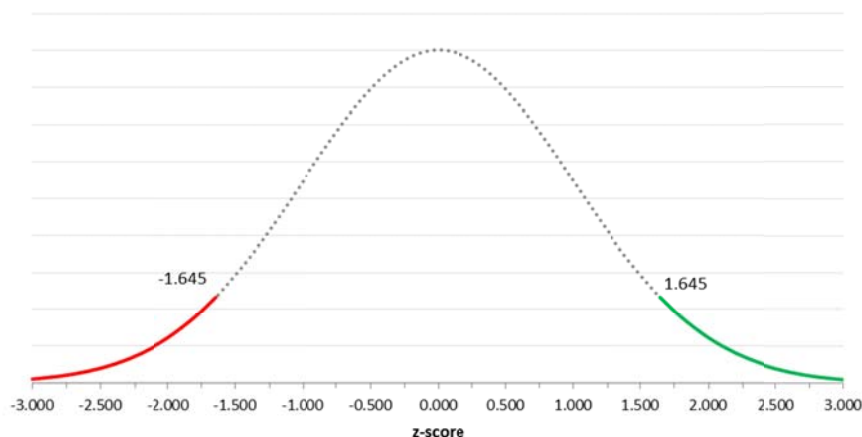
- ★★★★★ **Better Than Expected** – Actual performance was better than predicted and the difference was statistically significant.
- ★★★ **As Expected** – Actual performance was not statistically significantly different from what was predicted.
- ★ **Worse Than Expected** – Actual performance was worse than predicted and the difference was statistically significant.

Developing the Healthgrades hospital performance categories involved four steps:

1. The hospital predicted value (predicted number of deaths or complications at each hospital) was calculated by summing the individual patient record predicted values determined from logistic regression models discussed above.
2. The hospital predicted value was compared with the actual or observed value (e.g., actual number of deaths or complications at each hospital).
3. A test was conducted to determine whether the difference between the predicted and actual values was statistically significant. This test was performed to make sure that differences were very unlikely to be caused by chance alone. A z-score was used to establish an approximate 90% confidence interval.*
4. Hospital performance star-levels were determined based upon the outcome of the test for statistical significance.

*We establish a 90% confidence interval for z-score distribution with cut-offs of 1.645 standard deviations above and below the mean. The 5-star hospital performance category for a specific condition or procedure includes scores more than 1.645 standard deviations better than the mean. The 1-star hospital performance category for a specific condition or procedure includes scores more than 1.645 standard deviations worse than the mean.

**Normal distribution showing
90% confidence intervals**



Limitations of the Data Models

It must be understood that while logistic regression models may be valuable in identifying hospitals that perform better than others, one should not use this information alone to determine the quality of care provided at each hospital. The models are limited by the following factors:

- Cases may have been coded incorrectly or incompletely by the hospital;
- The models can only account for risk factors that are coded into the billing data—if a particular risk factor was not coded into the billing data, such as a patient's socioeconomic status and health behavior, then it was not accounted for with these models;
- The 2009 MedPAR inpatient data and a portion of the 2010 MedPAR inpatient data file contain only the first nine diagnoses and the first six procedure codes for an inpatient stay. For some patients, this may not be representative of the full list of codes submitted.

Please note that hospitals grouped into the 5-star category for performance in a specific cohort do not serve as a recommendation or endorsement by Healthgrades for a particular hospital; it means that the data associated with a particular hospital has met the foregoing qualifications. Individual patients should decide, in conjunction with their doctor, whether a particular hospital is suited for their unique needs.

Also note that if more than one hospital reported to CMS under a single provider ID, Healthgrades analyzed patient outcomes data for those hospitals as a single unit. Throughout this document, therefore, "hospital" refers to one hospital or a group of hospitals reporting under a single provider ID. Some hospitals that operate as a single unit submit data under multiple provider IDs. In this case, the data from the multiple provider IDs are combined and reported under the parent hospital provider ID.

Appendix A. Patient Cohort Definitions

Excluded from each cohort were patients who have had any organ transplant or a complication as a result of an organ transplant.

Appendectomy

Cohort	Inclusions	Exclusions
Appendectomy First Listed Procedure Evaluated on in-hospital complication rates	<ul style="list-style-type: none"> Laparoscopic Other open procedures 	

Cardiac Service Line

Cohort	Inclusions	Exclusions
Coronary Artery Bypass Graft (CABG) (Isolated) First Listed Procedure Evaluated on mortality rates at three time periods: <ul style="list-style-type: none"> In-hospital 30-days post-admission 180-days post-admission 	<ul style="list-style-type: none"> Coronary bypass for cardiac revascularization with: internal mammary artery or vein One or more vessels Without valve replacement or repair Can have a PCI in this stay 	<ul style="list-style-type: none"> Valve repair and replacement Aortic aneurysm repair Carotid endarterectomy Patients discharged alive with a length of stay < 1 day
Coronary Interventional Procedures (PCI) First Listed Procedure was PCI or Principal Procedure Intra-aortic balloon pump with PCI in a subsequent position Evaluated on mortality rates at three time periods: <ul style="list-style-type: none"> In-hospital 30-days post-admission 180-days post-admission 	<ul style="list-style-type: none"> Removal of coronary artery obstruction Single or multi-vessel Atherectomy or balloon angioplasty with or without thrombolytic agent Stent can be bare metal or drug eluting Can be multi-vessel 	<ul style="list-style-type: none"> Open chest Case associated with CABG or Valve in this stay
Heart Attack First Listed Diagnosis Evaluated on mortality rates at three time periods: <ul style="list-style-type: none"> In-hospital 30-days post-admission 180-days post-admission 	<ul style="list-style-type: none"> Anterior, inferior, posterior, lateral, RV infarcts <ul style="list-style-type: none"> ST elevation Non ST elevation Not otherwise specified Includes patients who receive thrombolytics, PCI, CABG, or medical management only 	<ul style="list-style-type: none"> Metastatic cancers Palliative care patients (V66.7) Respirator-dependent status (V46.11) Left ventricular assist device (V43.21) Discharge to hospice
Heart Failure First Listed Diagnosis Evaluated on mortality rates at three time periods: <ul style="list-style-type: none"> In-hospital 180-days post-admission 	<ul style="list-style-type: none"> Systolic or diastolic, combined, left, valvular, acute or chronic, decompensated or compensated 	<ul style="list-style-type: none"> Dialysis in this stay (39.95) Metastatic cancers Palliative care patients (V66.7) Respirator-dependent status (V46.11) Left ventricular assist device (V43.21) Discharge to hospice

<p>Valve Repair/Replacement Surgery Procedure at any position Evaluated on mortality rates at three time periods:</p> <ul style="list-style-type: none"> • In-hospital • 30-days post-admission • 180-days post-admission 	<ul style="list-style-type: none"> • Replacement with repair • Open repair • Aortic, mitral, pulmonary, or tricuspid • With or without CABG 	<ul style="list-style-type: none"> • Percutaneous repair • Thoracic and aortic dissections • Patients discharged alive with a length of stay < 1 day
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Critical Care Service Line

Excluded from each cohort were patients who have had any organ transplant or a complication as a result of an organ transplant.

Cohort	Inclusions	Exclusions
<p>Diabetic Acidosis and Coma First Listed Diagnosis Evaluated on mortality rates at three time periods:</p> <ul style="list-style-type: none"> • In-hospital • 30-days post-admission 	<ul style="list-style-type: none"> • With coma • Hypoglycemic shock 	<ul style="list-style-type: none"> • Metastatic cancers • Palliative care patients (V66.7) • Left ventricular assist device (V43.21) • Respirator-dependent status (V46.11) • Patients discharged alive with a length of stay < 1 day
<p>Sepsis First Listed Diagnosis Evaluated on mortality rates at three time periods:</p> <ul style="list-style-type: none"> • In-hospital • 30-days post-admission • 180-days post-admission 	<ul style="list-style-type: none"> • Salmonella septicemia • Listeriosis • Meningococemia • Streptococcal septicemia • Staphylococcal septicemia • <i>Staphylococcus aureus</i> • Pneumococcal septicemia • Septicemia due to anaerobes • Gram-negative bacteria • <i>Haemophilus influenzae</i> • <i>Escherichia coli</i> • Pseudomonas • Serratia • Unspecified organism • Herpetic septicemia • Septic shock • SIRS 	<ul style="list-style-type: none"> • Metastatic cancers • Palliative care patients (V66.7) • Left ventricular assist device (V43.21) • Patients discharged alive with a length of stay < 1 day • Discharge to hospice
<p>Pulmonary Embolism First Listed Diagnosis Evaluated on mortality rates at three time periods:</p> <ul style="list-style-type: none"> • In-hospital • 30-days post-admission • 180-days post-admission 	<ul style="list-style-type: none"> • Pulmonary embolism and infarction • Iatrogenic 	<ul style="list-style-type: none"> • Metastatic cancers • Palliative care patients (V66.7) • Left ventricular assist device (V43.21) • Patients discharged alive with a length of stay < 1 day • Discharge to hospice
<p>Respiratory Failure First Listed Diagnosis Evaluated on mortality rates at three time periods:</p> <ul style="list-style-type: none"> • In-hospital • 30-days post-admission • 180-days post-admission 	<ul style="list-style-type: none"> • Acute respiratory failure • Acute on chronic respiratory failure 	<ul style="list-style-type: none"> • Metastatic cancers • Palliative care patients (V66.7) • Left ventricular assist device (V43.21) • Discharge to hospice

Gastrointestinal Service Line

Excluded from each cohort were patients who have had any organ transplant or a complication as a result of an organ transplant.

Cohort	Inclusions	Exclusions
Bowel Obstruction First Listed Diagnosis Evaluated on mortality rates at three time periods: <ul style="list-style-type: none"> In-hospital 30-days post-admission 180-days post-admission 	<ul style="list-style-type: none"> Duodenal ulcer with obstruction Gastrojejunal ulcer with obstruction Pyloric stenosis Other obstruction of duodenum Hernia with obstruction Intestinal obstruction without hernia Gallstone ileus Intussusception 	<ul style="list-style-type: none"> Metastatic cancers Palliative care patients (V66.7) Left ventricular assist device (V43.21) Discharge to hospice Patients deceased with a length of stay < 1 day
Gallbladder Surgery First Listed Procedure Evaluated on in-hospital complication rates	<ul style="list-style-type: none"> Open or laparoscopic Partial Revision of prior gallbladder surgery 	
Gastrointestinal Bleed First Listed Diagnosis Evaluated on mortality rates at three time periods: <ul style="list-style-type: none"> In-hospital 30-days post-admission 180-days post-admission 	<ul style="list-style-type: none"> Bleeding/hemorrhage from any of the following: <ul style="list-style-type: none"> Esophageal varices Esophageal ulcer Gastric ulcer Duodenal ulcer Peptic ulcer Gastrojejunal ulcer Gastritis or duodenitis Angiodysplasia of stomach and duodenum Diverticulosis Rectum or anus Dieulafoy lesion of intestine Hematemesis Melena Hemorrhage of GI tract, unspecified 	<ul style="list-style-type: none"> Metastatic cancers Palliative care patients (V66.7) Left ventricular assist device (V43.21) Respirator-dependent status (V46.11) Discharge to hospice Patients deceased with a length of stay < 1 day
Gastrointestinal Surgery & Procedures First Listed Procedure Evaluated on mortality rates at three time periods: <ul style="list-style-type: none"> In-hospital 30-days post-admission 180-days post-admission 	<ul style="list-style-type: none"> Gastrectomies Vagotomies Gastric repairs Small and large intestine resections Small and large intestine anastomoses 	<ul style="list-style-type: none"> Primary and metastatic cancers
Pancreatitis First Listed Diagnosis Evaluated on mortality rates at three time periods: <ul style="list-style-type: none"> In-hospital 30-days post-admission 180-days post-admission 	<ul style="list-style-type: none"> Acute Chronic 	<ul style="list-style-type: none"> Metastatic cancers Palliative care patients (V66.7) Left ventricular assist device (V43.21) Respirator-dependent status (V46.11) Discharge to hospice

Neurosciences Service Line

Excluded from each cohort were patients who have had any organ transplant or a complication as a result of an organ transplant.

Cohort	Inclusions	Exclusions
<p>Stroke First Listed Diagnosis Evaluated on mortality rates at three time periods:</p> <ul style="list-style-type: none"> • In-hospital • 30-days post-admission • 180-days post-admission 	<ul style="list-style-type: none"> • Subarachnoid hemorrhage • Intracerebral hemorrhage • Intracranial hemorrhage, unspecified • Occlusion and stenosis of basilar, carotid, or vertebral artery • Cerebral thrombosis, embolism, or occlusion • Acute but ill-defined cerebrovascular disease 	<ul style="list-style-type: none"> • Metastatic cancers • Hospitals transferring more than 10% of their population • Subdural bleeds • Extradural bleeds • Palliative care patients (V66.7) • Left ventricular assist device (V43.21) • Respirator-dependent status (V46.11) • Patients deceased with a length of stay < 1 day • Patients discharged alive with a length of stay < 1 day • Discharge to hospice
<p>Neurosurgery First Listed Procedure Evaluated on mortality rates at three time periods:</p> <ul style="list-style-type: none"> • In-hospital • 30-days post-admission • 180-days post-admission 	<ul style="list-style-type: none"> • Intracranial vascular procedures for hemorrhage: <ul style="list-style-type: none"> • Aneurysm repairs • Clippings • Coilings • Intracranial angioplasties • Craniotomies • Ventricular shunts 	<ul style="list-style-type: none"> • Head trauma

Orthopedic Service Line

Excluded from each cohort were patients who have had any organ transplant or a complication as a result of an organ transplant.

Cohort	Inclusions	Exclusions
Back & Neck Surgery (except Spinal Fusion) First Listed Procedure Evaluated on in-hospital complication rates	<ul style="list-style-type: none"> • Cervical, thoracic, and/or lumbar spine laminectomy, laminoplasty, foraminectomy • Repair of vertebral fracture • Elevation of spinal bone fragments • Reduction of vertebral fracture • Removal on bony spicules • Excision or destruction of intervertebral disc • Removal of herniated nucleus pulposus • Insertion of posterior spinal motion preservation devices 	<ul style="list-style-type: none"> • Post-laminectomy syndrome: cervical, thoracic, or lumbar • Reopening of laminectomy site • Repair of joint structure • Kyphoplasty • Vertebroplasty • Patients with secondary bone cancer • Accidental injury
Back & Neck Surgery (Spinal Fusion) First Listed Procedure Evaluated on in-hospital complication rates	<ul style="list-style-type: none"> • Fusion at any level: spinal, cervical, dorsal, dorsolumbar, lumbar, lumbosacral • Single incision approach • Any number of vertebrae 	<ul style="list-style-type: none"> • Post-laminectomy syndrome: cervical, thoracic, or lumbar • Reopening of laminectomy site • Refusion • Kyphoplasty • Vertebroplasty • Patients with secondary bone cancer • Accidental injury
Hip Fracture Treatment First Listed Diagnosis Evaluated on in-hospital complication rates	<ul style="list-style-type: none"> • Femur neck fractures • Trochanteric and subtrochanteric fractures • Intertrochanteric fractures 	<ul style="list-style-type: none"> • Hip replacement/knee replacement during same hospital stay • Open skull fractures with lacerations • Open transcervical fractures • Open femur neck and trochanter fractures • Femur shaft fractures • Patients discharged alive with a length of stay < 1 day • Palliative care patients (V66.7) • Discharge to hospice • Motor vehicle accidents
Hip Replacement First Listed Procedure Evaluated on in-hospital complication rates	<ul style="list-style-type: none"> • Primary hip replacement • Bilaterals • Partial and total hip resurfacing 	<ul style="list-style-type: none"> • Knee replacement • Revision • Removal of hardware • Femur neck fractures • Accidental injury
Total Knee Replacement First Listed Procedure Evaluated on in-hospital complication rates	<ul style="list-style-type: none"> • Primary total knee replacement [bicompartamental, tricompartmental, unicompartmental (hemi-joint)] • Bilaterals 	<ul style="list-style-type: none"> • Revision • Removal of hardware • Hip replacement (total or partial); hip resurfacing • Accidental injury

Prostatectomy

Excluded from each cohort were patients who have had any organ transplant or a complication as a result of an organ transplant.

Cohort	Inclusions	Exclusions
Prostatectomy First Listed Procedure Evaluated on in-hospital complication rates	<ul style="list-style-type: none"> • Transurethral • Suprapubic • Retropubic • Radical • Perineal • Local excision of lesion of prostate 	

Pulmonary Service Line

Excluded from each cohort were patients who have had any organ transplant or a complication thereof.

Cohort	Inclusions	Exclusions
Chronic Obstructive Pulmonary Disease First Listed Diagnosis Evaluated on mortality rates at three time periods: <ul style="list-style-type: none"> • In-hospital • 180-days post-admission 	<ul style="list-style-type: none"> • Chronic bronchitis • Simple and obstructive bronchitis with and without exacerbation • Other emphysema • Chronic obstructive asthma • Bronchiectasis • Chronic airway obstruction, not elsewhere classified 	<ul style="list-style-type: none"> • Metastatic cancers • Palliative care patients (V66.7) • Left ventricular assist device (V43.21) • Respirator-dependent status (V46.11) • Discharge to hospice
Pneumonia First Listed Diagnosis Evaluated on mortality rates at three time periods: <ul style="list-style-type: none"> • In-hospital • 30-days post-admission • 180-days post-admission 	<ul style="list-style-type: none"> • Streptococcal – Group A and Group B • Staph pneumonia including methicillin resistant • Gram negative bacteria • <i>Haemophilus influenzae</i> • Mycoplasma • Chlamydia • Bronchopneumonia • Influenza with pneumonia • Legionnaire's • Organism not specified 	<ul style="list-style-type: none"> • SARS-related • Metastatic cancers • Palliative care patients (V66.7) • Left ventricular assist device (V43.21) • Discharge to hospice

Vascular Service Line

Excluded from each cohort were patients who have had any organ transplant or a complication as a result of an organ transplant.

Cohort	Inclusions	Exclusions
<p>Carotid Surgery First Listed Procedure Evaluated on in-hospital complication rates</p>	<ul style="list-style-type: none"> • Carotid endarterectomy • Endovascular graft • Percutaneous insertion of carotid stent • Percutaneous angioplasty of pre-cerebral vessels 	<ul style="list-style-type: none"> • Patients with Coronary Artery Bypass Graft (CABG) • Resection of other peripheral vessel with anastomosis • Subarachnoid, intracerebral and subdural hemorrhage
<p>Peripheral Vascular Bypass First Listed Procedure Evaluated on in-hospital complication rates</p>	<ul style="list-style-type: none"> • Peripheral vascular shunt or bypass: <ul style="list-style-type: none"> • Axillary-brachial • Axillary-femoral • Brachial • Femoral-femoral • Femoroperoneal • Femoropopliteal • Femorotibial • Popliteal • Vascular bypass not otherwise specified 	<ul style="list-style-type: none"> • Resection of upper extremity vascular procedures • Revisions
<p>Resection/Replacement Abdominal Aorta Rupture and Elective First Listed Procedure Evaluated on mortality rates at three time periods: <ul style="list-style-type: none"> • In-hospital • 30-days post-admission • 180-days post-admission </p>	<ul style="list-style-type: none"> • Excision of aneurysm and resection with anastomosis with and without replacement of the aorta • Endovascular implantation of a graft in the abdominal aorta 	<ul style="list-style-type: none"> • Aortic dissection • Patients with CABG and Valves • Incision of vessel for embolectomy or thrombectomy • Aorto-renal bypass • Aorto-iliac-femoral bypass • Angioplasty of non-coronary vessel • Resection of thoracic vessel • Patients with a combination of stenting/anastomosis procedures

Appendix B. Patient Cohorts and Related ICD-9-CM Codes

Appendectomy

Inclusions

Principal Procedure: 47.01, 47.09

Exclusions

Diagnoses (Primary or Secondary): 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63

Back and Neck Surgery (Spinal Fusion)

Inclusions

Principal Procedure: 81.00, 81.01, 81.02, 81.03, 81.04, 81.05, 81.06, 81.07, 81.08, 81.62, 81.63, 81.64

Exclusions

Diagnoses (Primary or Secondary): 198.5, 996.45, 996.46, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, E812.0, E812.1, E812.2, E812.3, E812.4, E812.5, E812.6, E812.7, E812.8, E812.9, E813.0, E813.1, E813.2, E813.3, E813.4, E813.5, E813.6, E813.7, E813.8, E813.9, E814.7, E815.0, E816.0, E816.1, E819.0, E819.9, E828.2, E849.1, E849.5, E881.0, E882, E929.0, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V45.4

Principal Diagnosis: 996.41, 996.42, 996.43

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 78.69, 81.30, 81.31, 81.32, 81.33, 81.34, 81.35, 81.36, 81.37, 81.38, 81.39, 81.65, 81.66, 84.59, 84.60, 84.61, 84.62, 84.63, 84.64, 84.65, 84.66, 84.67, 84.68, 84.69, 84.80, 84.81, 84.82, 84.83, 84.84, 84.85

Diagnosis and Procedure Combination: Procedure (Secondary) 03.02 occurring with any of the following diagnoses (Primary or Secondary): 722.80, 722.81, 722.82, 722.83

Back and Neck Surgery (except Spinal Fusion)

Inclusions

Principal Procedure: 03.09, 03.53, 80.50, 80.51, 80.59, 84.59, 84.60, 84.61, 84.62, 84.63, 84.64, 84.65, 84.80, 84.82, 84.84

Exclusions

Diagnoses (Primary or Secondary): 198.5, 996.45, 996.46, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, E812.0, E812.1, E812.2, E812.3, E812.4, E812.5, E812.6, E812.7, E812.8, E812.9, E813.0, E813.1, E813.2, E813.3, E813.4, E813.5, E813.6, E813.7, E813.8, E813.9, E814.7, E815.0, E816.0, E816.1, E819.0, E819.9, E828.2, E849.1, E849.5, E881.0, E882, E929.0, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V54.01, V54.09

Principal Diagnosis: 996.41, 996.42, 996.43, 996.47, 996.49, 996.78

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 78.49, 78.69, 81.00, 81.01, 81.02, 81.03, 81.04, 81.05, 81.06, 81.07, 81.08, 81.30, 81.31, 81.32, 81.33, 81.34, 81.35, 81.36, 81.37, 81.38, 81.39, 81.62, 81.63, 81.64, 81.65, 81.66, 84.66, 84.67, 84.68, 84.69, 84.81, 84.83, 84.85

Diagnosis and Procedure Combination: Procedure (Secondary) 03.02 occurring with any of the following diagnoses (Primary or Secondary): 722.80, 722.81, 722.82, 722.83

Bowel Obstruction

Inclusions

Principal Diagnosis: 532.01, 532.11, 532.21, 532.31, 532.41, 532.51, 532.61, 532.71, 532.91, 534.01, 534.11, 534.21, 534.31, 534.41, 534.51, 534.61, 534.71, 534.91, 537.2, 537.3, 550.10, 550.11, 550.12, 550.13, 552.00, 552.01, 552.02, 552.03, 552.1, 552.20, 552.21, 552.29, 552.8, 552.9, 560.0, 560.1, 560.2, 560.31, 560.39, 560.81, 560.89, 560.9

Exclusions

Diagnoses (Primary or Secondary): 196.0, 196.1, 196.2, 196.3, 196.5, 196.6, 196.8, 196.9, 197.0, 197.1, 197.2, 197.3, 197.4, 197.5, 197.6, 197.7, 197.8, 198.0, 198.1, 198.2, 198.3, 198.4, 198.5, 198.6, 198.7, 198.81, 198.82, 198.89, 203.02, 203.12, 203.82, 204.02, 204.12, 204.22, 204.82, 204.92, 205.02, 205.12, 205.22, 205.82, 205.92, 206.02, 206.12, 206.22, 206.82, 206.92, 207.02, 207.12, 207.22, 207.82, 208.02, 208.12, 208.22, 208.82, 208.92, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V43.21, V66.7

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63, 50.59

Carotid Surgery

Inclusions

Principal Procedure: 00.61, 00.63, 38.12, 39.74

Exclusions

Diagnoses (Primary or Secondary): 430, 431, 432.1, 432.9, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9

Procedures (Primary or Secondary): 36.10, 36.11, 36.12, 36.13, 36.14, 36.15, 36.16, 36.17, 36.19, 37.51, 37.52, 37.53, 37.54, 37.62, 37.63, 38.08, 38.16, 38.18, 38.36, 39.24, 39.25, 39.29, 39.59, 39.90

Chronic Obstructive Pulmonary Disease (COPD)

Inclusions

Principal Diagnosis: 91.1, 491.20, 491.21, 491.22, 491.8, 491.9, 492.0, 492.8, 493.20, 493.21, 493.22, 494.0, 494.1, 496

Exclusions

Diagnoses (Primary or Secondary): 196.0, 196.1, 196.2, 196.3, 196.5, 196.6, 196.8, 196.9, 197.0, 197.1, 197.2, 197.3, 197.4, 197.5, 197.6, 197.7, 197.8, 198.0, 198.1, 198.2, 198.3, 198.4, 198.5, 198.6, 198.7, 198.81, 198.82, 198.89, 203.02, 203.12, 203.82, 204.02, 204.12, 204.22, 204.82, 204.92, 205.02, 205.12, 205.22, 205.82, 205.92, 206.02, 206.12, 206.22, 206.82, 206.92, 207.02, 207.12, 207.22, 207.82, 208.02, 208.12, 208.22, 208.82, 208.92, 480.3, 480.8, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V43.21, V46.11, V66.7

Procedures (Primary or Secondary): 33.51, 33.52, 37.51, 37.52, 37.53, 37.54, 37.62, 37.63

Coronary Artery Bypass Surgery (CABG)

Inclusions

Principal Procedure: 36.10, 36.11, 36.12, 36.13, 36.14, 36.15, 36.16, 36.19

Exclusions

Diagnoses (Primary or Secondary): 414.06, 414.07, 441.00, 441.01, 441.02, 441.03, 441.2, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9

Procedures (Primary or Secondary): 35.10, 35.11, 35.12, 35.13, 35.14, 35.20, 35.21, 35.22, 35.23, 35.24, 35.25, 35.26, 35.27, 35.28, 35.33, 35.55, 35.96, 35.97, 36.31, 36.32, 36.33, 36.34, 37.51, 37.52, 37.53, 37.54, 37.62, 37.63, 38.12, 38.34, 38.44, 38.64, 39.71

Coronary Interventional Procedures

Inclusions

Principal Procedure: 00.66, 36.06, 36.07, 36.09
Principal Procedure (only when occurs with 00.66,36.06,36.07,36.09): 37.61

Exclusions

Diagnoses (Primary or Secondary): 414.06, 414.07, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9
Procedures (Primary or Secondary): 35.10, 35.11, 35.12, 35.13, 35.14, 35.20, 35.21, 35.22, 35.23, 35.24, 35.25, 35.26, 35.27, 35.28, 36.10, 36.11, 36.12, 36.13, 36.14, 36.15, 36.16, 36.19, 37.51, 37.52, 37.53, 37.54, 37.62, 37.63

Diabetic Acidosis and Coma

Inclusions

Principal Diagnosis: 250.10, 250.11, 250.12, 250.13, 250.20, 250.21, 250.22, 250.23, 250.30, 250.31, 250.32, 250.33, 250.80, 250.81, 250.82, 250.83

Exclusions

Diagnoses (Primary or Secondary): 196.0, 196.1, 196.2, 196.3, 196.5, 196.6, 196.8, 196.9, 197.0, 197.1, 197.2, 197.3, 197.4, 197.5, 197.6, 197.7, 197.8, 198.0, 198.1, 198.2, 198.3, 198.4, 198.5, 198.6, 198.7, 198.81, 198.82, 198.89, 203.02, 203.12, 203.82, 204.02, 204.12, 204.22, 204.82, 204.92, 205.02, 205.12, 205.22, 205.82, 205.92, 206.02, 206.12, 206.22, 206.82, 206.92, 207.02, 207.12, 207.22, 207.82, 208.02, 208.12, 208.22, 208.82, 208.92, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V43.21, V46.11, V66.7
Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63

Gallbladder Surgery

Inclusions

Principal Procedure: 51.21, 51.22, 51.23, 51.24

Exclusions

Diagnoses (Primary or Secondary): 156.0, 197.7, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9
Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63

Gastrointestinal Bleed

Inclusions

Principal Diagnosis: 456.0, 456.20, 530.20, 530.21, 530.7, 530.82, 531.00, 531.01, 531.20, 531.21, 531.40, 531.41, 531.60, 531.61, 532.00, 532.01, 532.20, 532.21, 532.40, 532.41, 532.60, 532.61, 533.00, 533.01, 533.20, 533.21, 533.40, 533.41, 533.60, 533.61, 534.00, 534.01, 534.20, 534.21, 534.40, 534.41, 534.60, 534.61, 535.01, 535.11, 535.21, 535.31, 535.41, 535.51, 535.61, 537.83, 537.84, 562.02, 562.03, 562.12, 562.13, 569.3, 569.82, 569.85, 569.86, 578.0, 578.1, 578.9

Exclusions

Diagnoses (Primary or Secondary): 196.0, 196.1, 196.2, 196.3, 196.5, 196.6, 196.8, 196.9, 197.0, 197.1, 197.2, 197.3, 197.4, 197.5, 197.6, 197.7, 197.8, 198.0, 198.1, 198.2, 198.3, 198.4, 198.5, 198.6, 198.7, 198.81, 198.82, 198.89, 203.02, 203.12, 203.82, 204.02, 204.12, 204.22, 204.82, 204.92, 205.02, 205.12, 205.22, 205.82, 205.92, 206.02, 206.12, 206.22, 206.82, 206.92, 207.02, 207.12, 207.22, 207.82, 208.02, 208.12, 208.22, 208.82, 208.92, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V43.21, V46.11, V66.7
Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63

Gastrointestinal Surgeries and Procedures

Inclusions

Principal Procedure: 43.5, 43.6, 43.7, 43.81, 43.89, 43.91, 43.99, 44.00, 44.01, 44.02, 44.03, 44.40, 44.41, 44.42, 44.63, 44.64, 44.65, 44.66, 44.69, 45.61, 45.62, 45.63, 45.71, 45.72, 45.73, 45.74, 45.75, 45.76, 45.79, 45.8, 45.82, 45.83, 45.90, 45.91, 45.92, 45.93, 45.94, 45.95

Exclusions

Diagnoses (Primary or Secondary): 151.0, 151.1, 151.2, 151.3, 151.4, 151.5, 151.6, 151.8, 151.9, 152.0, 152.1, 152.2, 152.3, 152.8, 152.9, 153.0, 153.1, 153.2, 153.3, 153.4, 153.5, 153.6, 153.7, 153.8, 153.9, 154.0, 154.1, 154.2, 154.3, 154.8, 155.0, 155.1, 155.2, 156.0, 156.1, 156.2, 156.8, 156.9, 157.0, 157.1, 157.2, 157.3, 157.4, 157.8, 157.9, 158.0, 158.8, 158.9, 159.0, 159.1, 159.8, 159.9, 196.0, 196.1, 196.2, 196.3, 196.5, 196.6, 196.8, 196.9, 197.0, 197.1, 197.2, 197.3, 197.4, 197.5, 197.6, 197.7, 197.8, 198.0, 198.1, 198.2, 198.3, 198.4, 198.5, 198.6, 198.7, 198.81, 198.82, 198.89, 203.02, 203.12, 203.82, 204.02, 204.12, 204.22, 204.82, 204.92, 205.02, 205.12, 205.22, 205.82, 205.92, 206.02, 206.12, 206.22, 206.82, 206.92, 207.02, 207.12, 207.22, 207.82, 208.02, 208.12, 208.22, 208.82, 208.92, 209.00, 209.01, 209.02, 209.03, 209.10, 209.11, 209.12, 209.13, 209.14, 209.15, 209.16, 209.17, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9

Heart Attack

Inclusions

Principal Diagnosis: 410.01, 410.11, 410.21, 410.31, 410.41, 410.51, 410.61, 410.71, 410.81, 410.91

Exclusions

Diagnoses (Primary or Secondary): 196.0, 196.1, 196.2, 196.3, 196.5, 196.6, 196.8, 196.9, 197.0, 197.1, 197.2, 197.3, 197.4, 197.5, 197.6, 197.7, 197.8, 198.0, 198.1, 198.2, 198.3, 198.4, 198.5, 198.6, 198.7, 198.81, 198.82, 198.89, 203.02, 203.12, 203.82, 204.02, 204.12, 204.22, 204.82, 204.92, 205.02, 205.12, 205.22, 205.82, 205.92, 206.02, 206.12, 206.22, 206.82, 206.92, 207.02, 207.12, 207.22, 207.82, 208.02, 208.12, 208.22, 208.82, 208.92, 414.06, 414.07, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V43.21, V46.11, V66.7

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63

Heart Failure

Inclusions

Principal Diagnosis: 398.91, 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 428.0, 428.1, 428.20, 428.21, 428.22, 428.23, 428.30, 428.31, 428.32, 428.33, 428.40, 428.41, 428.42, 428.43, 428.9

Exclusions

Diagnoses (Primary or Secondary): 196.0, 196.1, 196.2, 196.3, 196.5, 196.6, 196.8, 196.9, 197.0, 197.1, 197.2, 197.3, 197.4, 197.5, 197.6, 197.7, 197.8, 198.0, 198.1, 198.2, 198.3, 198.4, 198.5, 198.6, 198.7, 198.81, 198.82, 198.89, 203.02, 203.12, 203.82, 204.02, 204.12, 204.22, 204.82, 204.92, 205.02, 205.12, 205.22, 205.82, 205.92, 206.02, 206.12, 206.22, 206.82, 206.92, 207.02, 207.12, 207.22, 207.82, 208.02, 208.12, 208.22, 208.82, 208.92, 414.06, 414.07, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V43.21, V46.11, V66.7

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63, 39.95, 55.69

Hip Fracture Treatment

Inclusions

Principal Diagnosis: 820.00, 820.02, 820.03, 820.09, 820.20, 820.21, 820.22, 820.8

Exclusions

Diagnoses (Primary or Secondary): 733.14, 733.15, 733.42, 733.82, 733.96, 800.61, 800.62, 800.63, 800.64, 800.65, 800.66, 800.69, 820.01, 820.10, 820.11, 820.12, 820.13, 820.19, 820.30, 820.31, 820.32, 820.9, 821.00, 821.01, 821.10, 821.11, 821.20, 821.21, 821.22, 821.23, 821.29, 821.30, 821.31, 821.32, 821.33, 821.39, 996.40, 996.41, 996.42, 996.43, 996.44, 996.45, 996.46, 996.47, 996.49, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, E810.0, E810.1, E810.2, E810.3, E810.4, E810.5, E810.6, E810.7, E810.8, E810.9, E811.0, E811.1, E811.2, E811.3, E811.4, E811.5, E811.6, E811.7, E811.8, E811.9, E812.0, E812.1, E812.2, E812.3, E812.4, E812.5, E812.6, E812.7, E812.8, E812.9, E813.0, E813.1, E813.2, E813.3, E813.4, E813.5, E813.6, E813.7, E813.8, E813.9, E814.0, E814.1, E814.2, E814.3, E814.4, E814.5, E814.6, E814.7, E814.8, E814.9, E815.0, E815.1, E815.2, E815.3, E815.4, E815.5, E815.6, E815.7, E815.8, E815.9, E816.0, E816.1, E816.2, E816.3, E816.4, E816.5, E816.6, E816.7, E816.8, E816.9, E817.0, E817.1, E817.2, E817.3, E817.4, E817.5, E817.6, E817.7, E817.8, E817.9, E818.0, E818.1, E818.2, E818.3, E818.4, E818.5, E818.6, E818.7, E818.8, E818.9, E819.0, E819.1, E819.2, E819.3, E819.4, E819.5, E819.6, E819.7, E819.8, E819.9, E820.0, E820.1, E820.2, E820.3, E820.4, E820.5, E820.6, E820.7, E820.8, E820.9, E821.0, E821.1, E821.2, E821.3, E821.4, E821.5, E821.6, E821.7, E821.8, E821.9, E822.0, E822.1, E822.2, E822.3, E822.4, E822.5, E822.6, E822.7, E822.8, E822.9, E823.0, E823.1, E823.2, E823.3, E823.4, E823.5, E823.6, E823.7, E823.8, E823.9, E824.0, E824.1, E824.2, E824.3, E824.4, E824.5, E824.6, E824.7, E824.8, E824.9, E825.0, E825.1, E825.2, E825.3, E825.4, E825.5, E825.6, E825.7, E825.8, E825.9, E885.0, E919.5, E929.0, E958.5, E988.5, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V66.7

Principal Diagnosis: 996.78

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 78.65, 78.66, 78.67, 80.05, 80.06, 81.54, 81.55

Procedures (Secondary only): 81.51, 81.53

Hip Replacement

Inclusions

Principal Procedure: 00.85, 00.86, 00.87, 81.51

Exclusions

Diagnoses (Primary or Secondary): 733.14, 820.00, 820.02, 820.03, 820.09, 820.20, 820.21, 820.22, 820.8, 996.45, 996.46, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, E800.0, E800.1, E800.2, E800.3, E800.8, E800.9, E801.0, E801.1, E801.2, E801.3, E801.8, E801.9, E802.0, E802.1, E802.2, E802.3, E802.8, E802.9, E803.0, E803.1, E803.2, E803.3, E803.8, E803.9, E804.0, E804.1, E804.2, E804.3, E804.8, E804.9, E805.0, E805.1, E805.2, E805.3, E805.8, E805.9, E806.0, E806.1, E806.2, E806.3, E806.8, E806.9, E807.0, E807.1, E807.2, E807.3, E807.8, E807.9, E810.0, E810.1, E810.2, E810.3, E810.4, E810.5, E810.6, E810.7, E810.8, E810.9, E811.0, E811.1, E811.2, E811.3, E811.4, E811.5, E811.6, E811.7, E811.8, E811.9, E812.0, E812.1, E812.2, E812.3, E812.4, E812.5, E812.6, E812.7, E812.8, E812.9, E813.0, E813.1, E813.2, E813.3, E813.4, E813.5, E813.6, E813.7, E813.8, E813.9, E814.0, E814.1, E814.2, E814.3, E814.4, E814.5, E814.6, E814.7, E814.8, E814.9, E815.0, E815.1, E815.2, E815.3, E815.4, E815.5, E815.6, E815.7, E815.8, E815.9, E816.0, E816.1, E816.2, E816.3, E816.4, E816.5, E816.6, E816.7, E816.8, E816.9, E817.0, E817.1, E817.2, E817.3, E817.4, E817.5, E817.6, E817.7, E817.8, E817.9, E818.0, E818.1, E818.2, E818.3, E818.4, E818.5, E818.6, E818.7, E818.8, E818.9, E819.0, E819.1, E819.2, E819.3, E819.4, E819.5, E819.6, E819.7, E819.8, E819.9, E820.0, E820.1, E820.2, E820.3, E820.4, E820.5, E820.6, E820.7, E820.8, E820.9, E821.0, E821.1, E821.2, E821.3, E821.4, E821.5, E821.6, E821.7, E821.8, E821.9, E822.0, E822.1, E822.2, E822.3, E822.4, E822.5, E822.6, E822.7, E822.8, E822.9, E823.0, E823.1, E823.2, E823.3, E823.4, E823.5, E823.6, E823.7, E823.8, E823.9, E824.0, E824.1, E824.2, E824.3, E824.4, E824.5, E824.6, E824.7, E824.8, E824.9, E825.0, E825.1, E825.2, E825.3, E825.4, E825.5, E825.6, E825.7, E825.8, E825.9, E826.0, E826.1, E826.2, E826.3, E826.4, E826.8, E826.9, E827.0, E827.2, E827.3, E827.4, E827.8, E827.9, E828.0, E828.2, E828.4, E828.8, E828.9, E829.0, E829.4, E829.8, E829.9, E830.0, E830.1, E830.2, E830.3, E830.4, E830.5, E830.6, E830.8, E830.9, E831.0, E831.1, E831.2, E831.3, E831.4, E831.5, E831.6, E831.8, E832.0, E832.1, E832.2, E832.3, E832.4, E832.5, E832.6, E832.8, E832.9, E833.0, E833.1, E833.2, E833.3, E833.4, E833.5, E833.6, E833.8, E833.9, E834.0, E834.1, E834.2, E834.3, E834.4, E834.5, E834.6, E834.8, E834.9, E835.0, E835.1, E835.2, E835.3, E835.4, E835.5, E835.6, E835.8, E835.9, E836.0, E836.1, E836.2, E836.3, E836.4, E836.5, E836.6, E836.8, E836.9, E837.0, E837.1, E837.2, E837.3, E837.4, E837.5, E837.6, E837.8, E837.9, E838.0, E838.1, E838.2, E838.3, E838.4, E838.5, E838.6, E838.8, E838.9, E840.0, E840.1, E840.2, E840.3, E840.4, E840.5, E840.6, E840.7, E840.8, E840.9, E841.0, E841.1, E841.2, E841.3, E841.4, E841.5, E841.6, E841.7, E841.8, E841.9, E842.6, E842.7, E842.8, E842.9, E843.0, E843.1, E843.2, E843.3, E843.4, E843.5, E843.6, E843.7, E843.8, E843.9, E844.0, E844.1, E844.2, E844.3, E844.4, E844.5, E844.6, E844.7, E844.8, E844.9, E845.0, E845.8, E845.9, E846, E847, E848, E849.0, E849.1, E849.2, E849.3, E849.4, E849.5, E849.6, E849.7, E849.8, E849.9, E880.0, E880.1, E880.9, E881.0, E881.1, E882, E883.0, E883.1, E883.2, E883.9, E884.0, E884.1, E884.2, E884.3, E884.4, E884.5, E884.6, E884.9, E885.0, E885.1, E885.2, E885.3, E885.4, E885.9, E886.0, E886.9, E887, E888.0, E888.1, E888.8, E888.9, E890.0, E890.8, E891.8, E916, E917.0, E917.1, E917.2, E917.3, E917.4, E917.5, E917.6, E917.7, E917.8, E917.9, E918, E919.0, E919.1, E919.2, E919.3, E919.4, E919.5, E919.6, E919.7, E919.8, E919.9, E920.0, E920.1, E920.2, E920.3, E920.4, E920.5, E920.8, E920.9, E921.0, E921.1, E921.8, E921.9, E922.0, E922.1, E922.2, E922.3, E922.4, E922.5, E922.8, E922.9, E923.0, E923.1, E923.2, E923.8, E923.9, E928.8, E928.9, E929.0, E929.1, E929.2, E929.3, E929.4, E929.5, E929.8, E929.9, E955.0, E955.1, E955.2, E955.3, E955.4, E955.5, E955.6, E955.7, E955.9, E956, E957.0, E957.1, E957.2, E957.9, E958.0, E958.5, E958.6, E960.0, E965.0, E965.1, E965.2, E965.3, E965.4, E965.5, E965.6, E965.7, E965.8, E965.9, E966, E968.1, E968.2, E968.5, E968.6, E969, E970, E973, E974, E977, E985.0, E985.1, E985.2, E985.3, E985.4, E985.5, E985.6, E985.7, E986, E987.0, E987.1, E987.2, E987.9, E988.0, E988.5, E989, V15.5, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V58.43, V58.49

Principal Diagnosis: 996.41, 996.43

Procedures (Primary or Secondary): 00.70, 00.71, 00.72, 00.73, 00.80, 00.81, 00.82, 00.83, 00.84, 37.51, 37.52, 37.53, 37.54, 78.65, 78.67, 80.05, 80.06, 81.53, 81.54, 81.55

Neurosurgery

Inclusions

Principal Procedure: 01.12, 01.14, 01.23, 01.24, 01.25, 01.28, 01.31, 01.39, 01.51, 01.59, 02.02, 02.03, 02.05, 02.06, 02.07, 02.12, 02.22, 02.31, 02.32, 02.33, 02.34, 02.39, 02.42, 02.43, 02.93, 04.01, 04.41, 38.11, 38.81

Principal Procedure (only when occurs when the primary diagnosis is one of the following 430, 431, 432.0, 432.1, 433.01, 433.11, 433.21, 433.31, 433.81, 433.91, 434.00, 434.01, 434.10, 434.11, 434.90, 434.91, 437.3): 00.62, 39.51, 39.52, 39.53, 39.72, 39.74, 39.75, 39.76, 39.79

Exclusions

Diagnoses (Primary or Secondary): 800.00, 800.01, 800.02, 800.03, 800.04, 800.05, 800.06, 800.09, 800.10, 800.11, 800.12, 800.13, 800.14, 800.15, 800.16, 800.19, 800.20, 800.21, 800.22, 800.23, 800.24, 800.25, 800.26, 800.29, 800.30, 800.31, 800.32, 800.33, 800.34, 800.35, 800.36, 800.39, 800.40, 800.41, 800.42, 800.43, 800.44, 800.45, 800.46, 800.49, 800.50, 800.51, 800.52, 800.53, 800.54, 800.55, 800.56, 800.59, 800.60, 800.61, 800.62, 800.63, 800.64, 800.65, 800.66, 800.69, 800.70, 800.71, 800.72, 800.73, 800.74, 800.75, 800.76, 800.79, 800.80, 800.81, 800.82, 800.83, 800.84, 800.85, 800.86, 800.89, 800.90, 800.91, 800.92, 800.93, 800.94, 800.95, 800.96, 800.99, 801.00, 801.01, 801.02, 801.03, 801.04, 801.05, 801.06, 801.09, 801.10, 801.11, 801.12, 801.13, 801.14, 801.15, 801.16, 801.19, 801.20, 801.21, 801.22, 801.23, 801.24, 801.25, 801.26, 801.29, 801.30, 801.31, 801.32, 801.33, 801.34, 801.35, 801.36, 801.39, 801.40, 801.41, 801.42, 801.43, 801.44, 801.45, 801.46, 801.49, 801.50, 801.51, 801.52, 801.53, 801.54, 801.55, 801.56, 801.59, 801.60, 801.61, 801.62, 801.63, 801.64, 801.65, 801.66, 801.69, 801.70, 801.71, 801.72, 801.73, 801.74, 801.75, 801.76, 801.79, 801.80, 801.81, 801.82, 801.83, 801.84, 801.85, 801.86, 801.89, 801.90, 801.91, 801.92, 801.93, 801.94, 801.95, 801.96, 801.99, 802.0, 802.1, 802.20, 802.21, 802.22, 802.23, 802.24, 802.25, 802.26, 802.27, 802.28, 802.29, 802.30, 802.31, 802.32, 802.33, 802.34, 802.35, 802.36, 802.37, 802.38, 802.39, 802.4, 802.5, 802.6, 802.7, 802.8, 802.9, 803.00, 803.01, 803.02, 803.03, 803.04, 803.05, 803.06, 803.09, 803.10, 803.11, 803.12, 803.13, 803.14, 803.15, 803.16, 803.19, 803.20, 803.21, 803.22, 803.23, 803.24, 803.25, 803.26, 803.29, 803.30, 803.31, 803.32, 803.33, 803.34, 803.35, 803.36, 803.39, 803.40, 803.41, 803.42, 803.43, 803.44, 803.45, 803.46, 803.49, 803.50, 803.51, 803.52, 803.53, 803.54, 803.55, 803.56, 803.59, 803.60, 803.61, 803.62, 803.63, 803.64, 803.65, 803.66, 803.69, 803.70, 803.71, 803.72, 803.73, 803.74, 803.75, 803.76, 803.79, 803.80, 803.81, 803.82, 803.83, 803.84, 803.85, 803.86, 803.89, 803.90, 803.91, 803.92, 803.93, 803.94, 803.95, 803.96, 803.99, 804.00, 804.01, 804.02, 804.03, 804.04, 804.05, 804.06, 804.09, 804.10, 804.11, 804.12, 804.13, 804.14, 804.15, 804.16, 804.19, 804.20, 804.21, 804.22, 804.23, 804.24, 804.25, 804.26, 804.29, 804.30, 804.31, 804.32, 804.33, 804.34, 804.35, 804.36, 804.39, 804.40, 804.41, 804.42, 804.43, 804.44, 804.45, 804.46, 804.49, 804.50, 804.51, 804.52, 804.53, 804.54, 804.55, 804.56, 804.59, 804.60, 804.61, 804.62, 804.63, 804.64, 804.65, 804.66, 804.69, 804.70, 804.71, 804.72, 804.73, 804.74, 804.75, 804.76, 804.79, 804.80, 804.81, 804.82, 804.83, 804.84, 804.85, 804.86, 804.89, 804.90, 804.91, 804.92, 804.93, 804.94, 804.95, 804.96, 804.99, 805.00, 805.01, 805.02, 805.03, 805.04, 805.05, 805.06, 805.07, 805.08, 805.10, 805.11, 805.12, 805.13, 805.14, 805.15, 805.16, 805.17, 805.18, 806.00, 806.01, 806.02, 806.03, 806.04, 806.05, 806.06, 806.07, 806.08, 806.09, 806.10, 806.11, 806.12, 806.13, 806.14, 806.15, 806.16, 806.17, 806.18, 806.19, 850.0, 850.1, 850.11, 850.12, 850.2, 850.3, 850.4, 850.5, 850.9, 851.00, 851.01, 851.02, 851.03, 851.04, 851.05, 851.06, 851.09, 851.10, 851.11, 851.12, 851.13, 851.14, 851.15, 851.16, 851.19, 851.20, 851.21, 851.22, 851.23, 851.24, 851.25, 851.26, 851.29, 851.30, 851.31, 851.32, 851.33, 851.34, 851.35, 851.36, 851.39, 851.40, 851.41, 851.42, 851.43, 851.44, 851.45, 851.46, 851.49, 851.50, 851.51, 851.52, 851.53, 851.54, 851.55, 851.56, 851.59, 851.60, 851.61, 851.62, 851.63, 851.64, 851.65, 851.66, 851.69, 851.70, 851.71, 851.72, 851.73, 851.74, 851.75, 851.76, 851.79, 851.80, 851.81, 851.82, 851.83, 851.84, 851.85, 851.86, 851.89, 851.90, 851.91, 851.92, 851.93, 851.94, 851.95, 851.96, 851.99, 852.00, 852.01, 852.02, 852.03, 852.04, 852.05, 852.06, 852.09, 852.10, 852.11, 852.12, 852.13, 852.14, 852.15, 852.16, 852.19, 852.20, 852.21, 852.22, 852.23, 852.24, 852.25, 852.26, 852.29, 852.30, 852.31, 852.32, 852.33, 852.34, 852.35, 852.36, 852.39, 852.40, 852.41, 852.42, 852.43, 852.44, 852.45, 852.46, 852.49, 852.50, 852.51, 852.52, 852.53, 852.54, 852.55, 852.56, 852.59, 853.00, 853.01, 853.02, 853.03, 853.04, 853.05, 853.06, 853.09, 853.10, 853.11, 853.12, 853.13, 853.14, 853.15, 853.16, 853.19, 854.00, 854.01, 854.02, 854.03, 854.04, 854.05, 854.06, 854.09, 854.10, 854.11, 854.12, 854.13, 854.14, 854.15, 854.16, 854.19, 950.0, 950.1, 950.2, 950.3, 950.9, 951.0, 951.1, 951.2, 951.3, 951.4, 951.5, 951.6, 951.7, 951.8, 951.9, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V66.7

Procedures (Primary or Secondary): 37.51

Pancreatitis

Inclusions

Principal Diagnosis: 577.0, 577.1

Exclusions

Diagnoses (Primary or Secondary): 196.0, 196.1, 196.2, 196.3, 196.5, 196.6, 196.8, 196.9, 197.0, 197.1, 197.2, 197.3, 197.4, 197.5, 197.6, 197.7, 197.8, 198.0, 198.1, 198.2, 198.3, 198.4, 198.5, 198.6, 198.7, 198.81, 198.82, 198.89, 203.02, 203.12, 203.82, 204.02, 204.12, 204.22, 204.82, 204.92, 205.02, 205.12, 205.22, 205.82, 205.92, 206.02, 206.12, 206.22, 206.82, 206.92, 207.02, 207.12, 207.22, 207.82, 208.02, 208.12, 208.22, 208.82, 208.92, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V43.21, V46.11, V66.7

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63

Peripheral Vascular Bypass

Inclusions

Principal Diagnosis: 250.60, 250.61, 250.62, 250.63, 250.70, 250.71, 250.72, 250.73, 250.80, 250.81, 250.82, 250.83, 440.20, 440.21, 440.22, 440.23, 440.24, 440.29, 440.30, 440.32, 442.2, 442.3, 443.89, 443.9, 444.22, 444.81, 445.02, 447.1, 681.10, 682.6, 682.7, 686.8, 707.10, 707.12, 707.13, 707.14, 707.15, 707.19, 707.8, 730.06, 730.07, 730.16, 730.17, 730.18, 730.26, 730.27, 785.4, 902.53, 904.41

Principal Procedure: 39.29

Exclusions

Diagnoses (Primary or Secondary): 440.31, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9

Principal Diagnosis: 445.01, 996.74

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63, 39.25, 39.49

Pneumonia

Inclusions

Principal Diagnosis: 481, 482.0, 482.1, 482.2, 482.30, 482.31, 482.32, 482.39, 482.40, 482.41, 482.42, 482.49, 482.81, 482.82, 482.83, 482.84, 482.89, 482.9, 483.0, 483.1, 483.8, 485, 486, 487.0

Exclusions

Diagnoses (Primary or Secondary): 196.0, 196.1, 196.2, 196.3, 196.5, 196.6, 196.8, 196.9, 197.0, 197.1, 197.2, 197.3, 197.4, 197.5, 197.6, 197.7, 197.8, 198.0, 198.1, 198.2, 198.3, 198.4, 198.5, 198.6, 198.7, 198.81, 198.82, 198.89, 203.02, 203.12, 203.82, 204.02, 204.12, 204.22, 204.82, 204.92, 205.02, 205.12, 205.22, 205.82, 205.92, 206.02, 206.12, 206.22, 206.82, 206.92, 207.02, 207.12, 207.22, 207.82, 208.02, 208.12, 208.22, 208.82, 208.92, 480.3, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V43.21, V46.11, V66.7

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63

Prostatectomy

Inclusions

Principal Procedure: 60.21, 60.29, 60.3, 60.4, 60.5, 60.61, 60.62, 60.69

Exclusions

Diagnoses (Primary or Secondary): 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63

Pulmonary Embolism**Inclusions**

Principal Diagnosis: 415.11, 415.19

Exclusions

Diagnoses (Primary or Secondary): 196.0, 196.1, 196.2, 196.3, 196.5, 196.6, 196.8, 196.9, 197.0, 197.1, 197.2, 197.3, 197.4, 197.5, 197.6, 197.7, 197.8, 198.0, 198.1, 198.2, 198.3, 198.4, 198.5, 198.6, 198.7, 198.81, 198.82, 198.89, 203.02, 203.12, 203.82, 204.02, 204.12, 204.22, 204.82, 204.92, 205.02, 205.12, 205.22, 205.82, 205.92, 206.02, 206.12, 206.22, 206.82, 206.92, 207.02, 207.12, 207.22, 207.82, 208.02, 208.12, 208.22, 208.82, 208.92, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V43.21, V66.7

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63

Resection / Replacement of Abdominal Aorta**Inclusions**

Principal Procedure: 38.34, 38.44, 39.71

Exclusions

Diagnoses (Primary or Secondary): 441.00, 441.01, 441.02, 441.03, 441.1, 441.2, 441.6, 441.7, 441.9, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9

Procedures (Primary or Secondary): 00.61, 35.10, 35.11, 35.12, 35.13, 35.14, 35.20, 35.21, 35.22, 35.23, 35.24, 35.25, 35.26, 35.27, 35.28, 36.10, 36.11, 36.12, 36.13, 36.14, 36.15, 36.16, 36.17, 36.19, 37.51, 37.52, 37.53, 37.54, 37.62, 37.63, 38.08, 38.16, 38.18, 38.36, 38.45, 38.64, 39.59

Procedures (Secondary only): 38.34, 38.44

Respiratory Failure**Inclusions**

Principal Diagnosis: 518.81, 518.84

Exclusions

Diagnoses (Primary or Secondary): 196.0, 196.1, 196.2, 196.3, 196.5, 196.6, 196.8, 196.9, 197.0, 197.1, 197.2, 197.3, 197.4, 197.5, 197.6, 197.7, 197.8, 198.0, 198.1, 198.2, 198.3, 198.4, 198.5, 198.6, 198.7, 198.81, 198.82, 198.89, 203.02, 203.12, 203.82, 204.02, 204.12, 204.22, 204.82, 204.92, 205.02, 205.12, 205.22, 205.82, 205.92, 206.02, 206.12, 206.22, 206.82, 206.92, 207.02, 207.12, 207.22, 207.82, 208.02, 208.12, 208.22, 208.82, 208.92, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V43.21, V66.7

Procedures (Primary or Secondary): 33.51, 37.51, 37.52, 37.53, 37.54, 50.51

Sepsis**Inclusions**

Principal Diagnosis: 003.1, 027.0, 036.2, 036.3, 038.0, 038.10, 038.11, 038.12, 038.19, 038.2, 038.3, 038.40, 038.41, 038.42, 038.43, 038.44, 038.49, 038.8, 038.9, 785.52

Exclusions

Diagnoses (Primary or Secondary): 196.0, 196.1, 196.2, 196.3, 196.5, 196.6, 196.8, 196.9, 197.0, 197.1, 197.2, 197.3, 197.4, 197.5, 197.6, 197.7, 197.8, 198.0, 198.1, 198.2, 198.3, 198.4, 198.5, 198.6, 198.7, 198.81, 198.82, 198.89, 203.00, 203.02, 203.12, 203.82, 204.02, 204.10, 204.12, 204.22, 204.82, 204.92, 205.02, 205.12, 205.22, 205.82, 205.92, 206.02, 206.12, 206.22, 206.82, 206.92, 207.02, 207.12, 207.22, 207.82, 208.02, 208.12, 208.22, 208.82, 208.92, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V43.21, V66.7

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63, 50.59, 50.69

Stroke

Inclusions

Principal Diagnosis: 430, 431, 432.9, 433.01, 433.11, 433.21, 433.31, 433.81, 433.91, 434.01, 434.11, 434.91

Exclusions

Diagnoses (Primary or Secondary): 196.0, 196.1, 196.2, 196.3, 196.5, 196.6, 196.8, 196.9, 197.0, 197.1, 197.2, 197.3, 197.4, 197.5, 197.6, 197.7, 197.8, 198.0, 198.1, 198.2, 198.3, 198.4, 198.5, 198.6, 198.7, 198.81, 198.82, 198.89, 203.02, 203.12, 203.82, 204.02, 204.12, 204.22, 204.82, 204.92, 205.02, 205.12, 205.22, 205.82, 205.92, 206.02, 206.12, 206.22, 206.82, 206.92, 207.02, 207.12, 207.22, 207.82, 208.02, 208.12, 208.22, 208.82, 208.92, 432.1, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V43.21, V46.11, V66.7

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63

Total Knee Replacement

Inclusions

Principal Procedure: 81.54

Exclusions

Diagnoses (Primary or Secondary): 996.45, 996.46, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9

Principal Diagnosis: 996.43

Procedures (Primary or Secondary): 00.74, 00.75, 00.76, 00.80, 00.81, 00.82, 00.83, 00.84, 37.51, 37.52, 37.53, 37.54, 78.65, 78.67, 80.05, 80.06, 81.51, 81.52, 81.53, 81.55

Valve Repair/Replacement Surgery

Inclusions

Procedures (Primary or Secondary): 35.10, 35.11, 35.12, 35.13, 35.14, 35.20, 35.21, 35.22, 35.23, 35.24, 35.25, 35.26, 35.27, 35.28, 35.97

Exclusions

Diagnoses (Primary or Secondary): 414.06, 414.07, 441.00, 441.01, 441.02, 441.03, 441.2, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9

Procedures (Primary or Secondary): 35.55, 35.96, 36.31, 36.32, 36.33, 36.34, 37.51, 37.52, 37.53, 37.54, 37.62, 37.63, 38.12, 38.34, 38.44, 38.64, 39.71

Appendix C. Complications

Appendectomy - Independent Complications

Independent complications are conditions that are clearly hospital-acquired or by the coding definition are defined as post-operative. These conditions were not counted as complications if the POA indicator was "Yes" or "Clinically Undetermined."

292.81	DRUG INDUCED DELIRIUM	997.1	SURG COMP-HEART
415.11	IATRO PULM EMBOL/INFARCT	997.3	SURG COMP-RESP NEC
415.12	SEPTIC PULMON EMBOLISM	997.31	VENT ASSOC PNEUMONIA
415.19	PULMON EMBOL/INFARCT NEC	997.32	POSTPX ASP PNEUMONIA
423.3	CARDIAC TAMPONADE	997.39	OTH SURG COMP-RESP
427.41	VENTRICULAR FIBRILLATION	997.4	SURG COMP-DIGESTIVE
427.5	CARDIAC ARREST	997.5	SURG COMP-URINARY NEC
449	SEPTIC ARTERIAL EMBOLISM	998.0	POSTOPERATIVE SHOCK
453.82	AC DVT UPPER EXTREMITY	998.00	POSTOP SHOCK NOS
453.83	AC VEN THROMB UE NOS	998.01	POSTOP CARDIOGENIC SHOCK
453.84	AC VEN THROMB AX VEIN	998.02	POSTOP SEPTIC SHOCK
453.85	AC VEN THROMB SCL VEIN	998.09	POSTOP SHOCK NEC
453.86	AC VEN THROMB INT JV	998.11	HEMORRHAGE COMP PX
453.87	AC VEN THROMB THOR NEC	998.2	ACCIDENTAL OP LACERATION
453.89	AC VEN THROMB NEC	998.30	DISRUPTION WOUND NOS
512.1	IATROGENIC PNEUMOTHORAX	998.31	DISRUPT INTERNAL OP WND
518.5	PI FOLLOW TRAUMA & SURG	998.32	DISRUPT EXTERNAL OP WND
518.51	AC RESP FAIL TRAUM/SURG	998.59	POSTOP INFECTION NEC
518.52	PI NEC FOLLOW TRAUM/SURG	999.31	INFECT NEC & NOS D/T CVC
518.53	A&C RESP FAIL TRAUM/SURG	999.32	BLOODSTREAM INF D/T CVC
518.7	TRALI	999.34	AC INF POST TRANSFUSION
518.81	AC RESPIRATORY FAILURE	999.39	INFECT COMP MED CARE NEC
997.02	IATROGEN CV INFARCT/HEM		

Appendectomy - Dependent Complications

Dependent complications are conditions that must either have the POA indicator set to "No," or if the POA indicator is set to "Unknown" or is missing, there must also be the listed 900 post-operative complication code present in the patient record.

Must occur with 997.1 CARDIAC COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

410.01	ANTEROLAT AMI-INITIAL	427.31	ATRIAL FIBRILLATION
410.11	ANT AMI NEC-INITIAL	427.32	ATRIAL FLUTTER
410.21	INFEROLAT AMI-INITIAL	427.89	OTH CARDIAC DYSRHYTHMIAS
410.51	LAT AMI NEC-INITIAL	428.0	CHF NOS
410.61	POSTERIOR AMI-INITIAL	428.1	LEFT HEART FAILURE
410.71	SUBEND INFARCT-INITIAL	428.21	ACUTE SYSTOLIC HF
410.81	AMI NEC-INITIAL EPISODE	428.23	AC & CHR SYSTOLIC HF
410.91	AMI NOS-INITIAL EPISODE	428.31	ACUTE DIASTOLIC HF
427.0	PSVT	428.33	AC & CHR DIASTOLIC HF
427.1	PVT		

Must occur with 997.3 RESPIRATORY COMPLICATIONS or 997.39 OTHER RESPIRATORY COMPLICATIONS

481	PNEUMOCOCCAL PNEUMONIA	482.83	GRAM-NEG PNEUMONIA NEC
482.0	K. PNEUMONIAE PNEUMONIA	482.84	LEGIONNAIRES' DISEASE
482.1	PSEUDOMONAL PNEUMONIA	482.89	BACTERIAL PNEUMONIA NEC
482.2	H. INFLUENZAE PNEUMONIA	482.9	BACTERIAL PNEUMONIA NOS
482.30	STREP PNEUMONIA NOS	483.0	M. PNEUMONIAE PNEUMONIA
482.31	GROUP A STREP PNEUMONIA	483.1	CHLAMYDIAL PNEUMONIA
482.32	GROUP B STREP PNEUMONIA	483.8	PNEUMONIA D/T ORG NEC
482.39	STREP PNEUMONIA NEC	484.3	PNEUMONIA IN WHOOP COUGH
482.40	STAPH PNEUMONIA NOS	484.6	PNEUM IN ASPERGILLOSIS
482.41	MSSA PNEUMONIA	484.7	PNEUM IN SYST MYCOSESNEC
482.42	MRSA PNEUMONIA	485	BRONCHOPNEUMONIA ORG NOS
482.49	STAPH PNEUMONIA NEC	486	PNEUMONIA ORGANISM NOS
482.81	PNEUMONIA D/T ANAEROBES	507.0	FOOD/VOMIT PNEUMONITIS
482.82	E. COLI PNEUMONIA		

Must occur with 997.4 DIGESTIVE SYSTEM COMPLICATION or 998.2 ACCIDENTAL PUNCTURE OR LACERATION DURING A PROCEDURE

569.83	INTESTINAL PERFORATION
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Must occur with 997.5 URINARY COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

584.5	AC RF W TUBULAR NEPHR	599.0	URINARY TRACT INF NOS
584.8	ACUTE RENAL FAILURE NEC	788.20	RETENTION OF URINE NOS
584.9	ACUTE RENAL FAILURE NOS	788.29	RETENTION OF URINE NEC

Must occur with 998.11 HEMORRHAGE COMPLICATING A PROCEDURE or 998.2 ACCIDENTAL PUNCTURE OR LACERATION DURING A PROCEDURE

568.81	HEMOPERITONEUM
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Must occur with 998.59 OTHER POSTOPERATIVE INFECTION

038.0	STREPTOCOCCAL SEPTICEMIA	038.41	H. INFLUENZAE SEPTICEMIA
038.10	STAPH SEPTICEMIA NOS	038.42	E. COLI SEPTICEMIA
038.11	MSSA SEPTICEMIA	038.43	PSEUDOMONAS SEPTICEMIA
038.12	MRSA SEPTICEMIA	038.44	SERRATIA SEPTICEMIA
038.19	STAPH SEPTICEMIA NEC	038.49	GRAM-NEG SEPTICEMIA NEC
038.2	PNEUMOCOCCAL SEPTICEMIA	038.8	SEPTICEMIA NEC
038.3	ANAEROBIC SEPTICEMIA	038.9	SEPTICEMIA NOS
038.40	GRAM-NEG SEPTICEMIA NOS	682.2	TRUNK CELLULITIS

Back and Neck Surgery (except Spinal Fusion) – Independent Complications

Independent complications are conditions that are clearly hospital-acquired or by the coding definition are defined as post-operative. These conditions were not counted as complications if the POA indicator was "Yes" or "Clinically Undetermined."

038.0	STREPTOCOCCAL SEPTICEMIA	482.9	BACTERIAL PNEUMONIA NOS
038.10	STAPH SEPTICEMIA NOS	483.0	M. PNEUMONIAE PNEUMONIA
038.11	MSSA SEPTICEMIA	483.1	CHLAMYDIAL PNEUMONIA
038.12	MRSA SEPTICEMIA	483.8	PNEUMONIA D/T ORG NEC
038.19	STAPH SEPTICEMIA NEC	484.1	PNEUMONIA IN CMV DISEASE
038.2	PNEUMOCOCCAL SEPTICEMIA	484.3	PNEUMONIA IN WHOOP COUGH
038.3	ANAEROBIC SEPTICEMIA	484.6	PNEUM IN ASPERGILLOSIS
038.40	GRAM-NEG SEPTICEMIA NOS	484.7	PNEUM IN SYST MYCOSESNEC
038.41	H. INFLUENZAE SEPTICEMIA	486	PNEUMONIA ORGANISM NOS
038.42	E. COLI SEPTICEMIA	507.0	FOOD/VOMIT PNEUMONITIS
038.43	PSEUDOMONAS SEPTICEMIA	512.1	IATROGENIC PNEUMOTHORAX
038.44	SERRATIA SEPTICEMIA	514	PULMONARY CONGESTION
038.49	GRAM-NEG SEPTICEMIA NEC	518.5	PI FOLLOW TRAUMA & SURG
038.8	SEPTICEMIA NEC	518.51	AC RESP FAIL TRAUM/SURG
038.9	SEPTICEMIA NOS	518.52	PI NEC FOLLOW TRAUM/SURG
286.6	DEFIBRATION SYNDROME	518.53	A&C RESP FAIL TRAUM/SURG
292.12	DRG IND PSYCH W HALLUCIN	518.7	TRALI
292.81	DRUG INDUCED DELIRIUM	518.81	AC RESPIRATORY FAILURE
293.0	DELIRIUM D/T CCE	584.5	AC KF W TUBULAR NEPHR
349.31	ACC LAC DURA DURING PX	584.8	ACUTE KIDNEY FAILURE NEC
410.01	ANTEROLAT AMI-INITIAL	584.9	ACUTE KIDNEY FAILURE NOS
410.11	ANT AMI NEC-INITIAL	707.0	PRESSURE ULCER
410.21	INFEROLAT AMI-INITIAL	707.00	PRESSURE ULCER-SITE NOS
410.31	INFEROPOST AMI-INITIAL	707.01	PRESSURE ULCER-ELBOW
410.41	INF AMI NEC-INITIAL	707.02	PRESSURE ULCER-UP BACK
410.51	LAT AMI NEC-INITIAL	707.03	PRESSURE ULCER-LOW BACK
410.61	POSTERIOR AMI-INITIAL	707.04	PRESSURE ULCER-HIP
410.71	SUBEND INFARCT-INITIAL	707.05	PRESSURE ULCER-BUTTOCK
410.81	AMI NEC-INITIAL EPISODE	707.06	PRESSURE ULCER-ANKLE
410.91	AMI NOS-INITIAL EPISODE	707.07	PRESSURE ULCER-HEEL
415.11	IATRO PULM EMBOL/INFARCT	707.09	PRESSURE ULCER-SITE NEC
415.12	SEPTIC PULMON EMBOLISM	780.97	ALTERED MENTAL STATUS
415.19	PULMON EMBOL/INFARCT NEC	785.50	SHOCK NOS
423.3	CARDIAC TAMPONADE	785.51	CARDIOGENIC SHOCK
427.5	CARDIAC ARREST	785.52	SEPTIC SHOCK
449	SEPTIC ARTERIAL EMBOLISM	799.1	RESPIRATORY ARREST
453.40	ACUTE DVT LEG NOS	867.0	BLAD/URETHRA INJURY-CLSD
453.41	ACUTE DVT PROXIMAL LEG	995.91	SEPSIS
453.42	ACUTE DVT DISTAL LEG	995.92	SEVERE SEPSIS
480.0	ADENOVIRAL PNEUMONIA	997.02	IATROGEN CV INFARCT/HEM
480.1	RSV PNEUMONIA	997.09	NERV SYST SURG COMP NEC
480.2	PARAINFLUENZA VIR PNEUM	997.1	SURG COMP-HEART
480.3	SARS PNEUMONIA	997.3	SURG COMP-RESP NEC
480.8	VIRAL PNEUMONIA NEC	997.31	VENT ASSOC PNEUMONIA
481	PNEUMOCOCCAL PNEUMONIA	997.32	POSTPX ASP PNEUMONIA
482.0	K. PNEUMONIAE PNEUMONIA	997.39	OTH SURG COMP-RESP
482.1	PSEUDOMONAL PNEUMONIA	997.4	SURG COMP-DIGESTIVE
482.2	H. INFLUENZAE PNEUMONIA	997.5	SURG COMP-URINARY NEC
482.30	STREP PNEUMONIA NOS	998.0	POSTOPERATIVE SHOCK
482.31	GROUP A STREP PNEUMONIA	998.00	POSTOP SHOCK NOS
482.32	GROUP B STREP PNEUMONIA	998.01	POSTOP CARDIOGENIC SHOCK
482.39	STREP PNEUMONIA NEC	998.02	POSTOP SEPTIC SHOCK
482.40	STAPH PNEUMONIA NOS	998.09	POSTOP SHOCK NEC

482.41	MSSA PNEUMONIA	998.11	HEMORRHAGE COMP PX
482.42	MRSA PNEUMONIA	998.30	DISRUPTION WOUND NOS
482.49	STAPH PNEUMONIA NEC	998.31	DISRUPT INTERNAL OP WND
482.81	PNEUMONIA D/T ANAEROBES	998.32	DISRUPT EXTERNAL OP WND
482.82	E. COLI PNEUMONIA	998.59	POSTOP INFECTION NEC
482.83	GRAM-NEG PNEUMONIA NEC	999.31	INFECT NEC & NOS D/T CVC
482.84	LEGIONNAIRES' DISEASE	999.32	BLOODSTREAM INF D/T CVC
482.89	BACTERIAL PNEUMONIA NEC	999.34	AC INF POST TRANSFUSION
		999.39	INFECT COMP MED CARE NEC

Back and Neck Surgery (except Spinal Fusion) – Dependent Complications

Dependent complications are conditions that must either have the POA indicator set to "No," or if the POA indicator is set to "Unknown" or is missing, there must also be the listed 900 post-operative complication code present in the patient record.

Must occur with 997.02 IATROGENIC CEREBROVASCULAR INFARCTION OR HEMORRHAGE

434.11	CEREBRAL EMBOL W INFARCT	434.91	CEREB ART OCCL W INFARCT
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Must occur with 997.1 CARDIAC COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

427.0	PSVT	428.23	AC & CHR SYSTOLIC HF
427.1	PVT	428.31	ACUTE DIASTOLIC HF
427.31	ATRIAL FIBRILLATION	428.33	AC & CHR DIASTOLIC HF
427.32	ATRIAL FLUTTER	428.41	AC SYS & DIASTOLIC HF
428.0	CHF NOS	428.43	ACCHR SYS & DIASTOLIC HF
428.1	LEFT HEART FAILURE	428.9	HEART FAILURE NOS
428.21	ACUTE SYSTOLIC HF		

Must occur with 997.3 RESPIRATORY COMPLICATIONS or 997.39 OTHER RESPIRATORY COMPLICATIONS

485	BRONCHOPNEUMONIA ORG NOS	518.4	ACUTE LUNG EDEMA NOS
511.9	PLEURAL EFFUSION NOS	518.84	AC & CHR RESP FAILURE

Must occur with 997.4 DIGESTIVE SYSTEM COMPLICATION

560.1	PARALYTIC ILEUS
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Must occur with 997.5 URINARY COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

593.9	RENAL/URETER DISORD NOS	788.20	RETENTION OF URINE NOS
599.0	URINARY TRACT INF NOS	788.29	RETENTION OF URINE NEC

Must occur with 998.59 OTHER POSTOPERATIVE INFECTION

008.45	C. DIFFICILE ENTERITIS
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Must not occur with V15.88 PERSONAL HISTORY OF FALL, PRESENTING HAZARDS TO HEALTH or V42.4 BONE REPLACED BY TRANSPLANT or V43.64 HIP JOINT REPLACED BY OTHER MEANS or V43.65 KNEE JOINT REPLACED BY OTHER MEANS or V45.4 ARTHRODESIS STATUS or V54.01 ENCOUNTER FOR REMOVAL OF INTERNAL FIXATION DEVICE or V54.02 ENCOUNTER FOR LENGTHENING/ADJUSTMENT OF GROWTH ROD or V54.09 OTHER AFTERCARE INVOLVING INTERNAL FIXATION DEVICE

996.40	MECH COMP INT ORTH NOS	996.78	COMP NEC ORTH DEV NEC
996.49	MECH COMP INT ORTH NEC		

Back and Neck Surgery (Spinal Fusion) – Independent Complications

Independent complications are conditions that are clearly hospital-acquired or by the coding definition are defined as post-operative. These conditions were not counted as complications if the POA indicator was "Yes" or "Clinically Undetermined."

038.0	STREPTOCOCCAL SEPTICEMIA	483.0	M. PNEUMONIAE PNEUMONIA
038.10	STAPH SEPTICEMIA NOS	483.1	CHLAMYDIAL PNEUMONIA
038.11	MSSA SEPTICEMIA	483.8	PNEUMONIA D/T ORG NEC
038.12	MRSA SEPTICEMIA	484.1	PNEUMONIA IN CMV DISEASE
038.19	STAPH SEPTICEMIA NEC	484.3	PNEUMONIA IN WHOOP COUGH
038.2	PNEUMOCOCCAL SEPTICEMIA	484.6	PNEUM IN ASPERGILLOSIS
038.3	ANAEROBIC SEPTICEMIA	484.7	PNEUM IN SYST MYCOSESNEC
038.40	GRAM-NEG SEPTICEMIA NOS	486	PNEUMONIA ORGANISM NOS
038.41	H. INFLUENZAE SEPTICEMIA	507.0	FOOD/VOMIT PNEUMONITIS
038.42	E. COLI SEPTICEMIA	512.1	IATROGENIC PNEUMOTHORAX
038.43	PSEUDOMONAS SEPTICEMIA	514	PULMONARY CONGESTION
038.44	SERRATIA SEPTICEMIA	518.5	PI FOLLOW TRAUMA & SURG
038.49	GRAM-NEG SEPTICEMIA NEC	518.51	AC RESP FAIL TRAUM/SURG
038.8	SEPTICEMIA NEC	518.52	PI NEC FOLLOW TRAUM/SURG
038.9	SEPTICEMIA NOS	518.53	A&C RESP FAIL TRAUM/SURG
286.6	DEFIBRATION SYNDROME	518.7	TRALI
292.12	DRG IND PSYCH W HALLUCIN	518.81	AC RESPIRATORY FAILURE
292.81	DRUG INDUCED DELIRIUM	584.5	AC KF W TUBULAR NEPHR
293.0	DELIRIUM D/T CCE	584.8	ACUTE KIDNEY FAILURE NEC
349.31	ACC LAC DURA DURING PX	584.9	ACUTE KIDNEY FAILURE NOS
410.01	ANTEROLAT AMI-INITIAL	707.0	PRESSURE ULCER
410.11	ANT AMI NEC-INITIAL	707.00	PRESSURE ULCER-SITE NOS
410.21	INFEROLAT AMI-INITIAL	707.01	PRESSURE ULCER-ELBOW
410.31	INFEROPOST AMI-INITIAL	707.02	PRESSURE ULCER-UP BACK
410.41	INF AMI NEC-INITIAL	707.03	PRESSURE ULCER-LOW BACK
410.51	LAT AMI NEC-INITIAL	707.04	PRESSURE ULCER-HIP
410.61	POSTERIOR AMI-INITIAL	707.05	PRESSURE ULCER-BUTTOCK
410.71	SUBEND INFARCT-INITIAL	707.06	PRESSURE ULCER-ANKLE
410.81	AMI NEC-INITIAL EPISODE	707.07	PRESSURE ULCER-HEEL
410.91	AMI NOS-INITIAL EPISODE	707.09	PRESSURE ULCER-SITE NEC
415.11	IATRO PULM EMBOL/INFARCT	780.97	ALTERED MENTAL STATUS
415.12	SEPTIC PULMON EMBOLISM	785.50	SHOCK NOS
415.19	PULMON EMBOL/INFARCT NEC	785.51	CARDIOGENIC SHOCK
423.3	CARDIAC TAMPONADE	785.52	SEPTIC SHOCK
427.5	CARDIAC ARREST	799.1	RESPIRATORY ARREST
449	SEPTIC ARTERIAL EMBOLISM	867.0	BLAD/URETHRA INJURY-CLSD
453.40	ACUTE DVT LEG NOS	995.91	SEPSIS
453.41	ACUTE DVT PROXIMAL LEG	995.92	SEVERE SEPSIS
453.42	ACUTE DVT DISTAL LEG	997.02	IATROGEN CV INFARCT/HEM
480.0	ADENOVIRAL PNEUMONIA	997.09	NERV SYST SURG COMP NEC
480.1	RSV PNEUMONIA	997.1	SURG COMP-HEART
480.2	PARAINFLUENZA VIR PNEUM	997.3	SURG COMP-RESP NEC
480.3	SARS PNEUMONIA	997.31	VENT ASSOC PNEUMONIA
480.8	VIRAL PNEUMONIA NEC	997.32	POSTPX ASP PNEUMONIA
481	PNEUMOCOCCAL PNEUMONIA	997.39	OTH SURG COMP-RESP
482.0	K. PNEUMONIAE PNEUMONIA	997.4	SURG COMP-DIGESTIVE
482.1	PSEUDOMONAL PNEUMONIA	997.5	SURG COMP-URINARY NEC
482.2	H. INFLUENZAE PNEUMONIA	998.0	POSTOPERATIVE SHOCK
482.30	STREP PNEUMONIA NOS	998.00	POSTOP SHOCK NOS
482.31	GROUP A STREP PNEUMONIA	998.01	POSTOP CARDIOGENIC SHOCK
482.32	GROUP B STREP PNEUMONIA	998.02	POSTOP SEPTIC SHOCK
482.39	STREP PNEUMONIA NEC	998.09	POSTOP SHOCK NEC
482.40	STAPH PNEUMONIA NOS	998.11	HEMORRHAGE COMP PX

482.41	MSSA PNEUMONIA	998.30	DISRUPTION WOUND NOS
482.42	MRSA PNEUMONIA	998.31	DISRUPT INTERNAL OP WND
482.49	STAPH PNEUMONIA NEC	998.32	DISRUPT EXTERNAL OP WND
482.81	PNEUMONIA D/T ANAEROBES	998.59	POSTOP INFECTION NEC
482.82	E. COLI PNEUMONIA	999.31	INFECT NEC & NOS D/T CVC
482.83	GRAM-NEG PNEUMONIA NEC	999.32	BLOODSTREAM INF D/T CVC
482.84	LEGIONNAIRES' DISEASE	999.34	AC INF POST TRANSFUSION
482.89	BACTERIAL PNEUMONIA NEC	999.39	INFECT COMP MED CARE NEC
482.9	BACTERIAL PNEUMONIA NOS		

Back and Neck Surgery (Spinal Fusion) – Dependent Complications

Dependent complications are conditions that must either have the POA indicator set to "No," or if the POA indicator is set to "Unknown" or is missing, there must also be the listed 900 post-operative complication code present in the patient record.

Must occur with 997.02 IATROGENIC CEREBROVASCULAR INFARCTION OR HEMORRHAGE

434.11	CEREBRAL EMBOL W INFARCT	434.91	CEREB ART OCCL W INFARCT
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Must occur with 997.1 CARDIAC COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

427.0	PSVT	428.23	AC & CHR SYSTOLIC HF
427.1	PVT	428.31	ACUTE DIASTOLIC HF
427.31	ATRIAL FIBRILLATION	428.33	AC & CHR DIASTOLIC HF
427.32	ATRIAL FLUTTER	428.41	AC SYS & DIASTOLIC HF
428.0	CHF NOS	428.43	ACCHR SYS & DIASTOLIC HF
428.1	LEFT HEART FAILURE	428.9	HEART FAILURE NOS
428.21	ACUTE SYSTOLIC HF		

Must occur with 997.3 RESPIRATORY COMPLICATIONS 997.39 OTHER RESPIRATORY COMPLICATIONS

485	BRONCHOPNEUMONIA ORG NOS	518.4	ACUTE LUNG EDEMA NOS
511.9	PLEURAL EFFUSION NOS	518.84	AC & CHR RESP FAILURE

Must occur with 997.4 DIGESTIVE SYSTEM COMPLICATION

560.1	PARALYTIC ILEUS
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Must occur with 997.5 URINARY COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

593.9	RENAL/URETER DISORD NOS	788.20	RETENTION OF URINE NOS
599.0	URINARY TRACT INF NOS	788.29	RETENTION OF URINE NEC

Must occur with 998.59 OTHER POSTOPERATIVE INFECTION

008.45	C. DIFFICILE ENTERITIS
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Must not occur with V15.88 PERSONAL HISTORY OF FALL, PRESENTING HAZARDS TO HEALTH or V42.4 BONE REPLACED BY TRANSPLANT or V43.64 HIP JOINT REPLACED BY OTHER MEANS or V43.65 KNEE JOINT REPLACED BY OTHER MEANS or V45.4 ARTHRODESIS STATUS or V54.01 ENCOUNTER FOR REMOVAL OF INTERNAL FIXATION DEVICE or V54.02 ENCOUNTER FOR LENGTHENING/ADJUSTMENT OF GROWTH ROD or V54.09 OTHER AFTERCARE INVOLVING INTERNAL FIXATION DEVICE

996.40	MECH COMP INT ORTH NOS	996.78	COMP NEC ORTH DEV NEC
996.49	MECH COMP INT ORTH NEC		

Carotid Surgery – Independent Complications

Independent complications are conditions that are clearly hospital-acquired or by the coding definition are defined as post-operative. These conditions were not counted as complications if the POA indicator was "Yes" or "Clinically Undetermined."

008.45	C. DIFFICILE ENTERITIS	514	PULMONARY CONGESTION
041.04	GROUP D STREP INFECTION	518.0	PULMONARY COLLAPSE
041.11	MSSA	518.4	ACUTE LUNG EDEMA NOS
041.7	PSEUDOMONAS INFECT NOS	518.5	PI FOLLOW TRAUMA & SURG
286.6	DEFIBRATION SYNDROME	518.51	AC RESP FAIL TRAUM/SURG
292.81	DRUG INDUCED DELIRIUM	518.52	PI NEC FOLLOW TRAUM/SURG
293.0	DELIRIUM D/T CCE	518.53	A&C RESP FAIL TRAUM/SURG
348.1	ANOXIC BRAIN DAMAGE	518.7	TRALI
410.01	ANTEROLAT AMI-INITIAL	518.81	AC RESPIRATORY FAILURE
410.11	ANT AMI NEC-INITIAL	518.84	AC & CHR RESP FAILURE
410.21	INFEROLAT AMI-INITIAL	780.01	COMA
410.51	LAT AMI NEC-INITIAL	780.97	ALTERED MENTAL STATUS
410.61	POSTERIOR AMI-INITIAL	785.50	SHOCK NOS
410.71	SUBEND INFARCT-INITIAL	785.51	CARDIOGENIC SHOCK
410.81	AMI NEC-INITIAL EPISODE	785.52	SEPTIC SHOCK
410.91	AMI NOS-INITIAL EPISODE	788.29	RETENTION OF URINE NEC
415.12	SEPTIC PULMON EMBOLISM	867.0	BLAD/URETHRA INJURY-CLSD
415.19	PULMON EMBOL/INFARCT NEC	951.7	INJURY HYPOGLOSSAL NERVE
423.3	CARDIAC TAMPONADE	957.1	INJURY TO NERVE NEC
427.41	VENTRICULAR FIBRILLATION	995.91	SEPSIS
427.5	CARDIAC ARREST	995.92	SEVERE SEPSIS
434.01	CEREB THROMB W INFARCT	996.01	MECH COMP CARD PACEMAKER
449	SEPTIC ARTERIAL EMBOLISM	996.1	MECH COMP OTH VASC DEV
453.40	ACUTE DVT LEG NOS	996.74	COMP NEC D/T VASC DEVNEC
453.41	ACUTE DVT PROXIMAL LEG	997.00	NERV SYST SURG COMP NOS
453.42	ACUTE DVT DISTAL LEG	997.01	CNS SURG COMP
481	PNEUMOCOCCAL PNEUMONIA	997.02	IATROGEN CV INFARCT/HEM
482.0	K. PNEUMONIAE PNEUMONIA	997.09	NERV SYST SURG COMP NEC
482.1	PSEUDOMONAL PNEUMONIA	997.1	SURG COMP-HEART
482.2	H. INFLUENZAE PNEUMONIA	997.2	SURG COMP-PERIPH VASC
482.30	STREP PNEUMONIA NOS	997.3	SURG COMP-RESP NEC
482.31	GROUP A STREP PNEUMONIA	997.31	VENT ASSOC PNEUMONIA
482.32	GROUP B STREP PNEUMONIA	997.32	POSTPX ASP PNEUMONIA
482.39	STREP PNEUMONIA NEC	997.39	OTH SURG COMP-RESP
482.40	STAPH PNEUMONIA NOS	997.4	SURG COMP-DIGESTIVE
482.41	MSSA PNEUMONIA	997.5	SURG COMP-URINARY NEC
482.42	MRSA PNEUMONIA	997.91	SURG COMP-HYPERTENSION
482.49	STAPH PNEUMONIA NEC	998.0	POSTOPERATIVE SHOCK
482.81	PNEUMONIA D/T ANAEROBES	998.00	POSTOP SHOCK NOS
482.82	E. COLI PNEUMONIA	998.01	POSTOP CARDIOGENIC SHOCK
482.83	GRAM-NEG PNEUMONIA NEC	998.02	POSTOP SEPTIC SHOCK
482.84	LEGIONNAIRES' DISEASE	998.09	POSTOP SHOCK NEC
482.89	BACTERIAL PNEUMONIA NEC	998.11	HEMORRHAGE COMP PX
482.9	BACTERIAL PNEUMONIA NOS	998.2	ACCIDENTAL OP LACERATION
483.0	M. PNEUMONIAE PNEUMONIA	998.30	DISRUPTION WOUND NOS
483.1	CHLAMYDIAL PNEUMONIA	998.31	DISRUPT INTERNAL OP WND
483.8	PNEUMONIA D/T ORG NEC	998.32	DISRUPT EXTERNAL OP WND
484.3	PNEUMONIA IN WHOOP COUGH	998.59	POSTOP INFECTION NEC
484.6	PNEUM IN ASPERGILLOSIS	999.31	INFECT NEC & NOS D/T CVC
484.7	PNEUM IN SYST MYCOSESNEC	999.32	BLOODSTREAM INF D/T CVC
486	PNEUMONIA ORGANISM NOS	999.34	AC INF POST TRANSFUSION
507.0	FOOD/VOMIT PNEUMONITIS	999.39	INFECT COMP MED CARE NEC
512.1	IATROGENIC PNEUMOTHORAX		

Carotid Surgery – Dependent Complications

Dependent complications are conditions that must either have the POA indicator set to "No," or if the POA indicator is set to "Unknown" or is missing, there must also be the listed 900 post-operative complication code present in the patient record.

Must occur with 997.02 IATROGENIC CEREBROVASCULAR INFARCTION OR HEMORRHAGE

434.11	CEREBRAL EMBOL W INFARCT	434.91	CEREB ART OCCL W INFARCT
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Must occur with 997.1 CARDIAC COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

427.0	PSVT	428.21	ACUTE SYSTOLIC HF
427.1	PVT	428.23	AC & CHR SYSTOLIC HF
427.31	ATRIAL FIBRILLATION	428.31	ACUTE DIASTOLIC HF
427.32	ATRIAL FLUTTER	428.33	AC & CHR DIASTOLIC HF
427.89	OTH CARDIAC DYSRHYTHMIAS	428.41	AC SYS & DIASTOLIC HF
428.0	CHF NOS	428.43	ACCHR SYS & DIASTOLIC HF
428.1	LEFT HEART FAILURE	428.9	HEART FAILURE NOS

Must occur with 997.3 RESPIRATORY COMPLICATIONS or 997.39 OTHER RESPIRATORY COMPLICATIONS

485	BRONCHOPNEUMONIA ORG NOS
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Must occur with 997.4 DIGESTIVE SYSTEM COMPLICATION

560.1	PARALYTIC ILEUS
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Must occur with 997.5 URINARY COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

584.5	AC RF W TUBULAR NEPHR	593.9	RENAL/URETER DISORD NOS
584.8	ACUTE KIDNEY FAILURE NEC	599.0	URINARY TRACT INF NOS
584.9	ACUTE KIDNEY FAILURE NOS	788.20	RETENTION OF URINE NOS

Must occur with 998.59 OTHER POSTOPERATIVE INFECTION

038.0	STREPTOCOCCAL SEPTICEMIA	038.41	H. INFLUENZAE SEPTICEMIA
038.10	STAPH SEPTICEMIA NOS	038.42	E. COLI SEPTICEMIA
038.11	MSSA SEPTICEMIA	038.43	PSEUDOMONAS SEPTICEMIA
038.12	MRSA SEPTICEMIA	038.44	SERRATIA SEPTICEMIA
038.19	STAPH SEPTICEMIA NEC	038.49	GRAM-NEG SEPTICEMIA NEC
038.2	PNEUMOCOCCAL SEPTICEMIA	038.8	SEPTICEMIA NEC
038.3	ANAEROBIC SEPTICEMIA	038.9	SEPTICEMIA NOS
038.40	GRAM-NEG SEPTICEMIA NOS		

Gallbladder Surgery – Independent Complications

Independent complications are conditions that are clearly hospital-acquired or by the coding definition are defined as post-operative. These conditions were not counted as complications if the POA indicator was "Yes" or "Clinically Undetermined."

286.6	DEFIBRATION SYNDROME	785.59	SHOCK W/O TRAUMA NEC
292.81	DRUG INDUCED DELIRIUM	867.0	BLAD/URETHRA INJURY-CLSD
293.0	DELIRIUM D/T CCE	996.62	INFECT D/T VASC DEVICE
415.11	IATRO PULM EMBOL/INFARCT	996.76	COMP NEC D/T GU DEVICE
415.12	SEPTIC PULMON EMBOLISM	997.02	IATROGEN CV INFARCT/HEM
415.19	PULMON EMBOL/INFARCT NEC	997.1	SURG COMP-HEART
423.3	CARDIAC TAMPONADE	997.3	SURG COMP-RESP NEC
427.5	CARDIAC ARREST	997.31	VENT ASSOC PNEUMONIA
434.11	CEREBRAL EMBOL W INFARCT	997.32	POSTPX ASP PNEUMONIA
434.91	CEREB ART OCCL W INFARCT	997.39	OTH SURG COMP-RESP
449	SEPTIC ARTERIAL EMBOLISM	997.4	SURG COMP-DIGESTIVE
453.40	ACUTE DVT LEG NOS	997.5	SURG COMP-URINARY NEC
453.41	ACUTE DVT PROXIMAL LEG	998.0	POSTOPERATIVE SHOCK
453.42	ACUTE DVT DISTAL LEG	998.00	POSTOP SHOCK NOS
458.29	IATROGEN HYPOTENSION NEC	998.01	POSTOP CARDIOGENIC SHOCK
512.1	IATROGENIC PNEUMOTHORAX	998.02	POSTOP SEPTIC SHOCK
518.0	PULMONARY COLLAPSE	998.09	POSTOP SHOCK NEC
518.4	ACUTE LUNG EDEMA NOS	998.11	HEMORRHAGE COMP PX
518.5	PI FOLLOW TRAUMA & SURG	998.12	HEMATOMA COMPLICATING PX
518.51	AC RESP FAIL TRAUM/SURG	998.2	ACCIDENTAL OP LACERATION
518.52	PI NEC FOLLOW TRAUM/SURG	998.30	DISRUPTION WOUND NOS
518.53	A&C RESP FAIL TRAUM/SURG	998.31	DISRUPT INTERNAL OP WND
518.7	TRALI	998.32	DISRUPT EXTERNAL OP WND
518.81	AC RESPIRATORY FAILURE	998.4	FB LEFT DURING PROCEDURE
518.84	AC & CHR RESP FAILURE	998.59	POSTOP INFECTION NEC
54.12	REOPEN RECENT LAP SITE	998.6	PERSIST POSTOP FISTULA
54.61	RECLOSE POSTOP DISRUPT	999.31	INFECT NEC & NOS D/T CVC
567.21	GENERALIZED PERITONITIS	999.32	BLOODSTREAM INF D/T CVC
567.22	PERITONEAL ABSCESS	999.34	AC INF POST TRANSFUSION
567.29	OTH SUPPURAT PERITONITIS	999.39	INFECT COMP MED CARE NEC

Gallbladder Surgery – Dependent Complications

Dependent complications are conditions that must either have the POA indicator set to "No," or if the POA indicator is set to "Unknown" or is missing, there must also be the listed 900 post-operative complication code present in the patient record.

Must occur with 997.1 CARDIAC COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

410.01	ANTEROLAT AMI-INITIAL	427.32	ATRIAL FLUTTER
410.11	ANT AMI NEC-INITIAL	427.41	VENTRICULAR FIBRILLATION
410.21	INFEROLAT AMI-INITIAL	427.89	OTH CARDIAC DYSRHYTHMIAS
410.31	INFEROPOST AMI-INITIAL	428.0	CHF NOS
410.41	INF AMI NEC-INITIAL	428.1	LEFT HEART FAILURE
410.51	LAT AMI NEC-INITIAL	428.21	ACUTE SYSTOLIC HF
410.61	POSTERIOR AMI-INITIAL	428.23	AC & CHR SYSTOLIC HF
410.71	SUBEND INFARCT-INITIAL	428.31	ACUTE DIASTOLIC HF
410.81	AMI NEC-INITIAL EPISODE	428.33	AC & CHR DIASTOLIC HF
410.91	AMI NOS-INITIAL EPISODE	428.41	AC SYS & DIASTOLIC HF
427.0	PSVT	428.43	ACCHR SYS & DIASTOLIC HF
427.1	PVT	428.9	HEART FAILURE NOS
427.31	ATRIAL FIBRILLATION		

Must occur with 997.3 RESPIRATORY COMPLICATIONS or 997.39 OTHER RESPIRATORY COMPLICATIONS

481	PNEUMOCOCCAL PNEUMONIA	482.83	GRAM-NEG PNEUMONIA NEC
482.0	K. PNEUMONIAE PNEUMONIA	482.84	LEGIONNAIRES' DISEASE
482.1	PSEUDOMONAL PNEUMONIA	482.89	BACTERIAL PNEUMONIA NEC
482.2	H. INFLUENZAE PNEUMONIA	482.9	BACTERIAL PNEUMONIA NOS
482.30	STREP PNEUMONIA NOS	483.0	M. PNEUMONIAE PNEUMONIA
482.31	GROUP A STREP PNEUMONIA	483.1	CHLAMYDIAL PNEUMONIA
482.32	GROUP B STREP PNEUMONIA	483.8	PNEUMONIA D/T ORG NEC
482.39	STREP PNEUMONIA NEC	484.3	PNEUMONIA IN WHOOP COUGH
482.40	STAPH PNEUMONIA NOS	484.6	PNEUM IN ASPERGILLOSIS
482.41	MSSA PNEUMONIA	484.7	PNEUM IN SYST MYCOSESNEC
482.42	MRSA PNEUMONIA	485	BRONCHOPNEUMONIA ORG NOS
482.49	STAPH PNEUMONIA NEC	486	PNEUMONIA ORGANISM NOS
482.81	PNEUMONIA D/T ANAEROBES	507.0	FOOD/VOMIT PNEUMONITIS
482.82	E. COLI PNEUMONIA		

Must occur with 997.4 DIGESTIVE SYSTEM COMPLICATION

560.1	PARALYTIC ILEUS
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Must occur with 997.4 DIGESTIVE SYSTEM COMPLICATION or 998.2 ACCIDENTAL PUNCTURE OR LACERATION DURING A PROCEDURE, NOT ELSEWHERE CLASSIFIED

569.83	INTESTINAL PERFORATION
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Must occur with 997.5 URINARY COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

584.5	AC KF W TUBULAR NEPHR	599.0	URINARY TRACT INF NOS
584.8	ACUTE KIDNEY FAILURE NEC	788.20	RETENTION OF URINE NOS
584.9	ACUTE KIDNEY FAILURE NOS	788.29	RETENTION OF URINE NEC

Must occur with 998.11 HEMORRHAGE COMPLICATING A PROCEDURE or 998.2 ACCIDENTAL PUNCTURE OR LACERATION DURING A PROCEDURE**

568.81	HEMOPERITONEUM
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Must occur with 998.59 OTHER POSTOPERATIVE INFECTION

008.45	C. DIFFICILE ENTERITIS	038.44	SERRATIA SEPTICEMIA
038.0	STREPTOCOCCAL SEPTICEMIA	038.49	GRAM-NEG SEPTICEMIA NEC
038.10	STAPH SEPTICEMIA NOS	038.8	SEPTICEMIA NEC
038.11	MSSA SEPTICEMIA	038.9	SEPTICEMIA NOS
038.12	MRSA SEPTICEMIA	567.89	OTHER PERITONITIS
038.19	STAPH SEPTICEMIA NEC	567.9	PERITONITIS NOS
038.2	PNEUMOCOCCAL SEPTICEMIA	682.2	TRUNK CELLULITIS
038.3	ANAEROBIC SEPTICEMIA	785.52	SEPTIC SHOCK
038.40	GRAM-NEG SEPTICEMIA NOS	790.7	BACTEREMIA
038.41	H. INFLUENZAE SEPTICEMIA	995.91	SEPSIS
038.42	E. COLI SEPTICEMIA	995.92	SEVERE SEPSIS
038.43	PSEUDOMONAS SEPTICEMIA		

Hip Fracture Treatment – Independent Complications

Independent complications are conditions that are clearly hospital-acquired or by the coding definition are defined as post-operative. These conditions were not counted as complications if the POA indicator was "Yes" or "Clinically Undetermined."

286.6	DEFIBRATION SYNDROME	707.09	PRESSURE ULCER-SITE NEC
292.12	DRG IND PSYCH W HALLUCIN	780.97	ALTERED MENTAL STATUS
292.81	DRUG INDUCED DELIRIUM	785.50	SHOCK NOS
293.0	DELIRIUM D/T CCE	785.51	CARDIOGENIC SHOCK
415.11	IATRO PULM EMBOL/INFARCT	867.0	BLAD/URETHRA INJURY-CLSD
415.12	SEPTIC PULMON EMBOLISM	997.02	IATROGEN CV INFARCT/HEM
415.19	PULMON EMBOL/INFARCT NEC	997.09	NERV SYST SURG COMP NEC
423.3	CARDIAC TAMPONADE	997.1	SURG COMP-HEART
427.5	CARDIAC ARREST	997.3	SURG COMP-RESP NEC
449	SEPTIC ARTERIAL EMBOLISM	997.31	VENT ASSOC PNEUMONIA
453.40	ACUTE DVT LEG NOS	997.32	POSTPX ASP PNEUMONIA
453.41	ACUTE DVT PROXIMAL LEG	997.39	OTH SURG COMP-RESP
453.42	ACUTE DVT DISTAL LEG	997.4	SURG COMP-DIGESTIVE
512.1	IATROGENIC PNEUMOTHORAX	997.5	SURG COMP-URINARY NEC
514	PULMONARY CONGESTION	998.0	POSTOPERATIVE SHOCK
518.5	PI FOLLOW TRAUMA & SURG	998.00	POSTOP SHOCK NOS
518.51	AC RESP FAIL TRAUM/SURG	998.01	POSTOP CARDIOGENIC SHOCK
518.52	PI NEC FOLLOW TRAUM/SURG	998.02	POSTOP SEPTIC SHOCK
518.53	A&C RESP FAIL TRAUM/SURG	998.09	POSTOP SHOCK NEC
518.7	TRALI	998.11	HEMORRHAGE COMP PX
707.0	PRESSURE ULCER	998.2	ACCIDENTAL OP LACERATION
707.00	PRESSURE ULCER-SITE NOS	998.30	DISRUPTION WOUND NOS
707.01	PRESSURE ULCER-ELBOW	998.31	DISRUPT INTERNAL OP WND
707.02	PRESSURE ULCER-UP BACK	998.32	DISRUPT EXTERNAL OP WND
707.03	PRESSURE ULCER-LOW BACK	998.59	POSTOP INFECTION NEC
707.04	PRESSURE ULCER-HIP	999.31	INFECT NEC & NOS D/T CVC
707.05	PRESSURE ULCER-BUTTOCK	999.32	BLOODSTREAM INF D/T CVC
707.06	PRESSURE ULCER-ANKLE	999.34	AC INF POST TRANSFUSION
707.07	PRESSURE ULCER-HEEL	999.39	INFECT COMP MED CARE NEC

Hip Fracture Treatment – Dependent Complications

Dependent complications are conditions that must either have the POA indicator set to "No," or if the POA indicator is set to "Unknown" or is missing, there must also be the listed 900 post-operative complication code present in the patient record.

Must occur with 997.02 IATROGENIC CEREBROVASCULAR INFARCTION OR HEMORRHAGE

434.11	CEREBRAL EMBOL W INFARCT	434.91	CEREB ART OCCL W INFARCT
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Must occur with 997.1 CARDIAC COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

410.01	ANTEROLAT AMI-INITIAL	427.31	ATRIAL FIBRILLATION
410.11	ANT AMI NEC-INITIAL	427.32	ATRIAL FLUTTER
410.21	INFEROLAT AMI-INITIAL	428.0	CHF NOS
410.31	INFEROPOST AMI-INITIAL	428.1	LEFT HEART FAILURE
410.41	INF AMI NEC-INITIAL	428.21	ACUTE SYSTOLIC HF
410.51	LAT AMI NEC-INITIAL	428.23	AC & CHR SYSTOLIC HF
410.61	POSTERIOR AMI-INITIAL	428.31	ACUTE DIASTOLIC HF
410.71	SUBEND INFARCT-INITIAL	428.33	AC & CHR DIASTOLIC HF
410.81	AMI NEC-INITIAL EPISODE	428.41	AC SYS & DIASTOLIC HF
410.91	AMI NOS-INITIAL EPISODE	428.43	ACCHR SYS & DIASTOLIC HF
427.0	PSVT	428.9	HEART FAILURE NOS
427.1	PVT		

Must not occur with V15.88 PERSONAL HISTORY OF FALL, PRESENTING HAZARDS TO HEALTH or V42.4 BONE REPLACED BY TRANSPLANT or V43.64 HIP JOINT REPLACED BY OTHER MEANS or V43.65 KNEE JOINT REPLACED BY OTHER MEANS or V45.4 ARTHRODESIS STATUS or V54.01 ENCOUNTER FOR REMOVAL OF INTERNAL FIXATION DEVICE or V54.02 ENCOUNTER FOR LENGTHENING/ADJUSTMENT OF GROWTH ROD or V54.09 OTHER AFTERCARE INVOLVING INTERNAL FIXATION DEVICE

996.78	COMP NEC ORTH DEV NEC
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Must not occur with V42.4 BONE REPLACED BY TRANSPLANT or V43.64 HIP JOINT REPLACED BY OTHER MEANS or V43.65 KNEE JOINT REPLACED BY OTHER MEANS or V45.4 ARTHRODESIS STATUS or V54.01 ENCOUNTER FOR REMOVAL OF INTERNAL FIXATION DEVICES or V54.02 ENCOUNTER FOR LENGTHENING/ ADJUSTMENT FOR GROWTH ROD or V54.09 OTHER AFTERCARE INVOLVING INTERNAL FIXATION DEVICE

996.77	COMP NEC D/T JT PROSTH
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Must occur with 997.3 RESPIRATORY COMPLICATIONS or 997.39 OTHER RESPIRATORY COMPLICATIONS

480.0	ADENOVIRAL PNEUMONIA	482.83	GRAM-NEG PNEUMONIA NEC
480.1	RSV PNEUMONIA	482.84	LEGIONNAIRES' DISEASE
480.2	PARAINFLUENZA VIR PNEUM	482.89	BACTERIAL PNEUMONIA NEC
480.3	SARS PNEUMONIA	482.9	BACTERIAL PNEUMONIA NOS
480.8	VIRAL PNEUMONIA NEC	483.0	M. PNEUMONIAE PNEUMONIA
481	PNEUMOCOCCAL PNEUMONIA	483.1	CHLAMYDIAL PNEUMONIA
482.0	K. PNEUMONIAE PNEUMONIA	483.8	PNEUMONIA D/T ORG NEC
482.1	PSEUDOMONAL PNEUMONIA	484.1	PNEUMONIA IN CMV DISEASE
482.2	H. INFLUENZAE PNEUMONIA	484.3	PNEUMONIA IN WHOOP COUGH
482.30	STREP PNEUMONIA NOS	484.6	PNEUM IN ASPERGILLOSIS
482.31	GROUP A STREP PNEUMONIA	484.7	PNEUM IN SYST MYCOSESNEC
482.32	GROUP B STREP PNEUMONIA	485	BRONCHOPNEUMONIA ORG NOS
482.39	STREP PNEUMONIA NEC	486	PNEUMONIA ORGANISM NOS
482.40	STAPH PNEUMONIA NOS	507.0	FOOD/VOMIT PNEUMONITIS
482.41	MSSA PNEUMONIA	511.9	PLEURAL EFFUSION NOS
482.42	MRSA PNEUMONIA	518.4	ACUTE LUNG EDEMA NOS
482.49	STAPH PNEUMONIA NEC	518.81	AC RESPIRATORY FAILURE
482.81	PNEUMONIA D/T ANAEROBES	518.84	AC & CHR RESP FAILURE
482.82	E. COLI PNEUMONIA	799.1	RESPIRATORY ARREST

Must occur with 997.4 DIGESTIVE SYSTEM COMPLICATION

560.1	PARALYTIC ILEUS
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Must occur with 997.5 URINARY COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

584.5	AC KF W TUBULAR NEPHR	599.0	URINARY TRACT INF NOS
584.8	ACUTE KIDNEY FAILURE NEC	788.20	RETENTION OF URINE NOS
584.9	ACUTE KIDNEY FAILURE NOS	788.29	RETENTION OF URINE NEC
593.9	RENAL/URETER DISORD NOS		

Must occur with 998.59 OTHER POSTOPERATIVE INFECTION

008.45	C. DIFFICILE ENTERITIS	038.42	E. COLI SEPTICEMIA
038.0	STREPTOCOCCAL SEPTICEMIA	038.43	PSEUDOMONAS SEPTICEMIA
038.10	STAPH SEPTICEMIA NOS	038.44	SERRATIA SEPTICEMIA
038.11	MSSA SEPTICEMIA	038.49	GRAM-NEG SEPTICEMIA NEC
038.12	MRSA SEPTICEMIA	038.8	SEPTICEMIA NEC
038.19	STAPH SEPTICEMIA NEC	038.9	SEPTICEMIA NOS
038.2	PNEUMOCOCCAL SEPTICEMIA	785.52	SEPTIC SHOCK
038.3	ANAEROBIC SEPTICEMIA	995.91	SEPSIS
038.40	GRAM-NEG SEPTICEMIA NOS	995.92	SEVERE SEPSIS
038.41	H. INFLUENZAE SEPTICEMIA		

Hip Replacement – Independent Complications

Independent complications are conditions that are clearly hospital-acquired or by the coding definition are defined as post-operative. These conditions were not counted as complications if the POA indicator was "Yes" or "Clinically Undetermined."

038.0	STREPTOCOCCAL SEPTICEMIA	484.1	PNEUMONIA IN CMV DISEASE
038.10	STAPH SEPTICEMIA NOS	484.3	PNEUMONIA IN WHOOP COUGH
038.11	MSSA SEPTICEMIA	484.6	PNEUM IN ASPERGILLOSIS
038.12	MRSA SEPTICEMIA	484.7	PNEUM IN SYST MYCOSESNEC
038.19	STAPH SEPTICEMIA NEC	485	BRONCHOPNEUMONIA ORG NOS
038.2	PNEUMOCOCCAL SEPTICEMIA	486	PNEUMONIA ORGANISM NOS
038.3	ANAEROBIC SEPTICEMIA	507.0	FOOD/VOMIT PNEUMONITIS
038.40	GRAM-NEG SEPTICEMIA NOS	512.1	IATROGENIC PNEUMOTHORAX
038.41	H. INFLUENZAE SEPTICEMIA	514	PULMONARY CONGESTION
038.42	E. COLI SEPTICEMIA	518.5	PI FOLLOW TRAUMA & SURG
038.43	PSEUDOMONAS SEPTICEMIA	518.51	AC RESP FAIL TRAUM/SURG
038.44	SERRATIA SEPTICEMIA	518.52	PI NEC FOLLOW TRAUM/SURG
038.49	GRAM-NEG SEPTICEMIA NEC	518.53	A&C RESP FAIL TRAUM/SURG
038.8	SEPTICEMIA NEC	518.7	TRALI
038.9	SEPTICEMIA NOS	518.81	AC RESPIRATORY FAILURE
286.6	DEFIBRATION SYNDROME	584.5	AC KF W TUBULAR NEPHR
292.12	DRG IND PSYCH W HALLUCIN	584.8	ACUTE KIDNEY FAILURE NEC
292.81	DRUG INDUCED DELIRIUM	584.9	ACUTE KIDNEY FAILURE NOS
293.0	DELIRIUM D/T CCE	707.0	PRESSURE ULCER
410.01	ANTEROLAT AMI-INITIAL	707.00	PRESSURE ULCER-SITE NOS
410.11	ANT AMI NEC-INITIAL	707.01	PRESSURE ULCER-ELBOW
410.21	INFEROLAT AMI-INITIAL	707.02	PRESSURE ULCER-UP BACK
410.31	INFEROPOST AMI-INITIAL	707.03	PRESSURE ULCER-LOW BACK
410.41	INF AMI NEC-INITIAL	707.04	PRESSURE ULCER-HIP
410.51	LAT AMI NEC-INITIAL	707.05	PRESSURE ULCER-BUTTOCK
410.61	POSTERIOR AMI-INITIAL	707.06	PRESSURE ULCER-ANKLE
410.71	SUBEND INFARCT-INITIAL	707.07	PRESSURE ULCER-HEEL
410.81	AMI NEC-INITIAL EPISODE	707.09	PRESSURE ULCER-SITE NEC
410.91	AMI NOS-INITIAL EPISODE	780.97	ALTERED MENTAL STATUS
415.11	IATRO PULM EMBOL/INFARCT	785.50	SHOCK NOS
415.12	SEPTIC PULMON EMBOLISM	785.51	CARDIOGENIC SHOCK
415.19	PULMON EMBOL/INFARCT NEC	785.52	SEPTIC SHOCK
423.3	CARDIAC TAMPONADE	799.1	RESPIRATORY ARREST
427.5	CARDIAC ARREST	867.0	BLAD/URETHRA INJURY-CLSD
449	SEPTIC ARTERIAL EMBOLISM	995.91	SEPSIS
453.40	ACUTE DVT LEG NOS	995.92	SEVERE SEPSIS
453.41	ACUTE DVT PROXIMAL LEG	996.42	DISLOCATION JOINT PROSTH
453.42	ACUTE DVT DISTAL LEG	996.44	PERI-PROSTHETIC FRACTURE
480.0	ADENOVIRAL PNEUMONIA	997.02	IATROGEN CV INFARCT/HEM
480.1	RSV PNEUMONIA	997.09	NERV SYST SURG COMP NEC
480.2	PARAINFLUENZA VIR PNEUM	997.1	SURG COMP-HEART
480.3	SARS PNEUMONIA	997.3	SURG COMP-RESP NEC
480.8	VIRAL PNEUMONIA NEC	997.31	VENT ASSOC PNEUMONIA
481	PNEUMOCOCCAL PNEUMONIA	997.32	POSTPX ASP PNEUMONIA
482.0	K. PNEUMONIAE PNEUMONIA	997.39	OTH SURG COMP-RESP
482.1	PSEUDOMONAL PNEUMONIA	997.4	SURG COMP-DIGESTIVE
482.2	H. INFLUENZAE PNEUMONIA	997.5	SURG COMP-URINARY NEC
482.30	STREP PNEUMONIA NOS	998.0	POSTOPERATIVE SHOCK
482.31	GROUP A STREP PNEUMONIA	998.00	POSTOP SHOCK NOS
482.32	GROUP B STREP PNEUMONIA	998.01	POSTOP CARDIOGENIC SHOCK
482.39	STREP PNEUMONIA NEC	998.02	POSTOP SEPTIC SHOCK
482.40	STAPH PNEUMONIA NOS	998.09	POSTOP SHOCK NEC
482.41	MSSA PNEUMONIA	998.11	HEMORRHAGE COMP PX

482.42	MRSA PNEUMONIA	998.2	ACCIDENTAL OP LACERATION
482.49	STAPH PNEUMONIA NEC	998.30	DISRUPTION WOUND NOS
482.81	PNEUMONIA D/T ANAEROBES	998.31	DISRUPT INTERNAL OP WND
482.82	E. COLI PNEUMONIA	998.32	DISRUPT EXTERNAL OP WND
482.83	GRAM-NEG PNEUMONIA NEC	998.59	POSTOP INFECTION NEC
482.84	LEGIONNAIRES' DISEASE	999.31	INFECT NEC & NOS D/T CVC
482.89	BACTERIAL PNEUMONIA NEC	999.32	BLOODSTREAM INF D/T CVC
482.9	BACTERIAL PNEUMONIA NOS	999.34	AC INF POST TRANSFUSION
483.0	M. PNEUMONIAE PNEUMONIA	999.39	INFECT COMP MED CARE NEC
483.1	CHLAMYDIAL PNEUMONIA	999.8	TRANSF/INFUS RXN NEC&NOS
483.8	PNEUMONIA D/T ORG NEC		

Hip Replacement – Dependent Complications

Dependent complications are conditions that must either have the POA indicator set to "No," or if the POA indicator is set to "Unknown" or is missing, there must also be the listed 900 post-operative complication code present in the patient record.

Must occur with 997.02 IATROGENIC CEREBROVASCULAR INFARCTION OR HEMORRHAGE

434.11	CEREBRAL EMBOL W INFARCT	434.91	CEREB ART OCCL W INFARCT
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Must occur with 997.1 CARDIAC COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

427.0	PSVT	428.23	AC & CHR SYSTOLIC HF
427.1	PVT	428.31	ACUTE DIASTOLIC HF
427.31	ATRIAL FIBRILLATION	428.33	AC & CHR DIASTOLIC HF
427.32	ATRIAL FLUTTER	428.41	AC SYS & DIASTOLIC HF
428.0	CHF NOS	428.43	ACC HR SYS & DIASTOLIC HF
428.1	LEFT HEART FAILURE	428.9	HEART FAILURE NOS
428.21	ACUTE SYSTOLIC HF		

Must occur with 997.3 RESPIRATORY COMPLICATIONS or 997.39 OTHER RESPIRATORY COMPLICATIONS

511.9	PLEURAL EFFUSION NOS	518.84	AC & CHR RESP FAILURE
518.4	ACUTE LUNG EDEMA NOS		

Must occur with 997.4 DIGESTIVE SYSTEM COMPLICATION

560.1	PARALYTIC ILEUS
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Must occur with 997.5 URINARY COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

593.9	RENAL/URETER DISORD NOS	788.20	RETENTION OF URINE NOS
599.0	URINARY TRACT INF NOS	788.29	RETENTION OF URINE NEC

Must occur with 998.59 OTHER POSTOPERATIVE INFECTION

008.45	C. DIFFICILE ENTERITIS
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Must not occur with V15.88 PERSONAL HISTORY OF FALL, PRESENTING HAZARDS TO HEALTH or V42.4 BONE REPLACED BY TRANSPLANT or V43.64 HIP JOINT PREPLACED BY OTHER MEANS or V43.65 KNEE JOINT REPLACED BY OTHER MEANS or V45.4 ARTHRODESIS STATUS or V54.01 ENCOUNTER FOR REMOVAL OF INTERNAL FIXATION DEVICE or V54.02 ENCOUNTER FOR LENGTHENING/ADJUSTMENT OF GROWTH ROD or V54.09 OTHER AFTERCARE INVOLVING INTERNAL FIXATION DEVICE

996.40	MECH COMP INT ORTH NOS	996.77	COMP NEC D/T JT PROSTH
996.47	MECH COMP JT PROSTH NEC	996.78	COMP NEC ORTH DEV NEC
996.49	MECH COMP INT ORTH NEC		

Peripheral Vascular Bypass – Independent Complications

Independent complications are conditions that are clearly hospital-acquired or by the coding definition are defined as post-operative. These conditions were not counted as complications if the POA indicator was "Yes" or "Clinically Undetermined."

286.6	DEFIBRATION SYNDROME	957.1	INJURY TO NERVE NEC
292.81	DRUG INDUCED DELIRIUM	995.91	SEPSIS
293.0	DELIRIUM D/T CCE	996.01	MECH COMP CARD PACEMAKER
348.1	ANOXIC BRAIN DAMAGE	996.1	MECH COMP OTH VASC DEV
415.12	SEPTIC PULMON EMBOLISM	996.74	COMP NEC D/T VASC DEVNEC
415.19	PULMON EMBOL/INFARCT NEC	997.01	CNS SURG COMP
423.3	CARDIAC TAMPONADE	997.02	IATROGEN CV INFARCT/HEM
427.41	VENTRICULAR FIBRILLATION	997.09	NERV SYST SURG COMP NEC
427.5	CARDIAC ARREST	997.1	SURG COMP-HEART
434.01	CEREB THROMB W INFARCT	997.2	SURG COMP-PERIPH VASC
434.11	CEREBRAL EMBOL W INFARCT	997.3	SURG COMP-RESP NEC
434.91	CEREB ART OCCL W INFARCT	997.31	VENT ASSOC PNEUMONIA
449	SEPTIC ARTERIAL EMBOLISM	997.32	POSTPX ASP PNEUMONIA
453.40	ACUTE DVT LEG NOS	997.39	OTH SURG COMP-RESP
453.41	ACUTE DVT PROXIMAL LEG	997.4	SURG COMP-DIGESTIVE
453.42	ACUTE DVT DISTAL LEG	997.5	SURG COMP-URINARY NEC
512.1	IATROGENIC PNEUMOTHORAX	997.91	SURG COMP-HYPERTENSION
514	PULMONARY CONGESTION	998.0	POSTOPERATIVE SHOCK
518.0	PULMONARY COLLAPSE	998.00	POSTOP SHOCK NOS
518.4	ACUTE LUNG EDEMA NOS	998.01	POSTOP CARDIOGENIC SHOCK
518.5	PI FOLLOW TRAUMA & SURG	998.02	POSTOP SEPTIC SHOCK
518.51	AC RESP FAIL TRAUM/SURG	998.09	POSTOP SHOCK NEC
518.52	PI NEC FOLLOW TRAUM/SURG	998.11	HEMORRHAGE COMP PX
518.53	A&C RESP FAIL TRAUM/SURG	998.2	ACCIDENTAL OP LACERATION
518.7	TRALI	998.30	DISRUPTION WOUND NOS
518.84	AC & CHR RESP FAILURE	998.31	DISRUPT INTERNAL OP WND
780.01	COMA	998.32	DISRUPT EXTERNAL OP WND
780.97	ALTERED MENTAL STATUS	998.59	POSTOP INFECTION NEC
785.50	SHOCK NOS	999.31	INFECT NEC & NOS D/T CVC
785.51	CARDIOGENIC SHOCK	999.32	BLOODSTREAM INF D/T CVC
785.52	SEPTIC SHOCK	999.34	AC INF POST TRANSFUSION
788.29	RETENTION OF URINE NEC	999.39	INFECT COMP MED CARE NEC
867.0	BLAD/URETHRA INJURY-CLSD		

Peripheral Vascular Bypass – Dependent Complications

Dependent complications are conditions that must either have the POA indicator set to "No," or if the POA indicator is set to "Unknown" or is missing, there must also be the listed 900 post-operative complication code present in the patient record.

Must occur with 997.1 CARDIAC COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

410.01	ANTEROLAT AMI-INITIAL	427.32	ATRIAL FLUTTER
410.11	ANT AMI NEC-INITIAL	427.89	OTH CARDIAC DYSRHYTHMIAS
410.21	INFEROLAT AMI-INITIAL	428.0	CHF NOS
410.51	LAT AMI NEC-INITIAL	428.1	LEFT HEART FAILURE
410.61	POSTERIOR AMI-INITIAL	428.21	ACUTE SYSTOLIC HF
410.71	SUBEND INFARCT-INITIAL	428.23	AC & CHR SYSTOLIC HF
410.81	AMI NEC-INITIAL EPISODE	428.31	ACUTE DIASTOLIC HF
410.91	AMI NOS-INITIAL EPISODE	428.33	AC & CHR DIASTOLIC HF
427.01	PSVT	428.41	AC SYS & DIASTOLIC HF
427.1	PVT	428.43	ACCHR SYS & DIASTOLIC HF
427.31	ATRIAL FIBRILLATION	428.9	HEART FAILURE NOS

Must occur with 997.3 RESPIRATORY COMPLICATIONS or 997.39 OTHER RESPIRATORY COMPLICATIONS

481	PNEUMOCOCCAL PNEUMONIA	482.83	GRAM-NEG PNEUMONIA NEC
482.0	K. PNEUMONIAE PNEUMONIA	482.84	LEGIONNAIRES' DISEASE
482.1	PSEUDOMONAL PNEUMONIA	482.89	BACTERIAL PNEUMONIA NEC
482.2	H. INFLUENZAE PNEUMONIA	482.9	BACTERIAL PNEUMONIA NOS
482.30	STREP PNEUMONIA NOS	483.0	M. PNEUMONIAE PNEUMONIA
482.31	GROUP A STREP PNEUMONIA	483.1	CHLAMYDIAL PNEUMONIA
482.32	GROUP B STREP PNEUMONIA	483.8	PNEUMONIA D/T ORG NEC
482.39	STREP PNEUMONIA NEC	484.3	PNEUMONIA IN WHOOP COUGH
482.40	STAPH PNEUMONIA NOS	484.6	PNEUM IN ASPERGILLOSIS
482.41	MSSA PNEUMONIA	484.7	PNEUM IN SYST MYCOSESNEC
482.42	MRSA PNEUMONIA	485	BRONCHOPNEUMONIA ORG NOS
482.49	STAPH PNEUMONIA NEC	486	PNEUMONIA ORGANISM NOS
482.81	PNEUMONIA D/T ANAEROBES	507.0	FOOD/VOMIT PNEUMONITIS
482.82	E. COLI PNEUMONIA	518.81	AC RESPIRATORY FAILURE

Must occur with 997.4 DIGESTIVE SYSTEM COMPLICATION

560.1	PARALYTIC ILEUS
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Must occur with 997.5 URINARY COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

584.5	AC KF W TUBULAR NEPHR	593.9	RENAL/URETER DISORD NOS
584.8	ACUTE KIDNEY FAILURE NEC	599.0	URINARY TRACT INF NOS
584.9	ACUTE KIDNEY FAILURE NOS	788.20	RETENTION OF URINE NOS

Must occur with 998.59 OTHER POSTOPERATIVE INFECTION

008.45	C. DIFFICILE ENTERITIS	038.41	H. INFLUENZAE SEPTICEMIA
038.0	STREPTOCOCCAL SEPTICEMIA	038.42	E. COLI SEPTICEMIA
038.10	STAPH SEPTICEMIA NOS	038.43	PSEUDOMONAS SEPTICEMIA
038.11	MSSA SEPTICEMIA	038.44	SERRATIA SEPTICEMIA
038.12	MRSA SEPTICEMIA	038.49	GRAM-NEG SEPTICEMIA NEC
038.19	STAPH SEPTICEMIA NEC	038.8	SEPTICEMIA NEC
038.2	PNEUMOCOCCAL SEPTICEMIA	038.9	SEPTICEMIA NOS
038.3	ANAEROBIC SEPTICEMIA	995.92	SEVERE SEPSIS
038.40	GRAM-NEG SEPTICEMIA NOS		

Must occur with 998.59 OTHER POSTOPERATIVE INFECTION or 998.51 INFECTED POSTOPERATIVE SEROMA

041.04	GROUP D STREP INFECTION	041.7	PSEUDOMONAS INFECT NOS
041.11	MSSA		

Prostatectomy – Independent Complications

Independent complications are conditions that are clearly hospital-acquired or by the coding definition are defined as post-operative. These conditions were not counted as complications if the POA indicator was "Yes" or "Clinically Undetermined."

286.6	DEFIBRATION SYNDROME	567.21	GENERALIZED PERITONITIS
292.81	DRUG INDUCED DELIRIUM	567.22	PERITONEAL ABSCESS
293.0	DELIRIUM D/T CCE	567.29	OTH SUPPURAT PERITONITIS
293.9	TRANS MENT DIS CCE NOS	567.89	OTHER PERITONITIS
410.01	ANTEROLAT AMI-INITIAL	567.9	PERITONITIS NOS
410.11	ANT AMI NEC-INITIAL	568.81	HEMOPERITONEUM
410.21	INFEROLAT AMI-INITIAL	569.83	INTESTINAL PERFORATION
410.31	INFEROPOST AMI-INITIAL	785.52	SEPTIC SHOCK
410.41	INF AMI NEC-INITIAL	785.59	SHOCK W/O TRAUMA NEC
410.51	LAT AMI NEC-INITIAL	790.7	BACTEREMIA
410.61	POSTERIOR AMI-INITIAL	996.62	INFECT D/T VASC DEVICE
410.71	SUBEND INFARCT-INITIAL	996.76	COMP NEC D/T GU DEVICE
410.81	AMI NEC-INITIAL EPISODE	997.02	IATROGEN CV INFARCT/HEM
410.91	AMI NOS-INITIAL EPISODE	997.1	SURG COMP-HEART
415.11	IATRO PULM EMBOL/INFARCT	997.3	SURG COMP-RESP NEC
415.12	SEPTIC PULMON EMBOLISM	997.31	VENT ASSOC PNEUMONIA
415.19	PULMON EMBOL/INFARCT NEC	997.32	POSTPX ASP PNEUMONIA
423.3	CARDIAC TAMPONADE	997.39	OTH SURG COMP-RESP
427.5	CARDIAC ARREST	997.4	SURG COMP-DIGESTIVE
434.91	CEREB ART OCCL W INFARCT	997.5	SURG COMP-URINARY NEC
449	SEPTIC ARTERIAL EMBOLISM	998.0	POSTOPERATIVE SHOCK
453.40	ACUTE DVT LEG NOS	998.00	POSTOP SHOCK NOS
453.41	ACUTE DVT PROXIMAL LEG	998.01	POSTOP CARDIOGENIC SHOCK
453.42	ACUTE DVT DISTAL LEG	998.02	POSTOP SEPTIC SHOCK
458.29	IATROGEN HYPOTENSION NEC	998.09	POSTOP SHOCK NEC
507.0	FOOD/VOMIT PNEUMONITIS	998.11	HEMORRHAGE COMP PX
512.1	IATROGENIC PNEUMOTHORAX	998.12	HEMATOMA COMPLICATING PX
518.0	PULMONARY COLLAPSE	998.2	ACCIDENTAL OP LACERATION
518.4	ACUTE LUNG EDEMA NOS	998.30	DISRUPTION WOUND NOS
518.5	PI FOLLOW TRAUMA & SURG	998.31	DISRUPT INTERNAL OP WND
518.51	AC RESP FAIL TRAUM/SURG	998.32	DISRUPT EXTERNAL OP WND
518.52	PI NEC FOLLOW TRAUM/SURG	998.4	FB LEFT DURING PROCEDURE
518.53	A&C RESP FAIL TRAUM/SURG	998.59	POSTOP INFECTION NEC
518.7	TRALI	998.6	PERSIST POSTOP FISTULA
518.81	AC RESPIRATORY FAILURE	999.31	INFECT NEC & NOS D/T CVC
518.84	AC & CHR RESP FAILURE	999.32	BLOODSTREAM INF D/T CVC
54.12	REOPEN RECENT LAP SITE	999.34	AC INF POST TRANSFUSION
54.61	RECLOSE POSTOP DISRUPT	999.39	INFECT COMP MED CARE NEC

Prostatectomy – Dependent Complications

Dependent complications are conditions that must either have the POA indicator set to "No," or if the POA indicator is set to "Unknown" or is missing, there must also be the listed 900 post-operative complication code present in the patient record.

Must occur with 997.02 IATROGENIC CEREBROVASCULAR INFARCTION OR HEMORRHAGE

434.11	CEREBRAL EMBOL W INFARCT
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Must occur with 997.1 CARDIAC COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

427.0	PSVT	428.21	ACUTE SYSTOLIC HF
427.1	PVT	428.23	AC & CHR SYSTOLIC HF
427.31	ATRIAL FIBRILLATION	428.31	ACUTE DIASTOLIC HF
427.32	ATRIAL FLUTTER	428.33	AC & CHR DIASTOLIC HF
427.41	VENTRICULAR FIBRILLATION	428.41	AC SYS & DIASTOLIC HF
427.89	OTH CARDIAC DYSRHYTHMIAS	428.43	ACCHR SYS & DIASTOLIC HF
428.0	CHF NOS	428.9	HEART FAILURE NOS
428.1	LEFT HEART FAILURE		

Must occur with 997.3 RESPIRATORY COMPLICATIONS or 997.39 OTHER RESPIRATORY COMPLICATIONS

481	PNEUMOCOCCAL PNEUMONIA	482.82	E. COLI PNEUMONIA
482.0	K. PNEUMONIAE PNEUMONIA	482.83	GRAM-NEG PNEUMONIA NEC
482.1	PSEUDOMONAL PNEUMONIA	482.84	LEGIONNAIRES' DISEASE
482.2	H. INFLUENZAE PNEUMONIA	482.89	BACTERIAL PNEUMONIA NEC
482.30	STREP PNEUMONIA NOS	482.9	BACTERIAL PNEUMONIA NOS
482.31	GROUP A STREP PNEUMONIA	483.0	M. PNEUMONIAE PNEUMONIA
482.32	GROUP B STREP PNEUMONIA	483.1	CHLAMYDIAL PNEUMONIA
482.39	STREP PNEUMONIA NEC	483.8	PNEUMONIA D/T ORG NEC
482.40	STAPH PNEUMONIA NOS	484.3	PNEUMONIA IN WHOOP COUGH
482.41	MSSA PNEUMONIA	484.6	PNEUM IN ASPERGILLOSIS
482.42	MRSA PNEUMONIA	484.7	PNEUM IN SYST MYCOSESNEC
482.49	STAPH PNEUMONIA NEC	485	BRONCHOPNEUMONIA ORG NOS
482.81	PNEUMONIA D/T ANAEROBES	486	PNEUMONIA ORGANISM NOS

Must occur with 997.4 DIGESTIVE SYSTEM COMPLICATION

560.1	PARALYTIC ILEUS
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Must occur with 997.5 URINARY COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

584.5	AC RF W TUBULAR NEPHR	584.9	ACUTE KIDNEY FAILURE NOS
584.8	ACUTE KIDNEY FAILURE NEC	599.0	URINARY TRACT INF NOS

Must occur with 998.59 OTHER POSTOPERATIVE INFECTION

008.45	C. DIFFICILE ENTERITIS	038.42	E. COLI SEPTICEMIA
038.0	STREPTOCOCCAL SEPTICEMIA	038.43	PSEUDOMONAS SEPTICEMIA
038.10	STAPH SEPTICEMIA NOS	038.44	SERRATIA SEPTICEMIA
038.11	MSSA SEPTICEMIA	038.49	GRAM-NEG SEPTICEMIA NEC
038.12	MRSA SEPTICEMIA	038.8	SEPTICEMIA NEC
038.19	STAPH SEPTICEMIA NEC	038.9	SEPTICEMIA NOS
038.2	PNEUMOCOCCAL SEPTICEMIA	682.2	TRUNK CELLULITIS
038.3	ANAEROBIC SEPTICEMIA	995.91	SEPSIS
038.40	GRAM-NEG SEPTICEMIA NOS	995.92	SEVERE SEPSIS
038.41	H. INFLUENZAE SEPTICEMIA		

Total Knee Replacement – Independent Complications

Independent complications are conditions that are clearly hospital-acquired or by the coding definition are defined as post-operative. These conditions were not counted as complications if the POA indicator was "Yes" or "Clinically Undetermined."

038.0	STREPTOCOCCAL SEPTICEMIA	483.8	PNEUMONIA D/T ORG NEC
038.10	STAPH SEPTICEMIA NOS	484.1	PNEUMONIA IN CMV DISEASE
038.11	MSSA SEPTICEMIA	484.3	PNEUMONIA IN WHOOP COUGH
038.12	MRSA SEPTICEMIA	484.6	PNEUM IN ASPERGILLOSIS
038.19	STAPH SEPTICEMIA NEC	484.7	PNEUM IN SYST MYCOSESNEC
038.2	PNEUMOCOCCAL SEPTICEMIA	485	BRONCHOPNEUMONIA ORG NOS
038.3	ANAEROBIC SEPTICEMIA	486	PNEUMONIA ORGANISM NOS
038.40	GRAM-NEG SEPTICEMIA NOS	507.0	FOOD/VOMIT PNEUMONITIS
038.41	H. INFLUENZAE SEPTICEMIA	512.1	IATROGENIC PNEUMOTHORAX
038.42	E. COLI SEPTICEMIA	514	PULMONARY CONGESTION
038.43	PSEUDOMONAS SEPTICEMIA	518.5	PI FOLLOW TRAUMA & SURG
038.44	SERRATIA SEPTICEMIA	518.51	AC RESP FAIL TRAUM/SURG
038.49	GRAM-NEG SEPTICEMIA NEC	518.52	PI NEC FOLLOW TRAUM/SURG
038.8	SEPTICEMIA NEC	518.53	A&C RESP FAIL TRAUM/SURG
038.9	SEPTICEMIA NOS	518.7	TRALI
286.6	DEFIBRATION SYNDROME	518.81	AC RESPIRATORY FAILURE
292.12	DRG IND PSYCH W HALLUCIN	584.5	AC KF W TUBULAR NEPHR
292.81	DRUG INDUCED DELIRIUM	584.8	ACUTE KIDNEY FAILURE NEC
293.0	DELIRIUM D/T CCE	584.9	ACUTE KIDNEY FAILURE NOS
410.01	ANTEROLAT AMI-INITIAL	707.0	PRESSURE ULCER
410.11	ANT AMI NEC-INITIAL	707.00	PRESSURE ULCER-SITE NOS
410.21	INFEROLAT AMI-INITIAL	707.01	PRESSURE ULCER-ELBOW
410.31	INFEROPOST AMI-INITIAL	707.02	PRESSURE ULCER-UP BACK
410.41	INF AMI NEC-INITIAL	707.03	PRESSURE ULCER-LOW BACK
410.51	LAT AMI NEC-INITIAL	707.04	PRESSURE ULCER-HIP
410.61	POSTERIOR AMI-INITIAL	707.05	PRESSURE ULCER-BUTTOCK
410.71	SUBEND INFARCT-INITIAL	707.06	PRESSURE ULCER-ANKLE
410.81	AMI NEC-INITIAL EPISODE	707.07	PRESSURE ULCER-HEEL
410.91	AMI NOS-INITIAL EPISODE	707.09	PRESSURE ULCER-SITE NEC
415.11	IATRO PULM EMBOL/INFARCT	780.97	ALTERED MENTAL STATUS
415.12	SEPTIC PULMON EMBOLISM	785.50	SHOCK NOS
415.19	PULMON EMBOL/INFARCT NEC	785.51	CARDIOGENIC SHOCK
423.3	CARDIAC TAMPONADE	785.52	SEPTIC SHOCK
427.5	CARDIAC ARREST	799.1	RESPIRATORY ARREST
428.31	ACUTE DIASTOLIC HF	867.0	BLAD/URETHRA INJURY-CLSD
428.33	AC & CHR DIASTOLIC HF	995.91	SEPSIS
449	SEPTIC ARTERIAL EMBOLISM	995.92	SEVERE SEPSIS
453.40	ACUTE DVT LEG NOS	996.42	DISLOCATION JOINT PROSTH
453.41	ACUTE DVT PROXIMAL LEG	996.44	PERI-PROSTHETIC FRACTURE
453.42	ACUTE DVT DISTAL LEG	997.02	IATROGEN CV INFARCT/HEM
480.0	ADENOVIRAL PNEUMONIA	997.09	NERV SYST SURG COMP NEC
480.1	RSV PNEUMONIA	997.1	SURG COMP-HEART
480.2	PARAINFLUENZA VIR PNEUM	997.3	SURG COMP-RESP NEC
480.3	SARS PNEUMONIA	997.31	VENT ASSOC PNEUMONIA
480.8	VIRAL PNEUMONIA NEC	997.32	POSTPX ASP PNEUMONIA
481	PNEUMOCOCCAL PNEUMONIA	997.39	OTH SURG COMP-RESP
482.0	K. PNEUMONIAE PNEUMONIA	997.4	SURG COMP-DIGESTIVE
482.1	PSEUDOMONAL PNEUMONIA	997.5	SURG COMP-URINARY NEC
482.2	H. INFLUENZAE PNEUMONIA	998.0	POSTOPERATIVE SHOCK
482.30	STREP PNEUMONIA NOS	998.00	POSTOP SHOCK NOS
482.31	GROUP A STREP PNEUMONIA	998.01	POSTOP CARDIOGENIC SHOCK
482.32	GROUP B STREP PNEUMONIA	998.02	POSTOP SEPTIC SHOCK
482.39	STREP PNEUMONIA NEC	998.09	POSTOP SHOCK NEC

482.40	STAPH PNEUMONIA NOS	998.11	HEMORRHAGE COMP PX
482.41	MSSA PNEUMONIA	998.2	ACCIDENTAL OP LACERATION
482.42	MRSA PNEUMONIA	998.30	DISRUPTION WOUND NOS
482.49	STAPH PNEUMONIA NEC	998.31	DISRUPT INTERNAL OP WND
482.81	PNEUMONIA D/T ANAEROBES	998.32	DISRUPT EXTERNAL OP WND
482.82	E. COLI PNEUMONIA	998.59	POSTOP INFECTION NEC
482.83	GRAM-NEG PNEUMONIA NEC	999.31	INFECT NEC & NOS D/T CVC
482.84	LEGIONNAIRES' DISEASE	999.32	BLOODSTREAM INF D/T CVC
482.89	BACTERIAL PNEUMONIA NEC	999.34	AC INF POST TRANSFUSION
482.9	BACTERIAL PNEUMONIA NOS	999.39	INFECT COMP MED CARE NEC
483.0	M. PNEUMONIAE PNEUMONIA	999.8	TRANSF/INFUS RXN NEC&NOS
483.1	CHLAMYDIAL PNEUMONIA		

Total Knee Replacement – Dependent Complications

Dependent complications are conditions that must either have the POA indicator set to "No," or if the POA indicator is set to "Unknown" or is missing, there must also be the listed 900 post-operative complication code present in the patient record.

Must occur with 997.02 IATROGENIC CEREBROVASCULAR INFARCTION OR HEMORRHAGE

434.11	CEREBRAL EMBOL W INFARCT	434.91	CEREB ART OCCL W INFARCT
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Must occur with 997.1 CARDIAC COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

427.0	PSVT	428.21	ACUTE SYSTOLIC HF
427.1	PVT	428.23	AC & CHR SYSTOLIC HF
427.31	ATRIAL FIBRILLATION	428.41	AC SYS & DIASTOLIC HF
427.32	ATRIAL FLUTTER	428.43	ACCHR SYS & DIASTOLIC HF
428.0	CHF NOS	428.9	HEART FAILURE NOS
428.1	LEFT HEART FAILURE		

Must occur with 997.3 RESPIRATORY COMPLICATIONS or 997.39 OTHER RESPIRATORY COMPLICATIONS

511.9	PLEURAL EFFUSION NOS	518.84	AC & CHR RESP FAILURE
518.4	ACUTE LUNG EDEMA NOS		

Must occur with 997.4 DIGESTIVE SYSTEM COMPLICATION

560.1	PARALYTIC ILEUS
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Must occur with 997.5 URINARY COMPLICATIONS, NOT ELSEWHERE CLASSIFIED

593.9	RENAL/URETER DISORD NOS	788.20	RETENTION OF URINE NOS
599.0	URINARY TRACT INF NOS	788.29	RETENTION OF URINE NEC

Must occur with 998.59 OTHER POSTOPERATIVE INFECTION

008.45	C. DIFFICILE ENTERITIS
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Must not occur with V15.88 PERSONAL HISTORY OF FALL, PRESENTING HAZARDS TO HEALTH or V42.4 BONE REPLACED BY TRANSPLANT or V43.64 HIP JOINT REPLACED BY OTHER MEANS or V43.65 KNEE JOINT REPLACED BY OTHER MEANS or V45.4 ARTHRODESIS STATUS or V54.01 ENCOUNTER FOR REMOVAL OF INTERNAL FIXATION DEVICE or V54.02 ENCOUNTER FOR LENGTHENING/ADJUSTMENT OF GROWTH ROD or V54.09 OTHER AFTERCARE INVOLVING INTERNAL FIXATION DEVICE

996.40	MECH COMP INT ORTH NOS	996.49	MECH COMP INT ORTH NEC
996.47	MECH COMP JT PROSTH NEC	996.78	COMP NEC ORTH DEV NEC

Must not occur with V42.4 BONE REPLACED BY TRANSPLANT or V43.64 HIP JOINT REPLACED BY OTHER MEANS or V43.65 KNEE JOINT REPLACED BY OTHER MEANS or V45.4 ARTHRODESIS STATUS or V54.01 ENCOUNTER FOR REMOVAL OF INTERNAL FIXATION DEVICES or V54.02 ENCOUNTER FOR LENGTHENING/ADJUSTMENT FOR GROWTH ROD or V54.09 OTHER AFTERCARE INVOLVING INTERNAL FIXATION DEVICE

996.77	COMP NEC D/T JT PROSTH
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Appendix D. Top Five Risk Factors by Procedure or Diagnosis

Appendectomy	
Diag 276.1	HYPOSMOLALITY AND/OR HYPONATREMIA
Diag 785.0	TACHYCARDIA, UNSPECIFIED
Diag 038.0, 038.10, 038.11, 038.19, 038.2, 038.3, 038.40, 038.41, 038.42, 038.43, 038.44, 038.49, 038.8, 038.9	SEPSIS
Diag 540.0	ACUTE APPENDICITIS WITH GENERALIZED PERITONITIS
Diag 540.1	ACUTE APPENDICITIS WITH PERITONEAL ABSCESS
Back and Neck Surgery (Spinal Fusion)	
Proc 81.04	DORSAL AND DORSOLUMBAR FUSION OF THE ANTERIOR COLUMN, ANTERIOR TECHNIQUE
Diag 260, 261, 262, 263.0, 263.1, 263.2, 263.8, 263.9	MALNUTRITION
Diag 344.00	QUADRIPLEGIA, UNSPECIFIED
Diag 348.30, 348.31, 348.39, 349.82	ENCEPHALOPATHY
Diag 403.11, 403.91	HYPERTENSIVE CHRONIC KIDNEY DISEASE
Back and Neck Surgery (Except Spinal Fusion)	
Proc 99.04	TRANSFUSION OF PACKED CELLS
Proc 03.53	REPAIR OF VERTEBRAL FRACTURE
Diag 260, 261, 262, 263.0, 263.1, 263.2, 263.8, 263.9	MALNUTRITION
Diag 324.1	INTRASPINAL ABSCESS
Diag 348.30, 348.31, 348.39, 349.82	ENCEPHALOPATHY
Bowel Obstruction	
Diag 585.6	END STAGE RENAL DISEASE
Diag 518.81	ACUTE RESPIRATORY FAILURE
Diag 038.0, 038.10, 038.11, 038.19, 038.2, 038.3, 038.40, 038.41, 038.42, 038.43, 038.44, 038.49, 038.8, 038.9	SEPSIS
Diag 410.71	ACUTE MYOCARDIAL INFARCTION, SUBENDOCARDIAL INFARCTION, INITIAL EPISODE OF CARE
Proc 45.73	OPEN AND OTHER RIGHT HEMICOLECTOMY
Carotid Surgery	
Proc 39.74	ENDOVASCULAR REMOVAL OF OBSTRUCTION FROM HEAD AND NECK VESSEL(S)
Diag 428.31, 428.33	ACUTE DIASTOLIC HEART FAILURE
Diag 428.21, 428.23	ACUTE SYSTOLIC HEART FAILURE
Diag 348.30, 348.31, 348.39, 349.82	ENCEPHALOPATHY
Diag 585.4	CHRONIC KIDNEY DISEASE, STAGE IV (SEVERE)
Chronic Obstructive Pulmonary Disease (COPD)	
Diag 038.0, 038.10, 038.11, 038.19, 038.2, 038.3, 038.40, 038.41, 038.42, 038.43, 038.44, 038.49, 038.8, 038.9	SEPSIS
Diag 507.0	PNEUMONITIS DUE TO INHALATION OF FOOD OR VOMITUS
Diag 518.81	ACUTE RESPIRATORY FAILURE
Diag 410.71	ACUTE MYOCARDIAL INFARCTION, SUBENDOCARDIAL INFARCTION, INITIAL EPISODE OF CARE
Diag 518.84	ACUTE AND CHRONIC RESPIRATORY FAILURE

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Coronary Artery Bypass Graft (CABG)	
Proc 37.61	IMPLANT OF PULSATION BALLOON
Diag 585.6	END STAGE RENAL DISEASE
Diag 427.5	CARDIAC ARREST
Proc 37.33	EXCISION OR DESTRUCTION OF OTHER LESION OR TISSUE OF HEART, OPEN APPROACH
Diag 260, 261, 262, 263.0, 263.1, 263.2, 263.8, 263.9	MALNUTRITION
Coronary Interventional Procedures (Angioplasty/Stent)	
Proc 37.61	IMPLANT OF PULSATION BALLOON
Diag 410.01, 410.11, 410.21, 410.51, 410.61, 410.81, 410.91	ANTERIOR/LATERAL WALL AMI
Diag 585.6	END STAGE RENAL DISEASE
Diag 410.31, 410.41	INFERIOR WALL AMI
Diag 427.5	CARDIAC ARREST
Diabetic Acidosis and Coma	
Diag 518.81	ACUTE RESPIRATORY FAILURE
Diag 038.0, 038.10, 038.11, 038.19, 038.2, 038.3, 038.40, 038.41, 038.42, 038.43, 038.44, 038.49, 038.8, 038.9	SEPSIS
Diag V49.86	DO NOT RESUSCITATE STATUS
Diag 250.33	DIABETES WITH OTHER COMA, TYPE I [JUVENILE TYPE], UNCONTROLLED
Diag 403.11, 403.91	HYPERTENSIVE CHRONIC KIDNEY DISEASE
Gallbladder Surgery	
Proc 51.21	OTHER PARTIAL GALLBLADDER SURGERY
Proc 51.22	GALLBLADDER SURGERY
Diag 428.31, 428.33	ACUTE DIASTOLIC HEART FAILURE
Diag 585.4	CHRONIC KIDNEY DISEASE, STAGE IV (SEVERE)
Diag 428.41, 428.43	ACUTE COMBINED SYSTOLIC AND DIASTOLIC HEART FAILURE
Gastrointestinal Bleed	
Proc 45.82	OPEN TOTAL INTRA-ABDOMINAL COLECTOMY
Diag 532.60	CHRONIC OR UNSPECIFIED DUODENAL ULCER WITH HEMORRHAGE AND PERFORATION, WITHOUT MENTION OF OBSTRUCTION
Diag 518.81	ACUTE RESPIRATORY FAILURE
Diag 585.6	END STAGE RENAL DISEASE
Diag 531.60	CHRONIC OR UNSPECIFIED GASTRIC ULCER WITH HEMORRHAGE AND PERFORATION, WITHOUT MENTION OF OBSTRUCTION
Gastrointestinal Surgeries and Procedures	
Proc 43.99	OTHER TOTAL GASTRECTOMY
Diag 286.6	DEFIBRATION SYNDROME
Proc 45.82	OPEN TOTAL INTRA-ABDOMINAL COLECTOMY
Proc 45.83	OTHER AND UNSPECIFIED TOTAL INTRA-ABDOMINAL COLECTOMY
Proc 43.7	PARTIAL GASTRECTOMY WITH ANASTOMOSIS TO JEJUNUM
Heart Attack	
Diag 348.1	ANOXIC BRAIN DAMAGE
Proc 37.61	IMPLANT OF PULSATION BALLOON
Diag 427.5	CARDIAC ARREST
Diag 585.6	END STAGE RENAL DISEASE
Diag 410.01, 410.11, 410.21, 410.51, 410.61, 410.81, 410.91	ANTERIOR/LATERAL WALL AMI

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Appendix D. Top Five Risk Factors by Procedure or Diagnosis

Heart Failure	
Diag 410.01, 410.11, 410.21, 410.51, 410.61, 410.81, 410.91	ANTERIOR/LATERAL WALL AMI
Diag 585.6	END STAGE RENAL DISEASE
Diag 507.0	PNEUMONITIS DUE TO INHALATION OF FOOD OR VOMITUS
Diag 518.81	ACUTE RESPIRATORY FAILURE
Diag V49.86	DO NOT RESUSCITATE STATUS
Hip Fracture Treatment	
Proc 43.11	PERCUTANEOUS [ENDOSCOPIC] GASTROSTOMY [PEG]
Diag 038.0, 038.10, 038.11, 038.19, 038.2, 038.3, 038.40, 038.41, 038.42, 038.43, 038.44, 038.49, 038.8, 038.9	SEPSIS
Diag 428.31, 428.33	ACUTE DIASTOLIC HEART FAILURE
Diag 518.81	ACUTE RESPIRATORY FAILURE
Diag 276.2	ACIDOSIS
Hip Replacement	
Diag 276.50, 276.51, 276.52	DEHYDRATION
Diag 403.10, 403.90	NON-MALIGNANT RENAL DISEASE W/O FAILURE
Diag 250.02	DIABETES MELLITUS WITHOUT MENTION OF COMPLICATION, TYPE II OR UNSPECIFIED TYPE, UNCONTROLLED
Diag 428.30, 428.32	CHRONIC DIASTOLIC HEART FAILURE
Proc 81.51	BILATERAL HIP
Neurosurgery	
Proc 00.17	INFUSION OF VASOPRESSOR AGENT
Diag 585.6	END STAGE RENAL DISEASE
Diag 780.01	COMA
Diag 430	SUBARACHNOID HEMORRHAGE
Proc 02.2	VENTRICULOSTOMY
Pancreatitis	
Diag 518.81	ACUTE RESPIRATORY FAILURE
Diag 785.52	SEPTIC SHOCK
Diag 507.0	PNEUMONITIS DUE TO INHALATION OF FOOD OR VOMITUS
Diag 789.59	OTHER ASCITES
Diag 578.9	HEMORRHAGE OF GASTROINTESTINAL TRACT, UNSPECIFIED
Peripheral Vascular Bypass	
Diag 428.21, 428.23	ACUTE SYSTOLIC HEART FAILURE
Diag 585.4	CHRONIC KIDNEY DISEASE, STAGE IV (SEVERE)
Diag 260, 261, 262, 263.0, 263.1, 263.2, 263.8, 263.9	MALNUTRITION
Diag 428.31, 428.33	ACUTE DIASTOLIC HEART FAILURE
Diag 444.0	EMBOLISM AND THROMBOSIS OF ABDOMINAL AORTA
Pneumonia	
Diag 518.81	ACUTE RESPIRATORY FAILURE
Diag 162.9	MALIGNANT NEOPLASM OF BRONCHUS AND LUNG, UNSPECIFIED
Diag 995.92	SEVERE SEPSIS
Diag 518.82	OTHER PULMONARY INSUFFICIENCY, NOT ELSEWHERE CLASSIFIED
Proc 99.04	TRANSFUSION OF PACKED CELLS

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Appendix D. Top Five Risk Factors by Procedure or Diagnosis

Prostatectomy	
Proc 60.3	SUPRAPUBIC PROSTATECTOMY
Proc 60.4	RETROPUBIC PROSTATECTOMY
Diag 428.21, 428.23	ACUTE SYSTOLIC HEART FAILURE
Diag 428.31, 428.33	ACUTE DIASTOLIC HEART FAILURE
Proc 60.69	OTHER PROSTATECTOMY
Pulmonary Embolism	
Diag 276.2	ACIDOSIS
Diag 518.81	ACUTE RESPIRATORY FAILURE
Diag 585.6	END STAGE RENAL DISEASE
Diag 507.0	PNEUMONITIS DUE TO INHALATION OF FOOD OR VOMITUS
Diag 162.9	MALIGNANT NEOPLASM OF BRONCHUS AND LUNG, UNSPECIFIED
Resection / Replacement of Abdominal Aorta	
Diag 441.3	ABDOMINAL ANEURYSM, RUPTURED
Proc 38.34	RESECTION OF AORTA WITH ANASTOMOSIS
Proc 54.12	REOPENING OF RECENT LAPAROTOMY SITE
Diag 557.0	ACUTE VASCULAR INSUFFICIENCY OF INTESTINE
Proc 38.44	RESECTION OF ABDOMINAL AORTA WITH REPLACEMENT
Respiratory Failure	
Diag 348.1	ANOXIC BRAIN DAMAGE
Diag 780.01	COMA
Diag 427.5	CARDIAC ARREST
Diag 410.01, 410.11, 410.21, 410.51, 410.61, 410.81, 410.91	ANTERIOR/LATERAL WALL AMI
Diag 162.9	MALIGNANT NEOPLASM OF BRONCHUS AND LUNG, UNSPECIFIED
Sepsis	
Diag 427.5	CARDIAC ARREST
Diag 586	RENAL FAILURE, UNSPECIFIED
Diag 410.01, 410.11, 410.21, 410.51, 410.61, 410.81, 410.91	ANTERIOR/LATERAL WALL AMI
Diag 557.0	ACUTE VASCULAR INSUFFICIENCY OF INTESTINE
Diag 286.6	DEFIBRATION SYNDROME
Stroke	
Diag 780.01	COMA
Diag 518.81	ACUTE RESPIRATORY FAILURE
Diag 348.4	COMPRESSION OF BRAIN
Diag 410.01, 410.11, 410.21, 410.51, 410.61, 410.81, 410.91	ANTERIOR/LATERAL WALL AMI
Diag 038.12	METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS SEPTICEMIA
Total Knee Replacement	
Diag 276.50, 276.51, 276.52	DEHYDRATION
Diag 403.10, 403.90	NON-MALIGNANT RENAL DISEASE W/O FAILURE
Diag 416.0, 416.1, 416.8, 416.9	PULMONARY HYPERTENSION
Diag 276.7	HYPERPOTASSEMIA
Diag 428.30, 428.32	CHRONIC DIASTOLIC HEART FAILURE

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Valve Repair/Replacement Surgery	
Proc 37.61	IMPLANT OF PULSATION BALLOON
Diag 585.6	END STAGE RENAL DISEASE
Diag 427.5	CARDIAC ARREST
Proc 35.27	OPEN AND OTHER REPLACEMENT OF TRICUSPID VALVE WITH TISSUE GRAFT
Diag 996.61	INFECTION AND INFLAMMATORY REACTION DUE TO CARDIAC DEVICE, IMPLANT, AND GRAFT

Appendix E. Methodology Enhancements for 2013 Ratings Models

While Healthgrades did not make major changes to its cohort definitions or risk-adjustment procedures this year, there were several changes in the underlying data which impacted the analyses.

Diagnosis code V49.86 (DO NOT RESUSCITATE STATUS) was new in the 2011 MedPAR data file. Healthgrades included this diagnosis as a risk factor in its regression analyses for all non-surgical cohorts where mortality was the outcome being assessed. It was only considered to be a risk factor when the patient record indicated that it was present on admission. This diagnosis was statistically significant in the logistic regression model for each of these cohorts.

In previous years, the MedPAR file purchased from CMS only contained the first nine diagnosis codes and the first six procedure codes even though the standard claim form allows for more codes to be entered. Starting with the final release of the 2010 MedPAR file, all code positions were included. Where these fields were populated, Healthgrades has used them to define inclusion and exclusion criteria, complications and risk-factors.

Appendix F. Hospital Ratings and Ranking Removal Policy

Effective October 19, 2009

Healthgrades evaluates the performance of the nation's nearly 5,000 hospitals using several data sources including data submitted by hospitals to the Centers for Medicare and Medicaid Services (CMS), all-payer data submitted by hospitals to their states, and HCAHPS data.

Regardless of the data set utilized, Healthgrades methodology is applied to every hospital in the same manner.

On rare occasions, Healthgrades identifies new information that impacts its assessment of a hospital. Healthgrades policy is to remove certain hospitals' performance and/or awards from its website in the following situations:

- A revocation of a hospital's Medicare license by CMS;
- Federal indictment of a hospital for Medicare fraud;
- Egregious issues with the integrity of data submitted by a hospital to CMS or to the state in which the hospital resides.

In these rare circumstances, the hospital's CEO will be notified in writing of the reason for removal. Removal is at the discretion of Healthgrades based on the impact from erroneous data and/or fraudulent activities.

Under **no circumstances** will Healthgrades accept data directly from a hospital, nor will Healthgrades manipulate or change a hospital's performance category or data in any way. It is the hospital's responsibility to resubmit the data to CMS or to its state. To re-post specific performance information, Healthgrades must receive corrected data directly from CMS or from the state during its annual ratings update.

Rankings and Awards

Using the Healthgrades star performance categories and associated z-scores, hospitals are rank ordered nationally to determine Specialty Excellence Awards™ and within their state for overall service lines and service line subspecialties. Ranking is done on an annual basis. In the case that a hospital's ratings are removed, it is Healthgrades policy NOT to re-rank hospitals. No hospital shall move up or down at the time when a hospital's ratings are removed. Rankings are conducted annually.