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Predictors of Post-injury Mortality in Elderly Patients with Trauma: A Master's Thesis

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PREDICTORS OF POST-INJURY MORTALITY IN ELDERLY PATIENTS WITH TRAUMA

A Master's Thesis Presented

By

Charles Michael Psoinos M.D.

Submitted to the Faculty of the
University of Massachusetts Graduate School of Biomedical Sciences, Worcester
In partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE

July 21st 2016

- Elderly Trauma -

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Abstract

Background

Traumatic injury remains a major cause of mortality in the US. Older Americans experience lower rates of injury and higher rates of death at lower injury severity than their younger counterparts. The objectives of this study were to explore pre-injury factors and injury patterns that are associated with post-discharge mortality among injured elderly surviving index hospitalization.

Methods

We queried a 5% random sample of Medicare beneficiaries (n=2,002,420) for any hospitalization with a primary ICD-9 diagnosis code for injury. Patients admitted without urgent/emergent admission were excluded, as well as patients presenting from inpatient hospitalization or rehabilitation. The primary endpoint was all-cause mortality. Patients were categorized into three mortality groups: death within 0-30 days, 31-90 days, or 91-365 days post-discharge from the index hospitalization. These groups were compared with those who survived greater than one year post-discharge. Univariate tests of association and multivariable logistic regression models were utilized to identify factors associated with mortality during the 3 examined periods.

Results

83,439 elderly patients (4.2%) were admitted with new injuries. 63,628 met inclusion criteria. 1,936 patients (3.0%) died during their index hospitalization, 2,410 (3.8%) died within 0-30 days, 3,084 (4.8%) died within 31-90 days, and 5,718 (9.0%) died within 91-365 days after discharge. In multivariable adjusted models, advanced age, male sex, and higher Elixhauser score were associated with post-discharge mortality. The presence of critical injury had the greatest effect on mortality early after injury (0-30 days, OR 1.81,

CI 1.64-2.00). Discharge to anywhere other than home without services was associated with an increased odds of dying.

Conclusions

Socio-demographic characteristics, disposition, and co-morbid factors were the strongest predictors of post-discharge mortality. Efforts to reduce injury-related mortality should focus on injury prevention and modification of co-morbidities.

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CHAPTER I

- Introduction -

Traumatic injury [hereafter referred to as injury] remains a major cause of morbidity and mortality in the United States, with 2.3 million hospital admissions annually, resulting in nearly two hundred thousand deaths¹. These deaths account for approximately 30% of all life-years lost¹. Injury continues to be the leading cause of death among young American adults and the third leading cause of death in all age groups¹. The majority of injury research has focused on younger patients; however, with an aging US population injuries in the elderly are rapidly becoming a major public health concern. In 2014 there were nearly forty-six million medically consulted injuries in persons 65 years and older².

Though injury is more likely to occur in younger individuals, elderly patients experience higher death rates with less severe injury³⁻⁷. Persons older than sixty years of age experience a four-fold increase in major injuries compared with younger individuals and experience a five-fold increase in injury-related mortality even with minor injuries as defined by the Injury Severity Score (ISS)⁵. Among elderly patients, pre-injury factors, including advanced age, male sex, and pre-existing medical co-morbidity are associated with post-injury mortality^{4,7-9}.

Recognizing patterns of deaths after traumatic injury has been an important step in reducing injury-related mortality. In the trauma literature, there is a well-described trimodal distribution of death after injury. This pattern was first described by Trunkey in the 1970s and has remained a cornerstone of trauma care. This model identifies three

peaks in mortality seen after injury: peak 1, which includes deaths at the scene of injury; peak 2, which encompasses early deaths within hours of arrival to medical care; and peak 3, which includes deaths hours to days after injury during the index hospitalization¹⁰. Improvements in triage and pre-hospital care might reduce mortality in the first peak while advances in resuscitation, diagnostic tools, and operative techniques might reduce mortality in the second peak; progress in critical care and infection control might reduce mortality in the third peak. Recently, researchers from the University of Massachusetts Medical School described a ‘quadrимodal distribution of traumatic death’ with a fourth peak of trauma related mortality occurring after hospital discharge. These investigators studied critically injured patients from a single level-1 trauma center, emphasizing the prevalence of late deaths after injury. Among patients surviving their index hospitalization after a critical injury, an additional 14% died during the follow-up period, of which nearly one half died within the first year after discharge. These findings highlight the high rate of injury related mortality even among patients who survive their index hospitalization¹¹.

Concomitant with the development of trauma systems and advances in critical care in the U.S., there has been a consistent decline in early and in-hospital deaths associated with injury over the last several decades¹²⁻¹⁵. However, little attention has been paid to the late sequela of these injuries. The elderly population in the US is experiencing brisk growth partially due to increasing longevity and reductions in disease-specific mortality¹⁶. Injuries in the elderly continue to increase and are expected to exceed more than half of all trauma admissions in the next decade¹⁷. Coupled with the rising costs of healthcare,

understanding the short and long-term risks of mortality after injury in the elderly is of critical importance to providing optimal care, developing appropriate and efficient trauma systems, and giving well informed guidance and expectations to patients and their families after an injury has occurred. Using data from a national sample of Medicare beneficiaries, we hypothesized that pre-injury factors as well as pattern of anatomic injury will be associated with post-discharge mortality among injured elderly patients surviving their index hospitalization.

CHAPTER II

- *Methods* -

Data Source

We utilized a 5% random sample of Medicare beneficiary claims data from January 1, 2009 – December 31, 2011. Medicare denominator files provide beneficiary demographic data (age, sex, race). Medicare Provider and Analysis Review (MEDPAR) provides data on Part A inpatient claims (diagnosis [primary and up to 24 additional diagnoses], surgical procedures [up to 25], length of stay (LOS), intensive care unit (ICU) LOS, and discharge disposition. Co-morbidities were determined by using inpatient and outpatient claims as well as additional data from the chronic conditions file. These files were used to calculate each patient's Elixhauser co-morbidity index¹⁸. Due to bundled payment systems, MEDPAR does not include any data on inpatient resource utilization such as medications administered during admission or durable goods supplied (e.g., bandages, disposable equipment). Patients were included in the present study if they were aged 65 years or older on January 1, 2009, had at least 1 month of Part A coverage, and were not enrolled in a Medicare Advantage Plan at the time of injury (n=2,002,420). Medicare Advantage Plan members were excluded on the basis of incomplete inpatient claims data due to third party payer.

Case Identification

Cases were defined as any hospital admission with a primary diagnosis of traumatic injury as determined by ICD-9 diagnosis codes in MEDPAR from January 1st 2009 through December 31, 2011. A full list of ICD-9 codes considered to be trauma related

injuries is shown in Appendix 1. Patients were followed for inpatient and post-discharge mortality.

To restrict our cohort to only patients with a new injury and avoid those with chronic injuries, all persons who were admitted without the designation of urgent/emergent admission were excluded. Any patient who presented with an inpatient admission from a skilled nursing facility (SNF) or with immediately preceding MEDPAR claims from a long-term inpatient hospitalization or SNF were excluded. Patients who were discharged from their acute hospitalization to hospice care were excluded from further analysis due to their high expected mortality and potential to deviate from normal treatment practices (Figure 1).

Statistical Analysis

The primary study endpoint was all-cause mortality. Patients were categorized into four mortality groups: those who died during their index hospitalization or at 0-30 days, 31-90 days, or 91-365 days post-discharge from the index hospitalization. The comparison group consisted of persons who survived greater than or equal to one-year post hospital discharge. One-month and one-year mortality were chosen as metrics because they are commonly used as standards in the trauma literature.

Covariates of interest that may be associated with post-discharge mortality included age, gender, race, co-morbidity burden, index hospitalization LOS, intensive care unit (ICU) LOS, and hospital discharge disposition (home, home with services, rehabilitation, long term acute care facility [LTAC], SNF, other inpatient [acute hospital other than index

admission hospital], and other). Underlying co-morbidities were measured by use of the Elixhauser Score. Use of the Elixhauser Score is appropriate for this study because it has become the standard in the surgical outcomes literature for measuring co-morbidities and because Medicare is a large administrative inpatient dataset utilizing ICD-9 codes, similar to the population for whom Elixhauser et al originally developed and validated the score in¹⁸. To evaluate the effect of specific injury patterns on elderly trauma outcomes, we used the Abbreviated Injury Scale (AIS) calculated using the ICDMAP-90 Software on the first 10 diagnosis codes from the patient admission. The AIS was developed by the Association for the Advancement of Automotive Medicine in 1969 (updated 2008) to classify the risk of mortality based on severity of injuries¹⁹. The AIS is broken down into nine body regions (head, face, neck, thorax, abdomen, spine, upper extremity, lower extremity, unspecified) and each injured region is scored from 1-6. Injuries scored as three or greater are considered serious and a score of six is considered to be not survivable (Appendix 2). The AIS has been validated as a marker of injury-related mortality based on anatomic injury and is frequently used in the current trauma literature as a means of standardizing injury related mortality²⁰⁻²². It is worth noting that we chose to use the AIS over the Injury Severity Score (ISS) because the AIS, broken down into nine anatomical regions, allows for analysis of specific injury patterns and their associated risk of dying whereas the ISS is a single number composite metric that predicts mortality based on the combination of all current injuries²². We further defined critical injury as having an ICU LOS \geq one day and an AIS in at least one region of \geq 3.

Univariate tests of association (Chi-square test for categorical variables and pairwise-t tests for continuous variables) were used to compare patients who survived at least one year after hospital discharge and those in each of the four post-discharge mortality groups. Kaplan-Meier survival curves were constructed using a ten percent sample of those surviving their index hospitalization comparing elderly trauma patients who did and did not meet criteria for critical injury. Ten percent samples were chosen due to computational constraints with current laboratory software. Multiple samples of the study population were taken and yielded similar results. Duplicate Kaplan-Meier survival curves were produced via this method with no significant differences observed.

Multivariable logistic regression models were developed to identify factors associated with mortality including pre-injury factors, injury patterns as represented by the AIS, and post-hospitalization disposition at each of the designated time intervals. Initially, individual models were developed comparing patients who died during each time period to those who survived greater than one year. Covariates in the initial models included those that reached a significance level of <0.05 in univariate tests: age (categorical), sex, race/ethnicity, Elixhauser score (categorical), LOS (continuous), ICU LOS (continuous), and discharge disposition (Table 4a). A second round of variable elimination was then conducted by removing non-significant variables ($p \geq 0.05$) in a stepwise fashion. Final models only retained variables that remained statistically significant at alpha <0.05 level. Geographic region was added to the final model as a controlling variable. No effect in the odds ratio's magnitude or direction was seen with the inclusion of this variable and region was not included in the final regression models.

After building the initial model, injury pattern and critical injury were evaluated. Since our definition of critical injury included the AIS, we assumed a large amount of collinearity would exist between these two variables; thus, they were each added to the initial model separately (Table 4b and 4c). Injury regions included in the multivariable models were any individual region that reached a significance level of <0.05 in univariate analysis; these included the Head, Thorax, Spine, and the Lower Extremity. Injury regions were added to the initial model in a stepwise fashion for each mortality interval in the following order: Head, Thorax, Spine, Lower Extremity. If the variable reached statistical significance, it was retained in the further rounds of modeling. If statistical significance was not achieved, it was removed before adding the next injury region.

To ensure that we had chosen the appropriate comparison group for our multivariable adjusted analyses, namely patients who survived greater than 365 days after hospital discharge from injury-related admission, we repeated the regression analyses using all patients who survived greater than the individual mortality window as the reference for each group. For example, persons included in the 0-30 day mortality group were compared with those who survived ≥ 31 days. These results are shown in Tables 5a-5c.

This study was deemed exempt by the University of Massachusetts Medical School Institutional Review Board and was approved by the Centers for Medicare and Medicaid Services via the Research Data Assistance Center. All data were de-identified by the

originator prior to our acquisition. All analyses were performed using SAS 9.3 (SAS Institute, Inc, Cary, NC).

CHAPTER III

- Results -

Case Selection

Our three year 5% random Medicare dataset included over two million patient admissions, from which 83,439 (4.2%) were admitted with a primary diagnosis of injury between January 1, 2009 and December 31, 2011. The four exclusion criteria were subsequently applied to this population: over 14,000 patients were removed for non-emergent admission status, more than 7,000 patients were residents of a LTAC or SNF, with an additional 2,300 patients being admitted from a SNF, and over 1,100 patients were excluded since they were discharged to hospice. Among the 63,628 patients included in our final analysis, 50,480 (79.3%) survived more than 1 year, 1,936 (3.0%) died during their index hospitalization, 2,410 (3.8%) died within 30 days of hospital discharge, 3,084 (4.8%) died between 31-90 days, and 5,718 (9.0%) died between 91-365 days after their index hospitalization (Figure 1).

Univariate Results – Demographics

The average age of our elderly injured patients who survived at least one year after injury was 82 years. This was significantly younger than each of the mortality comparison groups, which were on average two to four years older than the one-year survivors. The majority of patients across all categories were female and females were more likely to survive than males in all mortality groups (Table 1). Patients who died during each of the post-discharge time points had higher pre-injury co-morbidity burden (mean Elixhauser Score >4) than patients who survived more than one year (mean Elixhauser Score 3.7).

Patients who died during each of the three post-discharge time points included a higher percentage of non-Hispanic white patients compared with long-term survivors (Table 1).

Univariate Results – Injury Pattern

Utilizing AIS region ≥ 3 to examine associations between patterns of severe injury and the risk of dying, Lower Extremity injuries were the most prevalent injury type during every time interval examined. Half of the patients who survived 1 year had a severe lower extremity injury. Patients who died during the 0-30, 31-90, and 91-365 days after discharge had significantly higher rates of Lower Extremity injury than those who survived 1 year while those who died during their index hospitalization experienced the lowest rates of Lower Extremity injury. Severe Head injuries were the second most commonly suffered severe injury across all time intervals. Approximately one in ten patients who survived for 1 year or died between 31-90 or 91-365 days after discharge had a severe Head injury. Patients who died during the earlier time periods had significantly more Head injuries, with one third of patients who died during their index hospitalization having this injury pattern, as well as 14% of those who died within one month of hospital discharge. Severe thoracic injuries were rare but patients afflicted by these had twice the in-patient mortality compared with long-term survivors. On the other hand, patients who died between either 31-90 days, or 91-365 days. after discharge had lower frequencies of thoracic injury. Patients who died during their index hospitalization had slightly more than twice the incidence of Spine injury compared with corresponding controls that survived more than 1 year. Severe Face, Neck, Abdomen/Pelvis, Upper Extremity, and External injuries occurred at too low a frequency to analyze or report per guidelines of the Medicare data use agreement (Table 2).

Univariate Results – Critical Injury

Critical injury was least prevalent (14.5%) among patients who survived one year post-discharge (Table 2). The prevalence of critical injury was significantly higher within each of the mortality time points compared with long-term survivors and became reduced in magnitude with each passing time period. Approximately one half of all patients who died during their index hospitalization met our definition for critical injury, one in four during the 0-30 day mortality window, followed by 20% and 18%, respectively, for the 31-90 day and 91-365 day mortality time periods.

Univariate Results – LOS & Disposition

The median index hospitalization LOS (4 days) was shortest for those who survived greater than 1 year with each of the mortality groups having a median stay of one day greater (5 days). Among the patients who required ICU care, patients who died within 1 month of hospital discharge had twice the average ICU LOS (2 days) compared with all other groups.

Discharge disposition varied greatly among survivors and the different mortality groups. Long-term survivors had the highest rates of discharge to home, home with services, and to a rehabilitation facility with the lowest rates of discharge to LTAC and SNF. Remarkably few patients were discharged to home, with fewer than 1 in 5 long-term survivors and fewer than 1 in 10 patients who died during any time point being discharged from their index hospitalization without the need for ongoing services. Home with services and rehabilitation facilities were similarly utilized by a minority of the

injured patients upon hospital discharge. The vast majority of patients among all groups were discharged to SNF. Half of the patients who survived 1 year were initially discharged to SNF while approximately two-thirds of all other patients required this level of care upon hospital discharge (Table 3).

Survival Analysis

Kaplan-Meier survival curves describing the risk of dying from all causes within two years of discharge from the patient's index hospitalization for trauma, stratified by level of critical injury, indicate an early divergence between elderly trauma patients who did and did not suffer a critical injury. Patients who suffered a critical injury were at greater risk for dying at each of the time points examined, namely one month, three months, and one year from the time of their index hospitalization compared to those without a critical injury. The effect of critical injury on mortality appears to be initially modest, and is exacerbated as time passes from initial hospital discharge, with the presence of critical injury having a 3% increase in all-cause mortality at both one and three months post-discharge (Figure-2).

Multivariable Results – Demographics

Through multivariable logistic regression modeling, demographic characteristics that were associated with increased odds of dying in this population included male sex, advanced age, and underlying co-morbidity burden (Table 4a). Men were at more than double the risk of dying in the 0-30 day time period in comparison with women. These differences declined over time but still remained elevated. Age specific differences in the risk of dying followed a similar pattern with patients 75-84 years old having an increased

odds of dying within 1 month of hospital discharge whereas individuals 85 years and older had more than three times the odds of dying compared with patients 65-74 years old. These differences declined minimally across the more extended time points. In terms of the impact of co-morbidity burden, patients with an Elixhauser Score of 1-2 had a slightly decreased odds of dying during all three mortality windows compared to patients with no pre-existing co-morbidities. However, this trend was reversed for patients with Elixhauser Scores ≥ 5 having an approximate thirty to fifty percent increased odds of dying across all time points.

Multivariable Results – Injury Regions

When injury patterns were added to the initial multivariable logistic regression model, little effect was seen in the model's initial variables with no variables changing from significant to non-significant or vice versa; only minimal changes were seen in the magnitude of the individual odds ratio. Few individual injury regions remained significantly associated with mortality in the stepwise multivariable modeling process with the exception of Head, Spine, and Lower Extremity, all of which were associated with an increased odds of dying during the first month after hospital discharge. However, this increased odds of dying was largely lost after 30 days either becoming non-significant or having a minimally increased odds of mortality during later time intervals (Table 4b).

Multivariable Results – Critical Injury

Finally, the addition of critical injury to the initial multivariable logistic regression also had little effect in the initial model variables with no appreciable changes in either the

magnitude or direction of the odds ratios. Critical injury was associated with increased post-discharge mortality with critically injured patients having an 80% increased odds of death in the first 30 days post-discharge compared to patients not critically injured. The magnitude of increased risk decreased over time but remained significant during the 91-365 day mortality window with critically injured patients continuing to experience an increased odds of death (Table 4c).

Multivariable Results – Discharge Disposition

Discharge from index hospitalization to anywhere other than home was associated with an increased odds of mortality for each individual discharge location evaluated except for home with services or rehabilitation facility during the 0-30 day time period. Additionally, for each of the discharge locations, the increase in the odds of dying was greatest during the 0-30 day time period and decreased across time periods as the patient got further from their initial time of discharge, with the exception of discharge to home with services or rehabilitation facility for which the odds of dying peaked in the 31-90 day period.

Interestingly, even patients who required the lowest level of post-discharge on-going services (home with services) had a 60% and 30% increased odds of dying compared with patients who required no services at both the 31-90 day and 91-365 day time periods. The pattern and magnitude of elevated odds of death for patients who were discharged to a rehabilitation facility was similar to patients discharged to home with services, with patients experiencing a 30%, 70%, and 40% increased odds of mortality 0-30, 31-90 and 91-365 days, respectively, after discharge compared to those discharged

home. A further stepwise increase in the odds of dying was seen among patients discharged to SNF, other inpatient, and LTACs. Patients discharged to SNF had almost three times odds of mortality in the first month after discharge while patients discharged to LTACs had the highest odds of death with nine-fold increased likelihood of dying during the first month after discharge compared with patients discharged home (Table 4a).

Use of an Additional Control Group

We repeated the previously described multivariable adjusted analyses using patients who survived longer than each individual mortality window as the comparison group. For example, patients who died in the 0-30 day post-discharge period were compared to patients who survived thirty-one days or more. This change in comparison group resulted in similar multivariable logistic regression results when compared to those observed using patients who survived more than one year as is seen in the above analysis. Minimal differences were seen between modeling, with no variable changing from significant to non-significant or visa versa, and there was little change in the magnitude of the observed odds ratios (Table 5a-c).

CHAPTER IV

- Discussion -

Major Findings

We used data from a large nationally representative sample of more than two million elderly patient admissions to determine factors associated with post-discharge mortality after injury. We found that increasing age, male gender, and pre-injury co-morbidity burden were associated with mortality across all post-discharge time points. Additionally, severe injury to the Head, Spine, or Lower Extremity increased the short-term odds of death while critical injury was a major predictor of early death after injury with a diminishing effect over time.

Age and Sex

We found that advanced age and male sex increased the odds of dying after injury in our elderly population. This finding is consistent with the current literature⁴⁻⁷, and expands current knowledge by showing that this elevated risk is present for at least up to 1 year after initial hospital discharge. The increased risk of dying with advancing age is likely due to reduced physiologic reserve and increased chronic disease burden^{23,24}. It has been noted through the use of the Simplified Acute Physiology score that elderly trauma patients have an exaggerated physiologic response to injury and that this may be one of the primary reasons why patients of advanced age fare worse than younger patients with similar injury severity²³.

Gender likely has a similar affect to age, with men carrying higher disease burden into later life resulting in a lower general life expectancy compared with women²⁵. Our

finding that men had more than double the odds of dying early during the 0-30 day post-discharge compared with women, decreasing to a 60% increased odds at 91-365 days after discharge, may be partially explained by the fact that the physiologic response to injury is most prominent in the days to weeks immediately after the insult. Therefore, the exaggerated physiologic response seen in the elderly may have a greater effect closer to the time of injury and decline as time passes and the physiologic response to the injury normalizes.

Co-Morbidity

The published literature is mixed with regards to the effect of pre-injury co-morbidity burden on the risk of post-injury death among elderly persons who are injured. Several studies have found that pre-existing medical burden is associated with post-traumatic mortality^{4,8,9,26,27} while others have published contradictory findings^{7,28}. Our study adds to the contemporary literature findings that an Elixhauser score >5 incurred a 30-50% increase in post-discharge death during the first year after being discharged from the hospital after an injury.

Interestingly, our data showed that an Elixhauser score of 1-2 confirmed a protective effect compared to those with an Elixhauser score of zero. However, it is likely that many of the elderly trauma patients with an Elixhauser score of zero were underestimated because of rare contact with the medical system or lack of a complete medical history in the Medicare billing record.

Injury Patterns

Among younger cohorts of injured patients, rising anatomic injury severity and GCS are strong markers for post-injury death²⁹. In contrast, among the elderly, specific injury patterns appears to be less predictive of subsequent mortality with many anatomical regions having too few occurrences to report (Face, Neck, Abdomen, Upper Extremity, and External), thereby clouding the interpretation of the present literature in this area. This is further supported by Battistella *et al's* finding that among injured patients older than 75 years of age, severity of injury did not predict death within six months of discharge²⁷. Interestingly, the regions with the most common severe injury including Head, Thorax, Spine, and Lower Extremity are the anatomic regions closely related to fall injuries, with head injury, rib fractures, spinal fractures, and femur/hip fractures commonly seen with falls. Though we do not have specific mechanisms of injury data in the present study, the finding that the majority of severe injuries fell within these injury regions is suggestive of a large number of fall-related injuries.

Upon initial inspection of our results it was surprising how few severe Face, Neck, Abdomen/Pelvis, and Upper Extremity injuries occurred in our study cohort (Table 2). This can be explained by two factors. First, it has been previously shown that the elderly have higher mortality at lower injury severity compared with younger injured individuals. Inasmuch, many of the elderly injuries, though significant, may not meet the anatomic criteria of the AIS to be scored as a three or greater^{5,7}. Secondly, these injury regions do not match with the typical injury pattern seen with falls, which is the overwhelming majority of trauma related injuries in older individuals^{28,30-32}.

Critical Injury

Exploring injury specific factors, the presence of a critical injury was a strong predictor of early mortality in both univariate and multivariable analyses. Critical injury had its greatest effect on mortality within the first month of hospital discharge and sharply dropped in magnitude during the later time points. This finding is further supported by our survival analysis with those meeting criteria for a critical injury having lower survival at all examined time points.

This finding has important implications with regards to resource utilization, long-term outcomes, and the counseling of elderly patients after they have incurred a critical injury. Though the majority of the adverse effects of a critical injury are seen during the first month after hospital discharge there are long lasting effects with odds of death remaining elevated through all time periods evaluated when compared with non-critically injured elderly individuals.

Disposition

It was not surprising that we found that patients discharged to higher levels of care experienced higher rates of death, and as time passed the odds of death generally decreased. Patients discharged to rehabilitation, SNF, other acute in-patient hospital, and LTAC had an increased odds of mortality at 0-30 days after discharge compared with those discharged to home, and all had a decreased odds of dying by the 91-365 day period.

However, we observed several interesting trends. First, there were surprisingly few elderly injured patients discharged to home or home with services, including about one in four long term survivors, and less than one in five who died during any time period. With only 1 in every 6 patients met the criteria for a critical injury, even patients with possibly low to moderate injury acuity have a high likelihood of requiring high levels of post-discharge care. Further confirming this observation, the majority of patients across all groups were discharged to SNF, a relatively high cost, high level of care facility. Federal criteria for Medicare or Medicaid reimbursement requires that a SNF include a supervising physician, 24 hour nursing care, official medical record system, and drug dispensary facilities³³.

We also observed that patients discharged to home even with minimal additional care (home with services) had increased the odds of death beyond one-month post-discharge. This is alarming, as healthcare providers often assume that patients well enough to go home with services are healthier or more stable than those who require inpatient care at a rehabilitation facility. However, the DEED (Discharge of Elderly from Emergency Department) study found that even minimal services, use of a nurse in the community, increased the risk of readmission by more than two and a half times compared to patients without such services³⁴. Our findings suggest that these two groups, home with services and those admitted to a rehabilitation facility, may be more similar than previously assumed, having similar elevations in odds of mortality after one month of being released from the hospital for an injury.

In addition, with so few injured elderly patients being discharged to home, early engagement with case management or the dedication of additional social service resources during the index hospitalization may streamline discharge and reduce LOS. With more than half of patients requiring SNF level of care, this effort should include pre-vetting of local facilities capable of taking care of injured elderly patients and initiating early facility-patient screening process.

Trauma Quality

Over the last several decades in an environment of rapidly rising health care costs and a national shift to patient-centered health care, the notion of health care quality has become an important marker for health care systems. Quality is defined as “the best care for the best price”. Trauma and Critical Care has equally been integrated into the quality healthcare movement with its own Trauma Quality Improvement Program (TQIP) run by the American College of Surgeons (ACS) with the goal of “elevating the quality of care for trauma patients within trauma centers”³⁵. This fits well into the general movement towards improvements in triage, advances in resuscitation, diagnostic tools and operative techniques that may improve the survival of injured patients. TQIP collects data from 450 trauma centers and provides institution specific performance metrics and risk-adjusted benchmarking to point out areas of specific strengths and weakness. These metrics include factors such as ICU utilization, length of stay, occurrence of complications, and discharge status. The mortality metric is based on in-hospital mortality only. However, the present study highlights that in-hospital mortality is a small part of the picture when it comes to injured elderly patients who experience an additional 3.7% mortality within 1 month of hospital discharge and overall one out of every five injured elderly patients will

be dead within one year of discharge. Therefore, we would propose that in-hospital mortality may not be the best mortality metric to measure trauma quality when treating elderly men and women who are injured. The addition of several post-discharge mortality variables, including one month and one-year time points, may add important insights into the enhanced care of this vulnerable population.

Falls

It has been well documented that falls are the leading type of injury among elderly patients, with 70-85% of elderly trauma resulting from falls each year and approximately 90% of fall-related deaths occurring in patients over the age of 65 years^{28,30,31,36}. Therefore, we may be underestimating the true magnitude and societal burden of falls. With relatively low in-patient mortality, and high one-year mortality, primary injury prevention as compared to in-patient interventions is going to be key for reducing the quadrimodal peak of elderly injury death. Though our data set does not include information on specific injury mechanisms (E-codes), the anatomic areas of severe injury most common in our dataset are congruent with fall type injuries. This combined with prior findings that two thirds of elderly injuries occur from falls strongly indicates that the most effective means of preventing death from elderly trauma will be redoubling efforts related to primary fall prevention among the elderly^{28,32}.

Study Strengths and Limitations

This large nationwide study provides unique cross-sectional insights into the epidemiology of trauma in elderly individuals, helping providers better elucidate which patients are at highest risk for death. This study is unique in following patients after

discharge to determine who is at greatest odds for dying in the weeks and months after discharge from the patient's acute hospitalization. Despite the strengths of this study, there are several limitations to consider in the interpretation of our study results. Since we utilized claims data, we were unable to confirm patient's diagnoses with diagnostic data or measure the severity of disease with physiologic data. Specifics about clinical decision-making cannot be ascertained. We are relying on the accuracy of claims matching their intended clinical diagnosis. Through the Medicare database we do not have access to E-codes which denote injury mechanism. We are assuming the presence of traumatic injury through the combination of a clinical diagnosis of an injury and urgent/emergent hospital admission. Our strict definition of critical injury requiring both an AIS ≥ 3 and an ICU LOS ≥ 1 day may underestimate the number of patients who suffer critical injuries, also resulting in a bias towards the null. Finally, this research may not be generalizable to the entire elderly population. Patients who enroll in Medicare are more likely to be women, non-white, and of lower socioeconomic status compared to the general elderly population of the United States³⁷.

Conclusions

This study is an important addition to the current body of literature, both strengthening and expanding our understanding of the short and long-term effects of injury on the mortality patterns of elderly individuals. Our findings show that pre-injury factors including advanced age, male sex, and co-morbidity burden all increase the odds of post-injury death. This increased risk remains elevated for an extended period of time post discharge with one in five injured elderly patients dead at one-year despite relatively low in-hospital mortality of 3%. Thus, at a time when the population is aging, in-hospital

mortality may not be the best outcome measure. Efforts to reduce injury-related mortality in this vulnerable group should focus on injury prevention and modification of co-morbidities as in-hospital efforts will likely have little overall impact on mortality reduction. To minimize pre-injury co-morbidities, chronic conditions must be well-treated. Much of this lies in the setting up of close primary care for elderly men and women. Additionally, fall prevention is likely the single most important factor for reducing severe anatomical injury among the elderly. While road traffic safety, gun control, and the reduction of childhood sports-related injury has gained much media attention in recent years, little attention has been devoted to the reduction of non-work related falls. The findings from our study will support practitioners in providing accurate and realistic expectations for elderly trauma victims and their families about the months and year ahead. Despite the relatively low in hospital mortality, our high one-year mortality suggests a difficult year ahead for many elderly victims of trauma.

Figures

Figure-1: Flow diagram of subject selection.

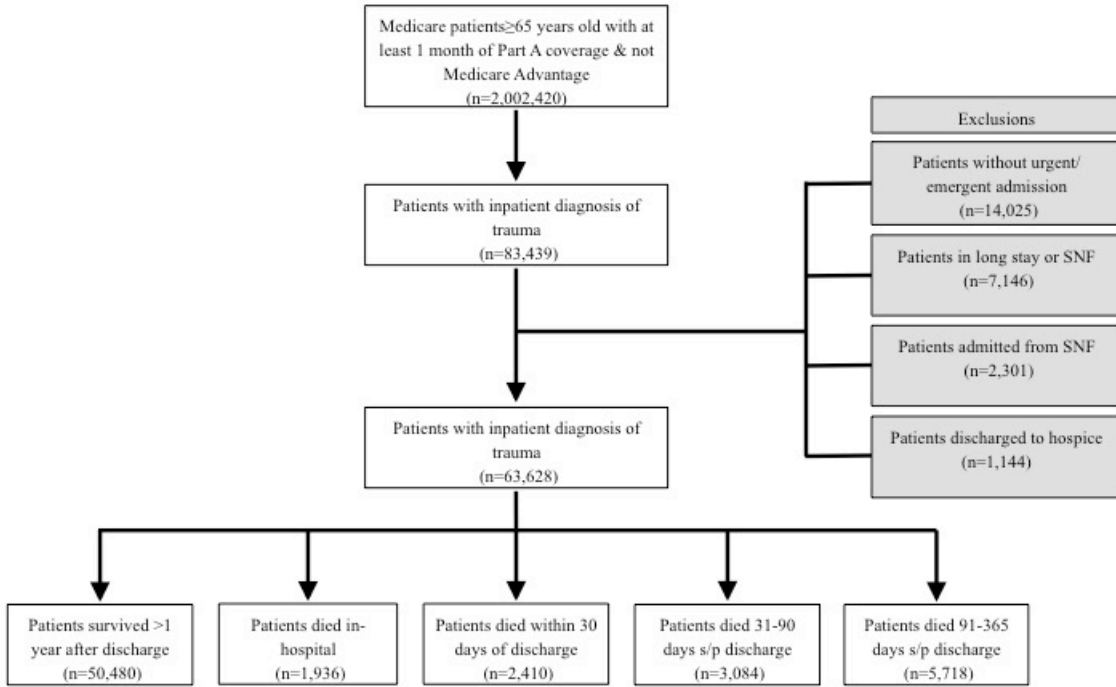
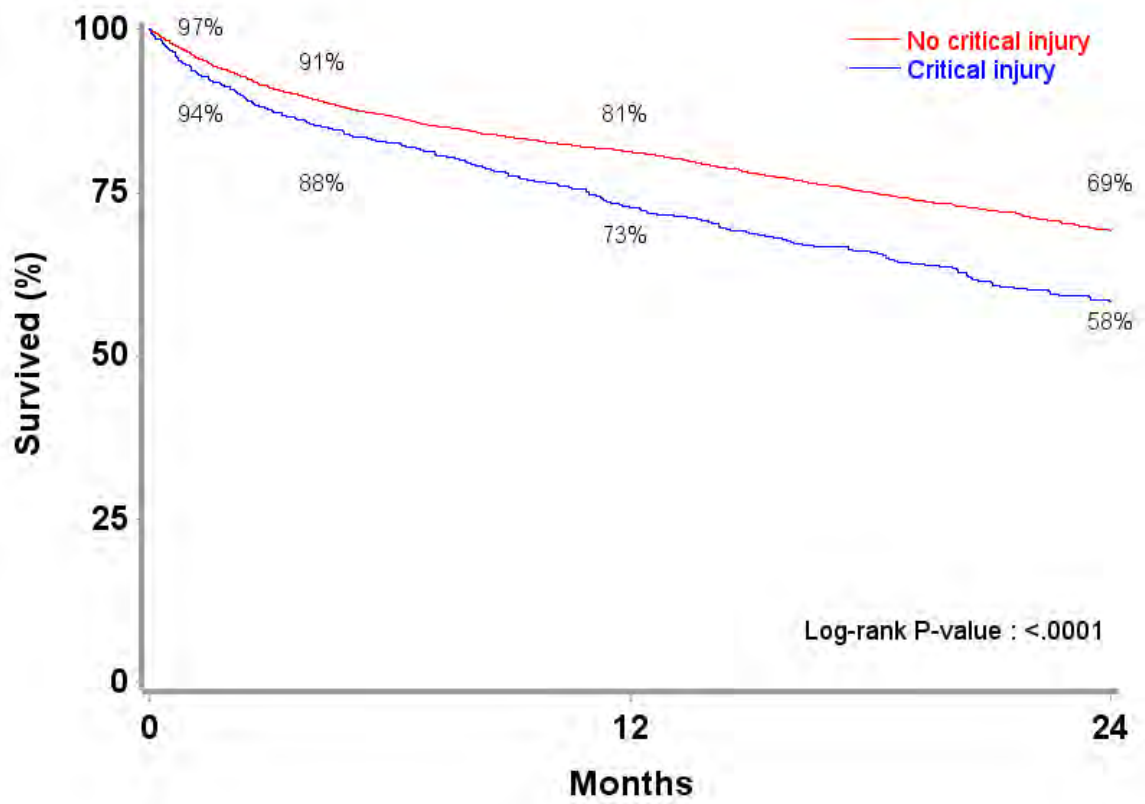


Figure-2. Kaplan-Meier survival curves according to critical injury¹



¹ Sample of n=15,000 patients who did not die in-hospital and were not discharged to hospice with 3,220

Tables

Table 1. Characteristics of study population according to mortality status².

	Patients who Survived 1 year (1) (n = 50,480)	Died During Index Hosp (2) (n = 1,936)	Died 0-30 Days (3) (n = 2,410)	Died 31-90 Days (4) (n = 3,084)	Died 91-365 Days (5) (n = 5,718)	Significant comparisons*
Age (yrs), mean (SD)	82 (8.1)	84 (7.8)	86 (7.6)	86 (7.5)	85 (7.6)	1 vs. 2, 3, 4, 5
Age (yrs), n (%)						1 vs. 2, 3, 4, 5
65-74	10,717 (21.2)	248 (12.8)	210 (8.7)	268 (8.7)	572 (10.0)	
75-84	19,035 (37.7)	692 (35.7)	710 (29.5)	859 (27.9)	1,781 (31.1)	
≥85	20,728 (41.1)	996 (51.4)	1,490 (61.2)	1,957 (63.5)	3,365 (58.8)	
Female, n (%)	38,566 (76.4)	1,148 (59.3)	1,567 (65.0)	2,115 (68.6)	4,056 (70.9)	1 vs. 2, 3, 4, 5
Race/Ethnicity, n (%)						1 vs. 2, 3, 4, 5
<i>Non-Hispanic White</i>	45,257 (89.7)	1,743 (90.0)	2,224 (92.3)	2,816 (91.3)	5,184 (90.1)	
<i>Non-Hispanic Black</i>	2,058 (4.1)	68 (3.5)	90 (3.7)	125 (4.1)	251 (4.4)	
<i>Hispanic</i>	1,957 (3.9)	57 (2.9)	61 (2.5)	96 (3.1)	186 (3.3)	
<i>Other</i>	1,208 (2.4)	68 (3.5)	35 (1.5)	47 (1.5)	97 (1.7)	
Elixhauser Score, mean (SD)	3.7 (3.1)	4.3 (3.4)	4.6 (3.4)	4.4 (3.3)	4.5 (3.3)	1 vs. 2, 3, 4, 5
Elixhauser Score, n (%)						1 vs. 2, 3, 4, 5
0	11,719 (23.2)	407 (21.0)	443 (18.4)	621 (20.1)	1,051 (18.4)	
1-2	8,571 (17.0)	249 (12.9)	211 (8.8)	241 (7.8)	491 (8.6)	
3-4	12,352 (24.5)	357 (18.4)	372 (15.4)	447 (14.5)	921 (16.1)	
≥5	19,090 (37.8)	873 (45.1)	1,164 (48.5)	1,470 (47.7)	2,788 (48.8)	

*Significant at alpha = 0.05/4 = 0.0125

² Patients who died were compared to patients who survived greater than one year.

Table 2. Injury patterns and severity of elderly trauma patients according to mortality status³.

	Patients who Survived 1 year (1) (n = 50,480)	Died During Index Hosp (2) (n = 1,936)	Died 0-30 Days (3) (n = 2,410)	Died 31-90 Days (4) (n = 3,084)	Died 91-365 Days (5) (n = 5,718)	Significant comparisons*
Critical injury, n (%)	7,305 (14.5)	977 (50.5)	589 (24.4)	600 (19.5)	1,002 (17.5)	1 vs. 2, 3, 4, 5
Max AIS ≥ 3, n (%)	31,571 (62.5)	1,561 (80.6)	1,849 (76.7)	2,195 (71.2)	3,842 (67.2)	1 vs. 2, 3, 4, 5
AIS region, n (%)						
Head AIS ≥ 3	4,588 (9.1)	670 (34.6)	328 (13.6)	280 (9.1)	560 (9.8)	1 vs. 2, 3
Face AIS ≥ 3	---	---	---	---	---	
Neck AIS ≥ 3	---	---	---	---	---	
Thorax AIS ≥ 3	1,606 (3.2)	116 (6.0)	64 (2.7)	63 (2.0)	120 (2.1)	1 vs. 2, 4, 5
Abdomen pelvis AIS ≥ 3	101 (0.2)	---	---	---	---	
Spine AIS ≥ 3	354 (0.7)	34 (1.8)	25 (1.0)	20 (0.6)	41 (0.7)	1 vs. 2
Upper extremity AIS ≥ 3	330 (0.7)	---	---	---	---	
Lower extremity AIS ≥ 3	25,238 (50.0)	817 (42.2)	1,464 (60.7)	1,864 (60.4)	3,155 (55.2)	1 vs. 2, 3, 4, 5
External AIS ≥ 3	38 (0.1)	---	---	---	---	

*Significant at alpha = 0.05/4 = 0.0125

Due to Medicare data use agreement cells with n<11 can not be reported.

³ Patients who died were compared to patients who survived greater than one year.

Table 3. Outcomes of elderly trauma patients according to mortality status.⁴

	Patients who Survived 1 year (1) (n = 50,480)	Died 0-30 Days (2) (n = 2,410)	Died 31-90 Days (3) (n = 3,084)	Died 91-365 Days (4) (n = 5,718)	Significant comparisons*
LOS (days), median (IQR)	4 (3, 6)	5 (3, 8)	5 (4, 8)	5 (3, 7)	1 vs. 2, 3, 4
ICU LOS (days)					
<i>Mean (SD)</i>	1 (2.5)	2 (4.1)	1 (4.1)	1 (3.4)	1 vs. 2, 3, 4
<i>Median (IQR)</i>	0 (0, 0)	0 (0, 2)	0 (0, 1)	0 (0, 1)	1 vs. 2, 3, 4
Discharge disposition, n (%)					1 vs. 2, 3, 4
<i>Home</i>	8,444 (16.7)	158 (6.6)	196 (6.4)	504 (8.8)	
<i>Home with services</i>	5,754 (11.4)	136 (5.6)	224 (7.3)	489 (8.6)	
<i>Rehab</i>	9,015 (17.9)	244 (10.1)	415 (13.5)	854 (14.9)	
<i>LTAC</i>	330 (0.7)	68 (2.8)	80 (2.6)	90 (1.6)	
<i>Other</i>	52 (0.1)	---	---	---	
<i>Skilled nursing facility</i>	25,315 (50.1)	1,636 (67.9)	2,059 (66.8)	3,595 (62.9)	
<i>Other inpatient</i>	1,570 (3.1)	164 (6.8)	107 (3.5)	177 (3.1)	

*Significant at alpha = 0.05/3 = 0.017

Due to Medicare data use agreement cells with n<11 can not be reported.

⁴ Patients who died were compared to patients who survived greater than one year.

Table 4a. Multivariable model for mortality at selected time points⁵

	OR (95% CI)		
	0-30 Day Mortality	31-90 Day Mortality	91-365 Day Mortality
Male vs Female	2.2 (2, 2.4)	1.9 (1.8, 2.1)	1.6 (1.5, 1.7)
Age (yrs)			
65-74	- reference -	- reference -	- reference -
75-84	1.8 (1.5, 2.1)	1.7 (1.4, 1.9)	1.6 (1.5, 1.8)
≥85	3.4 (2.9, 3.9)	3.4 (3, 3.9)	2.8 (2.6, 3.1)
Elixhauser Score, n (%)			
0	- reference -	- reference -	- reference -
1-2	0.8 (0.7, 1)	0.7 (0.6, 0.8)	0.9 (0.8, 1.0)
3-4	1.1 (1, 1.3)	1.0 (0.9, 1.2)	1.1 (1.0, 1.2)
≥5	1.5 (1.3, 1.6)	1.3 (1.2, 1.5)	1.5 (1.4, 1.7)
Race/Ethnicity, n (%)			
Non-Hispanic White	- reference -	- reference -	- reference -
Non-Hispanic Black	1 (0.8, 1.2)	-----	1.1 (0.99, 1.3)
Hispanic	0.7 (0.6, 0.9)	-----	0.9 (0.8, 1.1)
Other	0.7 (0.5, 0.9)	-----	0.8 (0.6, 0.97)
Discharge disposition, n (%)			
Home	- reference -	- reference -	- reference -
Home with services	1.2 (0.9, 1.5)	1.6 (1.3, 1.9)	1.3 (1.2, 1.5)
Rehab	1.3 (1, 1.6)	1.7 (1.4, 2)	1.4 (1.2, 1.5)
LTAC	9.4 (6.9, 13)	9.1 (6.8, 12)	4 (3.1, 5.1)
Other	4 (1.4, 11)	2.3 (0.7, 7.6)	2.6 (1.3, 5.4)
Skilled nursing facility	2.8 (2.4, 3.3)	2.8 (2.4, 3.2)	1.9 (1.7, 2.1)
Other inpatient	4.8 (3.8, 6.0)	2.5 (2.0, 3.2)	1.6 (1.3, 1.9)

⁵ Utilizing patients who survived >365 days post-discharge as reference

Table 4b. Multivariable model for mortality at selected time points with significant injury region⁶

	OR (95% CI)		
	0-30 Day Mortality	31-90 Day Mortality	91-365 Day Mortality
Male vs Female	2.2 (2, 2.4)	1.9 (1.8, 2.1)	1.6 (1.5, 1.7)
Age (yrs)			
65-74	- reference -	- reference -	- reference -
75-84	1.7 (1.5, 2)	1.6 (1.4, 1.9)	1.6 (1.5, 1.8)
≥85	3.3 (2.8, 3.8)	3.4 (3, 3.9)	2.8 (2.6, 3.1)
Elixhauser Score, n (%)			
0	- reference -	- reference -	- reference -
1-2	0.8 (0.7, 0.9)	0.72 (0.63, 0.83)	0.88 (0.8, 1.0)
3-4	1.1 (1, 1)	1.0 (0.9, 1.2)	1.1 (1.0, 1.2)
≥5	1.5 (1.3, 2)	1.4 (1.2, 1.5)	1.5 (1.4, 1.7)
Race/Ethnicity, n (%)			
Non-Hispanic White	- reference -	- reference -	- reference -
Non-Hispanic Black	0.9 (0.8, 1.2)	-----	1.1 (1, 1.3)
Hispanic	0.7 (0.6, 0.9)	-----	0.9 (0.8, 1.1)
Other	0.6 (0.5, 0.9)	-----	0.8 (0.6, 0.9)
Discharge disposition, n (%)			
Home	- reference -	- reference -	- reference -
Home with services	1.2 (0.9, 1.5)	1.5 (1.2, 1.8)	1.3 (1.2, 1.5)
Rehab	1.1 (0.9, 1.4)	1.5 (1.2, 1.8)	1.4 (1.2, 1.6)
LTAC	8.2 (6, 11.2)	8.5 (6.4, 11)	4 (3.1, 5.2)
Other	3.4 (1.2, 9.5)	2.1 (0.7, 7)	2.6 (1.3, 5.4)
Skilled nursing facility	2.6 (2.2, 3.2)	2.5 (2.1, 2.9)	1.9 (1.8, 2.2)
Other inpatient	4.5 (3.5, 5.6)	2.2 (1.7, 2.8)	1.6 (1.4, 2.0)
AIS Region			
Head AIS ≥3	2.3 (2, 2.6)	-----	1.2 (1.1, 1.3)
Thorax AIS ≥3	-----	0.8 (0.6, 1.0)	0.8 (0.6, 0.9)
Spine AIS ≥ 3	2.4 (1.5, 4)	-----	-----
Lower Extremity AIS ≥3	1.5 (1.4, 1.7)	1.2 (1.1, 1.3)	-----

⁶ Utilizing patients who survived >365 days post-discharge as reference

Table 4c. Multivariable model for mortality at selected time points with critical injury variable⁷

	OR (95% CI)		
	0-30 Day Mortality	31-90 Day Mortality	91-365 Day Mortality
Male vs Female	2.1 (1.9, 2.3)	1.9 (1.7, 2)	1.6 (1.5, 1.7)
Age (yrs)			
65-74	- reference -	- reference -	- reference -
75-84	1.8 (1.5, 2.1)	1.7 (1.4, 1.9)	1.6 (1.5, 1.8)
≥85	3.4 (2.9, 4)	3.4 (3, 3.9)	2.8 (2.6, 3.1)
Elixhauser Score, n (%)			
0	- reference -	- reference -	- reference -
1-2	0.8 (0.7, 1.0)	0.7 (0.6, 0.8)	0.9 (0.8, 1.0)
3-4	1.1 (1.0, 1.3)	1 (0.9, 1.2)	1.1 (1.0, 1.2)
≥5	1.5 (1.3, 2.0)	1.3 (1.2, 1.5)	1.5 (1.4, 1.7)
Race/Ethnicity, n (%)			
Non-Hispanic White	- reference -	- reference -	- reference -
Non-Hispanic Black	0.9 (0.8, 1.2)	-----	1.1 (0.99, 1.3)
Hispanic	0.7 (0.5, 0.9)	-----	0.9 (0.8, 1.1)
Other	0.7 (0.5, 0.9)	-----	0.8 (0.6, 1.0)
Discharge disposition, n (%)			
Home	- reference -	- reference -	- reference -
Home with services	1.2 (1, 1.5)	1.6 (1.3, 1.9)	1.3 (1.2, 1.5)
Rehab	1.2 (1, 1.5)	1.7 (1.4, 2)	1.4 (1.2, 1.5)
LTAC	7.9 (5.8, 11)	8.3 (6.2, 11)	3.7 (2.9, 4.8)
Other	3.8 (1.3, 11)	2.3 (0.7, 7.4)	2.6 (1.2, 5.3)
Skilled nursing facility	2.8 (2.4, 3.4)	2.8 (2.4, 3.3)	1.9 (1.7, 2.1)
Other inpatient	4.8 (3.8, 6.0)	2.5 (1.9, 3.2)	1.6 (1.3, 1.9)
Critical Injury	1.8 (1.6, 2.0)	1.3 (1.2, 1.5)	1.2 (1.1, 1.3)

⁷ Utilizing patients who survived >365 days post-discharge as reference

Table 5a. Multivariable model for mortality at select time points⁸

	OR (95% CI)		
	0-30 Day Mortality	31-90 Day Mortality	91-365 Day Mortality
Male vs Female	2 (1.8, 2.2)	1.8 (1.6, 1.9)	1.6 (1.5, 1.7)
Age (yrs)			
65-74	- reference -	- reference -	- reference -
75-84	1.7 (1.4, 2.0)	1.6 (1.4, 1.8)	1.6 (1.5, 1.8)
≥85	2.9 (2.5, 3.4)	3.1 (2.7, 3.6)	2.8 (2.6, 3.1)
Elixhauser Score, n (%)			
0	- reference -	- reference -	- reference -
1-2	0.9 (0.7, 1.0)	0.7 (0.6, 0.9)	0.9 (0.8, 1.0)
3-4	1.1 (1, 1.3)	1 (0.9, 1.2)	1.1 (1, 1.2)
≥5	1.4 (1.2, 1.6)	1.3 (1.2, 1.4)	1.5 (1.4, 1.7)
Race/Ethnicity, n (%)			
Non-Hispanic White	- reference -	- reference -	- reference -
Non-Hispanic Black	0.96 (0.8, 1.2)	-----	1.1 (0.99, 1.3)
Hispanic	0.7 (0.6, 1)	-----	0.9 (0.8, 1.1)
Other	0.7 (0.5, 1)	-----	0.8 (0.6, 1.0)
Discharge disposition, n (%)			
Home	- reference -	- reference -	- reference -
Home with services	1.2 (0.9, 1.5)	1.5 (1.3, 1.9)	1.3 (1.2, 1.5)
Rehab	1.2 (0.99, 1.5)	1.7 (1.4, 2)	1.4 (1.2, 1.5)
LTAC	6.9 (5.1, 9.3)	7.6 (5.8, 10)	4 (3.1, 5.1)
Other	3.5 (1.2, 9.7)	2.1 (0.6, 6.7)	2.6 (1.3, 5.4)
Skilled nursing facility	2.5 (2.1, 3)	2.6 (2.2, 3)	1.9 (1.7, 2.1)
Other inpatient	4.4 (3.5, 5.5)	2.4 (1.9, 3.1)	1.6 (1.3, 1.9)

⁸ Utilizing patients who survived >mortality window for reference (e.g. for 0-30 day mortality time period the reference was anyone who survived >30 days).

Table 5b. Multivariable model for mortality at select time points with significant injury region⁹

	OR (95% CI)		
	0-30 Day Mortality	31-90 Day Mortality	91-365 Day Mortality
Male vs Female	2 (1.8, 2.1)	1.8 (1.7, 2)	1.6 (1.5, 1.7)
Age (yrs)			
65-74	- reference -	- reference -	- reference -
75-84	1.6 (1.4, 1.9)	1.6 (1.4, 1.8)	1.6 (1.5, 1.8)
≥85	2.8 (2.4, 3.2)	3.1 (2.7, 3.5)	2.8 (2.6, 3.1)
Elixhauser Score, n (%)			
0	- reference -	- reference -	- reference -
1-2	0.9 (0.74, 1)	0.7 (0.6, 0.9)	0.9 (0.8, 1.0)
3-4	1.1 (1, 1.3)	1.0 (0.9, 1.2)	1.1 (1.0, 1.2)
≥5	1.4 (1.3, 1.6)	1.3 (1.2, 1.4)	1.5 (1.4, 1.7)
Race/Ethnicity, n (%)			
Non-Hispanic White	- reference -	- reference -	- reference -
Non-Hispanic Black	0.95 (0.8, 1.2)	1.1 (1.0, 1.2)	1.1 (0.98, 1.3)
Hispanic	0.7 (0.6, 1.0)	0.9 (0.8, 1.0)	0.9 (0.8, 1.1)
Other	0.7 (0.5, 1.0)	0.95 (0.8, 1.1)	0.8 (0.6, 1.0)
Discharge disposition, n (%)			
Home	- reference -	- reference -	- reference -
Home with services	1.1 (0.9, 1.5)	1.5 (1.2, 1.8)	1.3 (1.2, 1.5)
Rehab	1.1 (0.9, 1.3)	1.5 (1.2, 1.7)	1.4 (1.2, 1.6)
LTAC	6 (4.4, 8.2)	7.1 (5.4, 9.5)	4 (3.1, 5.2)
Other	3 (1.1, 8.3)	1.9 (0.6, 6.0)	2.6 (1.3, 5.4)
Skilled nursing facility	2.4 (2, 2.8)	2.3 (2, 2.7)	1.9 (1.8, 2.2)
Other inpatient	4.1 (3.3, 5.2)	2.1 (1.7, 2.7)	1.6 (1.4, 2.0)
AIS Region			
Head AIS ≥=3	2.2 (1.9, 2.5)	----	1.2 (1.1, 1.3)
Spine	2.2 (1.4, 3.7)	----	0.8 (0.6, 0.9)
Thorax	----	0.8 (0.6, 1.1)	----
Lower Extremity	1.5 (1.4, 1.7)	1.2 (1.1, 1.3)	----

⁹ Utilizing patients who survived >mortality window for reference

Table 5c. Multivariable model for mortality at select time points with critical injury variable¹⁰

	OR (95% CI)		
	0-30 Day Mortality	31-90 Day Mortality	91-365 Day Mortality
Male vs Female	1.9 (1.8, 2.1)	1.7 (1.6, 1.9)	1.6 (1.5, 1.7)
Age (yrs)			
65-74	- reference -	- reference -	- reference -
75-84	1.7 (1.4, 2)	1.6 (1.4, 1.8)	1.6 (1.5, 1.8)
≥85	2.9 (2.5, 3.4)	3.1 (2.7, 3.6)	2.8 (2.6, 3.1)
Elixhauser Score, n (%)			
0	- reference -	- reference -	- reference -
1-2	0.87 (0.75, 1)	0.74 (0.65, 0.85)	0.9 (0.8, 0.98)
3-4	1.1 (1, 1.3)	1 (0.9, 1.2)	1.1 (1, 1.2)
≥5	1.4 (1.2, 1.6)	1.3 (1.2, 1.4)	1.5 (1.4, 1.7)
Race/Ethnicity, n (%)			
Non-Hispanic White	- reference -	- reference -	- reference -
Non-Hispanic Black	0.9 (0.8, 1.2)	-----	1.1 (0.99, 1.3)
Hispanic	0.7 (0.6, 0.9)	-----	0.9 (0.8, 1.1)
Other	0.7 (0.5, 0.97)	-----	0.8 (0.6, 1.0)
Discharge disposition, n (%)			
Home	- reference -	- reference -	- reference -
Home with services	1.2 (0.9, 1.5)	1.5 (1.3, 1.9)	1.3 (1.2, 1.5)
Rehab	1.2 (0.9, 1.4)	1.6 (1.4, 1.9)	1.4 (1.2, 1.5)
LTAC	5.8 (4.3, 7.9)	7 (5.3, 9.3)	3.7 (2.9, 4.8)
Other	3.3 (1.2, 9.2)	2 (0.6, 6.5)	2.6 (1.2, 5.3)
Skilled nursing facility	2.5 (2.1, 3.0)	2.6 (2.2, 3.0)	1.9 (1.7, 2.1)
Other Inpatient	4.4 (3.5, 5.5)	2.4 (1.9, 3.0)	1.6 (1.3, 1.9)
Critical Injury	1.7 (1.6, 1.9)	1.3 (1.2, 1.4)	1.2 (1.1, 1.3)

¹⁰ Utilizing patients who survived >mortality window for reference

Appendix

Appendix 1: Trauma Diagnosis Codes

Trauma Surgery Diagnosis Codes		
Trauma Injury Diagnosis Codes(specific)		
Craniofacial Injury	ICD-9 code	Definition
Skull fractures (+/-ICH)	80000, 80001, 80002, 80003, 80004, 80005, 80006, 80009	<p>Fracture of vault of skull (includes frontal bone and parietal bone) closed without mention of intracranial injury</p> <p>0 unspecified state of consciousness</p> <p>01 with no loss of consciousness</p> <p>02 with brief(less than 1 hour) loss of consciousness</p> <p>03 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>04 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>05 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>06 with loss of consciousness of unspecified duration</p> <p>09 with concussion, unspecified</p>
	80010, 80011, 80012, 80013, 80014, 80015, 80016, 80019	<p>Fracture of vault of skull (includes frontal bone and parietal bone) closed with cerebral laceration and contusion</p> <p>10 unspecified state of consciousness</p> <p>11 with no loss of consciousness</p> <p>12 with brief(less than 1 hour) loss of consciousness</p> <p>13 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>14 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>15 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>16 with loss of consciousness of unspecified duration</p> <p>19 with concussion, unspecified</p>
	80020, 80021, 80022, 80023, 80024, 80025, 80026, 80029	<p>Fracture of vault of skull (includes frontal bone and parietal bone) closed with subarachnoid, subdural, and extradural hemorrhage</p> <p>20 unspecified state of consciousness</p> <p>21 with no loss of consciousness</p> <p>22 with brief(less than 1 hour) loss of consciousness</p> <p>23 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>24 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>25 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>26 with loss of consciousness of unspecified duration</p> <p>29 with concussion, unspecified</p>
	80030, 80031, 80032, 80033, 80034, 80035, 80036, 80039	<p>Fracture of vault of skull (includes frontal bone and parietal bone) closed with other and unspecified intracranial hemorrhage</p> <p>30 unspecified state of consciousness</p> <p>31 with no loss of consciousness</p> <p>32 with brief(less than 1 hour) loss of consciousness</p> <p>33 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>34 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p>

	<p>35 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>36 with loss of consciousness of unspecified duration</p> <p>39 with concussion, unspecified</p>
<p>80040, 80041, 80042, 80043, 80044, 80045, 80046, 80049</p>	<p>Fracture of vault of skull (includes frontal bone and parietal bone) closed with intracranial injury of other and unspecified nature</p> <p>40 unspecified state of consciousness</p> <p>41 with no loss of consciousness</p> <p>42 with brief(less than 1 hour) loss of consciousness</p> <p>43 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>44 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>45 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>46 with loss of consciousness of unspecified duration</p> <p>49 with concussion, unspecified</p>
<p>80050, 80051, 80052, 80053, 80054, 80055, 80056, 80059</p>	<p>Fracture of vault of skull (includes frontal bone and parietal bone) open without mention of intracranial injury</p> <p>50 unspecified state of consciousness</p> <p>51 with no loss of consciousness</p> <p>52 with brief(less than 1 hour) loss of consciousness</p> <p>53 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>54 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>55 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>56 with loss of consciousness of unspecified duration</p> <p>59 with concussion, unspecified</p>
<p>80060, 80061, 80062, 80063, 80064, 80065, 80066, 80069</p>	<p>Fracture of vault of skull (includes frontal bone and parietal bone) open with cerebral laceration and contusion</p> <p>60 unspecified state of consciousness</p> <p>61 with no loss of consciousness</p> <p>62 with brief(less than 1 hour) loss of consciousness</p> <p>63 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>64 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>65 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>66 with loss of consciousness of unspecified duration</p> <p>69 with concussion, unspecified</p>
<p>80070, 80071, 80072, 80073, 80074, 80075, 80076, 80079</p>	<p>Fracture of vault of skull (includes frontal bone and parietal bone) open with subarachnoid, subdural, and extradural hemorrhage</p> <p>70 unspecified state of consciousness</p> <p>71 with no loss of consciousness</p> <p>72 with brief(less than 1 hour) loss of consciousness</p> <p>73 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>74 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>75 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>76 with loss of consciousness of unspecified duration</p> <p>79 with concussion, unspecified</p>
<p>80080, 80081, 80082, 80083,</p>	<p>Fracture of vault of skull (includes frontal bone and parietal bone) open with other and unspecified intracranial hemorrhage</p>

<p>80084, 80085, 80086, 80089</p>	<p>80 unspecified state of consciousness</p> <p>81 with no loss of consciousness</p> <p>82 with brief(less than 1 hour) loss of consciousness</p> <p>83 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>84 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>85 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>86 with loss of consciousness of unspecified duration</p> <p>89 with concussion, unspecified</p>
<p>80090, 80091, 80092, 80093, 80094, 80095, 80096, 80099</p>	<p>Fracture of vault of skull (includes frontal bone and parietal bone) open with intracranial injury of other and unspecified nature</p> <p>90 unspecified state of consciousness</p> <p>91 with no loss of consciousness</p> <p>92 with brief(less than 1 hour) loss of consciousness</p> <p>93 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>94 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>95 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>96 with loss of consciousness of unspecified duration</p> <p>99 with concussion, unspecified</p>
<p>80100, 80101, 80102, 80103, 80104, 80105, 80106, 80109</p>	<p>Fracture of base of skull (includes fossa: anterior, middle, posterior, occiput bone, orbital roof, sinus: ethmoid, frontal, sphenoid bone, temporal bone) closed without mention of intracranial injury</p> <p>00 unspecified state of consciousness</p> <p>01 with no loss of consciousness</p> <p>02 with brief(less than 1 hour) loss of consciousness</p> <p>03 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>04 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>05 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>06 with loss of consciousness of unspecified duration</p> <p>09 with concussion, unspecified</p>
<p>80110, 80111, 80112, 80113, 80114, 80115, 80116, 80119</p>	<p>Fracture of base of skull (includes fossa: anterior, middle, posterior, occiput bone, orbital roof, sinus: ethmoid, frontal, sphenoid bone, temporal bone) closed with cerebral laceration and contusion</p> <p>10 unspecified state of consciousness</p> <p>11 with no loss of consciousness</p> <p>12 with brief(less than 1 hour) loss of consciousness</p> <p>13 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>14 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>15 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>16 with loss of consciousness of unspecified duration</p> <p>19 with concussion, unspecified</p>
<p>80120, 80121, 80122, 80123, 80124, 80125, 80126, 80129</p>	<p>Fracture of base of skull (includes fossa: anterior, middle, posterior, occiput bone, orbital roof, sinus: ethmoid, frontal, sphenoid bone, temporal bone) closed with subarachnoid, subdural, and extradural hemorrhage</p> <p>20 unspecified state of consciousness</p> <p>21 with no loss of consciousness</p> <p>22 with brief(less than 1 hour) loss of consciousness</p> <p>23 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p>

	<p>24 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>25 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>26 with loss of consciousness of unspecified duration</p> <p>29 with concussion, unspecified</p>
<p>80130, 80131, 80132, 80133, 80134, 80135, 80136, 80139</p>	<p>Fracture of base of skull (includes fossa: anterior, middle, posterior, occiput bone, orbital roof, sinus: ethmoid, frontal, sphenoid bone, temporal bone) closed with other and unspecified intracranial hemorrhage</p> <p>30 unspecified state of consciousness</p> <p>31 with no loss of consciousness</p> <p>32 with brief(less than 1 hour) loss of consciousness</p> <p>33 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>34 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>35 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>36 with loss of consciousness of unspecified duration</p> <p>39 with concussion, unspecified</p>
<p>80140, 80141, 80142, 80143, 80144, 80145, 80146, 80149</p>	<p>Fracture of base of skull (includes fossa: anterior, middle, posterior, occiput bone, orbital roof, sinus: ethmoid, frontal, sphenoid bone, temporal bone) closed with intracranial injury of other and unspecified nature</p> <p>40 unspecified state of consciousness</p> <p>41 with no loss of consciousness</p> <p>42 with brief(less than 1 hour) loss of consciousness</p> <p>43 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>44 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>45 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>46 with loss of consciousness of unspecified duration</p> <p>49 with concussion, unspecified</p>
<p>80150, 80151, 80152, 80153, 80154, 80155, 80156, 80159</p>	<p>Fracture of base of skull (includes fossa: anterior, middle, posterior, occiput bone, orbital roof, sinus: ethmoid, frontal, sphenoid bone, temporal bone) open without mention of intracranial injury</p> <p>50 unspecified state of consciousness</p> <p>51 with no loss of consciousness</p> <p>52 with brief(less than 1 hour) loss of consciousness</p> <p>53 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>54 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>55 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>56 with loss of consciousness of unspecified duration</p> <p>59 with concussion, unspecified</p>
<p>80160, 80161, 80162, 80163, 80164, 80165, 80166, 80169</p>	<p>Fracture of base of skull (includes fossa: anterior, middle, posterior, occiput bone, orbital roof, sinus: ethmoid, frontal, sphenoid bone, temporal bone) open with cerebral laceration and contusion</p> <p>60 unspecified state of consciousness</p> <p>61 with no loss of consciousness</p> <p>62 with brief(less than 1 hour) loss of consciousness</p> <p>63 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>64 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>65 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>66 with loss of consciousness of unspecified duration</p>

	<p>69 with concussion, unspecified</p>
<p>80170, 80171, 80172, 80173, 80174, 80175, 80176, 80179</p>	<p>Fracture of base of skull (includes fossa: anterior, middle, posterior, occiput bone, orbital roof, sinus: ethmoid, frontal, sphenoid bone, temporal bone) open with subarachnoid, subdural, and extradural hemorrhage</p> <p>70 unspecified state of consciousness</p> <p>71 with no loss of consciousness</p> <p>72 with brief(less than 1 hour) loss of consciousness</p> <p>73 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>74 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>75 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>76 with loss of consciousness of unspecified duration</p> <p>79 with concussion, unspecified</p>
<p>80180, 80181, 80182, 80183, 80184, 80185, 80186, 80189</p>	<p>Fracture of base of skull (includes fossa: anterior, middle, posterior, occiput bone, orbital roof, sinus: ethmoid, frontal, sphenoid bone, temporal bone) open with other and unspecified intracranial hemorrhage</p> <p>80 unspecified state of consciousness</p> <p>81 with no loss of consciousness</p> <p>82 with brief(less than 1 hour) loss of consciousness</p> <p>83 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>84 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>85 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>86 with loss of consciousness of unspecified duration</p> <p>89 with concussion, unspecified</p>
<p>80190, 80191, 80192, 80193, 80194, 80195, 80196, 80199</p>	<p>Fracture of base of skull (includes fossa: anterior, middle, posterior, occiput bone, orbital roof, sinus: ethmoid, frontal, sphenoid bone, temporal bone) open with intracranial injury of other and unspecified nature</p> <p>90 unspecified state of consciousness</p> <p>91 with no loss of consciousness</p> <p>92 with brief(less than 1 hour) loss of consciousness</p> <p>93 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>94 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>95 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>96 with loss of consciousness of unspecified duration</p> <p>99 with concussion, unspecified</p>
<p>80300, 80301, 80302, 80303, 80304, 80305, 80306, 80309</p>	<p>Other and unqualified skull fractures (includes skull NOS, skull multiple NOS) closed without mention of intracranial injury</p> <p>00 unspecified state of consciousness</p> <p>01 with no loss of consciousness</p> <p>02 with brief(less than 1 hour) loss of consciousness</p> <p>03 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>04 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>05 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>06 with loss of consciousness of unspecified duration</p> <p>09 with concussion, unspecified</p>
<p>80310, 80311, 80312, 80313, 80314, 80315, 80316, 80319</p>	<p>Other and unqualified skull fractures (includes skull NOS, skull multiple NOS) closed with cerebral laceration and contusion</p> <p>10 unspecified state of consciousness</p> <p>11 with no loss of consciousness</p>

	<p>12 with brief(less than 1 hour) loss of consciousness</p> <p>13 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>14 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>15 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>16 with loss of consciousness of unspecified duration</p> <p>19 with concussion, unspecified</p>
80320, 80321, 80322, 80323, 80324, 80325, 80326, 80329	<p>Other and unqualified skull fractures (includes skull NOS, skull multiple NOS) closed with subarachnoid, subdural, and extradural hemorrhage</p> <p>20 unspecified state of consciousness</p> <p>21 with no loss of consciousness</p> <p>22 with brief(less than 1 hour) loss of consciousness</p> <p>23 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>24 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>25 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>26 with loss of consciousness of unspecified duration</p> <p>29 with concussion, unspecified</p>
80330, 80331, 80332, 80333, 80334, 80335, 80336, 80339	<p>Other and unqualified skull fractures (includes skull NOS, skull multiple NOS) closed with other and unspecified intracranial hemorrhage</p> <p>30 unspecified state of consciousness</p> <p>31 with no loss of consciousness</p> <p>32 with brief(less than 1 hour) loss of consciousness</p> <p>33 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>34 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>35 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>36 with loss of consciousness of unspecified duration</p> <p>39 with concussion, unspecified</p>
80340, 80341, 80342, 80343, 80344, 80345, 80346, 80349	<p>Other and unqualified skull fractures (includes skull NOS, skull multiple NOS) closed with intracranial injury of other and unspecified nature</p> <p>40 unspecified state of consciousness</p> <p>41 with no loss of consciousness</p> <p>42 with brief(less than 1 hour) loss of consciousness</p> <p>43 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>44 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>45 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>46 with loss of consciousness of unspecified duration</p> <p>49 with concussion, unspecified</p>
80350, 80351, 80352, 80353, 80354, 80355, 80356, 80359	<p>Other and unqualified skull fractures (includes skull NOS, skull multiple NOS) open without mention of intracranial injury</p> <p>50 unspecified state of consciousness</p> <p>51 with no loss of consciousness</p> <p>52 with brief(less than 1 hour) loss of consciousness</p> <p>53 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>54 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>55 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p>

	<p>56 with loss of consciousness of unspecified duration</p> <p>59 with concussion, unspecified</p>
<p>80360, 80361, 80362, 80363, 80364, 80365, 80366, 80369</p>	<p>Other and unqualified skull fractures (includes skull NOS, skull multiple NOS) open with cerebral laceration and contusion</p> <p>60 unspecified state of consciousness</p> <p>61 with no loss of consciousness</p> <p>62 with brief(less than 1 hour) loss of consciousness</p> <p>63 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>64 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>65 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>66 with loss of consciousness of unspecified duration</p> <p>69 with concussion, unspecified</p>
<p>80370, 80371, 80372, 80373, 80374, 80375, 80376, 80379</p>	<p>Other and unqualified skull fractures (includes skull NOS, skull multiple NOS) open with subarachnoid, subdural, and extradural hemorrhage</p> <p>70 unspecified state of consciousness</p> <p>71 with no loss of consciousness</p> <p>72 with brief(less than 1 hour) loss of consciousness</p> <p>73 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>74 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>75 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>76 with loss of consciousness of unspecified duration</p> <p>79 with concussion, unspecified</p>
<p>80380, 80381, 80382, 80383, 80384, 80385, 80386, 80389</p>	<p>Other and unqualified skull fractures (includes skull NOS, skull multiple NOS) open with other and unspecified intracranial hemorrhage</p> <p>80 unspecified state of consciousness</p> <p>81 with no loss of consciousness</p> <p>82 with brief(less than 1 hour) loss of consciousness</p> <p>83 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>84 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>85 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>86 with loss of consciousness of unspecified duration</p> <p>89 with concussion, unspecified</p>
<p>80390, 80391, 80392, 80393, 80394, 80395, 80396, 80399</p>	<p>Other and unqualified skull fractures (includes skull NOS, skull multiple NOS) open with intracranial injury of other and unspecified nature</p> <p>90 unspecified state of consciousness</p> <p>91 with no loss of consciousness</p> <p>92 with brief(less than 1 hour) loss of consciousness</p> <p>93 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>94 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>95 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>96 with loss of consciousness of unspecified duration</p> <p>99 with concussion, unspecified</p>
<p>80400, 80401, 80402, 80403, 80404, 80405, 80406, 80409</p>	<p>Multiple fractures involving skull or face with other bones closed without mention of intracranial injury</p> <p>00 unspecified state of consciousness</p>

	<p>01 with no loss of consciousness</p> <p>02 with brief(less than 1 hour) loss of consciousness</p> <p>03 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>04 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>05 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>06 with loss of consciousness of unspecified duration</p> <p>09 with concussion, unspecified</p>
<p>80410, 80411, 80412, 80413, 80414, 80415, 80416, 80419</p>	<p>Multiple fractures involving skull or face with other bones closed with cerebral laceration and contusion</p> <p>10 unspecified state of consciousness</p> <p>11 with no loss of consciousness</p> <p>12 with brief(less than 1 hour) loss of consciousness</p> <p>13 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>14 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>15 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>16 with loss of consciousness of unspecified duration</p> <p>19 with concussion, unspecified</p>
<p>80420, 80421, 80422, 80423, 80424, 80425, 80426, 80429</p>	<p>Multiple fractures involving skull or face with other bones closed with subarachnoid, subdural, and extradural hemorrhage</p> <p>20 unspecified state of consciousness</p> <p>21 with no loss of consciousness</p> <p>22 with brief(less than 1 hour) loss of consciousness</p> <p>23 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>24 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>25 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>26 with loss of consciousness of unspecified duration</p> <p>29 with concussion, unspecified</p>
<p>80430, 80431, 80432, 80433, 80434, 80435, 80436, 80439</p>	<p>Multiple fractures involving skull or face with other bones closed with other and unspecified intracranial hemorrhage</p> <p>30 unspecified state of consciousness</p> <p>31 with no loss of consciousness</p> <p>32 with brief(less than 1 hour) loss of consciousness</p> <p>33 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>34 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>35 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>36 with loss of consciousness of unspecified duration</p> <p>39 with concussion, unspecified</p>
<p>80440, 80441, 80442, 80443, 80444, 80445, 80446, 80449</p>	<p>Multiple fractures involving skull or face with other bones closed with intracranial injury of other and unspecified nature</p> <p>40 unspecified state of consciousness</p> <p>41 with no loss of consciousness</p> <p>42 with brief(less than 1 hour) loss of consciousness</p> <p>43 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>44 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p>

	<p>45 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>46 with loss of consciousness of unspecified duration</p> <p>49 with concussion, unspecified</p>
80450, 80451, 80452, 80453, 80454, 80455, 80456, 80459	<p>Multiple fractures involving skull or face with other bones open without mention of intracranial injury</p> <p>50 unspecified state of consciousness</p> <p>51 with no loss of consciousness</p> <p>52 with brief(less than 1 hour) loss of consciousness</p> <p>53 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>54 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>55 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>56 with loss of consciousness of unspecified duration</p> <p>59 with concussion, unspecified</p>
80460, 80461, 80462, 80463, 80464, 80465, 80466, 80469	<p>Multiple fractures involving skull or face with other bones open with cerebral laceration and contusion</p> <p>60 unspecified state of consciousness</p> <p>61 with no loss of consciousness</p> <p>62 with brief(less than 1 hour) loss of consciousness</p> <p>63 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>64 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>65 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>66 with loss of consciousness of unspecified duration</p> <p>69 with concussion, unspecified</p>
80470, 80171, 80472, 80173, 80474, 80475, 80476, 80479	<p>Multiple fractures involving skull or face with other bones open with subarachnoid, subdural, and extradural hemorrhage</p> <p>70 unspecified state of consciousness</p> <p>71 with no loss of consciousness</p> <p>72 with brief(less than 1 hour) loss of consciousness</p> <p>73 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>74 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>75 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>76 with loss of consciousness of unspecified duration</p> <p>79 with concussion, unspecified</p>
80480, 80481, 80482, 80483, 80484, 80485, 80486, 80489	<p>Multiple fractures involving skull or face with other bones open with other and unspecified intracranial hemorrhage</p> <p>80 unspecified state of consciousness</p> <p>81 with no loss of consciousness</p> <p>82 with brief(less than 1 hour) loss of consciousness</p> <p>83 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>84 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>85 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>86 with loss of consciousness of unspecified duration</p> <p>89 with concussion, unspecified</p>
80490, 80491, 80492, 80493,	<p>Multiple fractures involving skull or face with other bones open with intracranial injury of other and unspecified nature</p>

	80494, 80495, 80496, 80499	<p>90 unspecified state of consciousness</p> <p>91 with no loss of consciousness</p> <p>92 with brief(less than 1 hour) loss of consciousness</p> <p>93 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>94 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>95 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>96 with loss of consciousness of unspecified duration</p> <p>99 with concussion, unspecified</p>
Intracranial hemorrhage (ICH)	85100, 85101, 85102, 85103, 85104, 85105, 85106, 85109	<p>Cortex (cerebral) contusion without mention of open intracranial wound</p> <p>00 unspecified state of consciousness</p> <p>01 with no loss of consciousness</p> <p>02 with brief(less than 1 hour) loss of consciousness</p> <p>03 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>04 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>05 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>06 with loss of consciousness of unspecified duration</p> <p>09 with concussion, unspecified</p>
	85110, 85111, 85112, 85113, 85114, 85115, 85116, 85119	<p>Cortex (cerebral) contusion with open intracranial wound</p> <p>10 unspecified state of consciousness</p> <p>11 with no loss of consciousness</p> <p>12 with brief(less than 1 hour) loss of consciousness</p> <p>13 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>14 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>15 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>16 with loss of consciousness of unspecified duration</p> <p>19 with concussion, unspecified</p>
	85120, 85121, 85122, 85123, 85124, 85125, 85126, 85129	<p>Cortex (cerebral) laceration without mention of open intracranial wound</p> <p>20 unspecified state of consciousness</p> <p>21 with no loss of consciousness</p> <p>22 with brief(less than 1 hour) loss of consciousness</p> <p>23 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>24 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>25 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>26 with loss of consciousness of unspecified duration</p> <p>29 with concussion, unspecified</p>
	85130, 85131, 85132, 85133, 85134, 85135, 85136, 85139	<p>Cortex (cerebral) laceration with open intracranial wound</p> <p>30 unspecified state of consciousness</p> <p>31 with no loss of consciousness</p> <p>32 with brief(less than 1 hour) loss of consciousness</p> <p>33 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p>

	<p>34 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>35 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>36 with loss of consciousness of unspecified duration</p> <p>39 with concussion, unspecified</p>
<p>85140, 85141, 85142, 85143, 85144, 85145, 85146, 85149</p>	<p>Cerebellar or brain stem contusion without mention of open intracranial wound</p> <p>40 unspecified state of consciousness</p> <p>41 with no loss of consciousness</p> <p>42 with brief(less than 1 hour) loss of consciousness</p> <p>43 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>44 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>45 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>46 with loss of consciousness of unspecified duration</p> <p>49 with concussion, unspecified</p>
<p>85150, 85151, 85152, 85153, 85154, 85155, 85156, 85159</p>	<p>Cerebellar or brain stem contusion with open intracranial wound</p> <p>50 unspecified state of consciousness</p> <p>51 with no loss of consciousness</p> <p>52 with brief(less than 1 hour) loss of consciousness</p> <p>53 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>54 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>55 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>56 with loss of consciousness of unspecified duration</p> <p>59 with concussion, unspecified</p>
<p>85160, 85161, 85162, 85163, 85164, 85165, 85166, 85169</p>	<p>Cerebellar or brain stem laceration without mention of open intracranial wound</p> <p>60 unspecified state of consciousness</p> <p>61 with no loss of consciousness</p> <p>62 with brief(less than 1 hour) loss of consciousness</p> <p>63 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>64 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>65 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>66 with loss of consciousness of unspecified duration</p> <p>69 with concussion, unspecified</p>
<p>85170, 85171, 85172, 85173, 85174, 85175, 85176, 85179</p>	<p>Cerebellar or brain stem laceration with open intracranial wound</p> <p>70 unspecified state of consciousness</p> <p>71 with no loss of consciousness</p> <p>72 with brief(less than 1 hour) loss of consciousness</p> <p>73 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>74 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>75 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>76 with loss of consciousness of unspecified duration</p> <p>79 with concussion, unspecified</p>

<p>85180, 85181, 85182, 85183, 85184, 85185, 85186, 85189</p>	<p>Other and unspecified cerebral laceration and contusion, without mention of open intracranial wound (brain (membrane) NOS)</p> <p>80 unspecified state of consciousness</p> <p>81 with no loss of consciousness</p> <p>82 with brief(less than 1 hour) loss of consciousness</p> <p>83 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>84 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>85 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>86 with loss of consciousness of unspecified duration</p> <p>89 with concussion, unspecified</p>
<p>85190, 85191, 85192, 85193, 85194, 85195, 85196, 85199</p>	<p>Other and unspecified cerebral laceration and contusion, with open intracranial wound</p> <p>90 unspecified state of consciousness</p> <p>91 with no loss of consciousness</p> <p>92 with brief(less than 1 hour) loss of consciousness</p> <p>93 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>94 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>95 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>96 with loss of consciousness of unspecified duration</p> <p>99 with concussion, unspecified</p>
<p>85200, 85201, 85202, 85203, 85204, 85205, 85206, 85209</p>	<p>Subarachnoid hemorrhage following injury without mention of open intracranial wound (Middle meningeal hemorrhage following injury)(<i>Excludes:</i> Cerebral contusion or laceration (with hemorrhage) (8510-8519))</p> <p>00 unspecified state of consciousness</p> <p>01 with no loss of consciousness</p> <p>02 with brief(less than 1 hour) loss of consciousness</p> <p>03 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>04 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>05 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>06 with loss of consciousness of unspecified duration</p> <p>09 with concussion, unspecified</p>
<p>85210, 85211, 85212, 85213, 85214, 85215, 85216, 85219</p>	<p>Subarachnoid hemorrhage following injury with open intracranial wound</p> <p>10 unspecified state of consciousness</p> <p>11 with no loss of consciousness</p> <p>12 with brief(less than 1 hour) loss of consciousness</p> <p>13 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>14 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>15 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>16 with loss of consciousness of unspecified duration</p> <p>19 with concussion, unspecified</p>
<p>85220, 85221, 85222, 85223, 85224, 85225, 85226, 85229</p>	<p>Subdural hemorrhage following injury without mention of open intracranial wound</p> <p>20 unspecified state of consciousness</p> <p>21 with no loss of consciousness</p> <p>22 with brief(less than 1 hour) loss of consciousness</p>

	<p>23 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>24 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>25 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>26 with loss of consciousness of unspecified duration</p> <p>29 with concussion, unspecified</p>
85230, 85231, 85232, 85233, 85234, 85235, 85236, 85239	<p>Subdural hemorrhage following injury with open intracranial wound</p> <p>30 unspecified state of consciousness</p> <p>31 with no loss of consciousness</p> <p>32 with brief(less than 1 hour) loss of consciousness</p> <p>33 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>34 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>35 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>36 with loss of consciousness of unspecified duration</p> <p>39 with concussion, unspecified</p>
85240, 85241, 85242, 85243, 85244, 85245, 85246, 85249	<p>Extradural hemorrhage following injury without mention of open intracranial wound</p> <p>40 unspecified state of consciousness</p> <p>41 with no loss of consciousness</p> <p>42 with brief(less than 1 hour) loss of consciousness</p> <p>43 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>44 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>45 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>46 with loss of consciousness of unspecified duration</p> <p>49 with concussion, unspecified</p>
85250, 85251, 85252, 85253, 85254, 85255, 85256, 85259	<p>Extradural hemorrhage following injury with open intracranial wound</p> <p>50 unspecified state of consciousness</p> <p>51 with no loss of consciousness</p> <p>52 with brief(less than 1 hour) loss of consciousness</p> <p>53 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>54 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>55 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>56 with loss of consciousness of unspecified duration</p> <p>59 with concussion, unspecified</p>
85300, 85301, 85302, 85303, 85304, 85305, 85306, 85309	<p>Other and unspecified intracranial hemorrhage following injury without mention of open intracranial wound (Cerebral compression due to injury, intracranial hematoma following injury, traumatic cerebral hemorrhage)</p> <p>00 unspecified state of consciousness</p> <p>01 with no loss of consciousness</p> <p>02 with brief(less than 1 hour) loss of consciousness</p> <p>03 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>04 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>05 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>06 with loss of consciousness of unspecified duration</p>

		09 with concussion, unspecified
	85310, 85311, 85312, 85313, 85314, 85315, 85316, 85319	<p>Other and unspecified intracranial hemorrhage following injury with open intracranial wound</p> <p>10 unspecified state of consciousness</p> <p>11 with no loss of consciousness</p> <p>12 with brief(less than 1 hour) loss of consciousness</p> <p>13 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>14 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>15 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>16 with loss of consciousness of unspecified duration</p> <p>19 with concussion, unspecified</p>
	85400, 85401, 85402, 85403, 85404, 85405, 85406, 85409	<p>Intracranial injury of other and unspecified nature without mention of open intracranial wound (includes: brain injury NOS, cavernous sinus, intracranial injury <i>Excludes:</i> any condition classifiable to 850-853, head injury NOS (95901))</p> <p>00 unspecified state of consciousness</p> <p>01 with no loss of consciousness</p> <p>02 with brief(less than 1 hour) loss of consciousness</p> <p>03 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>04 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>05 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>06 with loss of consciousness of unspecified duration</p> <p>09 with concussion, unspecified</p>
	85410, 85411, 85412, 85413, 85414, 85415, 85416, 85419	<p>Intracranial injury of other and unspecified nature with open intracranial wound (includes: brain injury NOS, cavernous sinus, intracranial injury <i>Excludes:</i> any condition classifiable to 850-853, head injury NOS (95901))</p> <p>10 unspecified state of consciousness</p> <p>11 with no loss of consciousness</p> <p>12 with brief(less than 1 hour) loss of consciousness</p> <p>13 with moderate(1-24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>14 with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level</p> <p>15 with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level (Also use this code when a patient is unconscious and dies before regaining consciousness, regardless of the duration of the loss of consciousness)</p> <p>16 with loss of consciousness of unspecified duration</p> <p>19 with concussion, unspecified</p>
Facial fractures	802	Fracture of face bones
	8020, 8021	Nasal bones (closed), Nasal bones (open)
	8022	Mandible (closed) Inferior maxilla, lower jaw(bone)
	80220, 80221, 80222, 80223, 80224, 80225, 80226, 80227, 80228, 80229	Unspecified site, condylar process, subcondylar, coronoid process, ramus, unspecified, angle of jaw, symphysis of body, alveolar border of body, body, other and unspecified, multiple sites
	80230, 80231, 80232, 80233, 80234, 80235, 80236, 80237, 80238, 80239	Mandible (open) Inferior maxilla, lower jaw(bone) Unspecified site, condylar process, subcondylar, coronoid process, ramus, unspecified, angle of jaw, symphysis of body, alveolar border of body, body, other and unspecified, multiple sites
	8024	Malar and maxillary bones (closed) Superior maxilla, upper jaw(bone), zygoma, zygomatic arch

	8025	Malar and maxillary bones (open)
	8026	Orbital floor (blow-out) (closed)
	8027	Orbital floor (blow-out) (open)
	8028	Other facial bones (closed) Alveolus, Orbit: NOS, part other than roof or floor, Palate <i>Excludes:</i> orbital: floor (8026), roof (8010-8019)
	8029	Other facial bones (open)
Neck Injury (non-spine)	ICD-9 code	Definition
Laryngotracheal fracture	8075	Larynx and trachea (closed) Hyoid bone, thyroid cartilage, trachea
	8076	Larynx and trachea (open)
Vertebro-carotid injury	44321	Dissection of carotid artery
	44324	Dissection of vertebral artery
	9000	Injury to carotid artery
	90000	Injury to carotid artery, unspecified
	90001	Injury to common carotid artery
	90002	Injury to external carotid artery
	90003	Injury to internal carotid artery
	9001	Injury to internal jugular vein
	90081	Injury to other specified blood vessels of head and neck, External jugular vein Jugular vein NOS
Spine Injury	ICD-9 code	Definition
Undesignated spinal fracture	805	Fracture of vertebral column without mention of spinal cord injury Includes: neural arch, spine, spinous process, transverse process, vertebra
	8058	Fracture of vertebral column without mention of spinal cord injury, unspecified (closed)
	8059	Fracture of vertebral column without mention of spinal cord injury, unspecified (open)
	8394, 83940, 83941, 83942, 83949	Other, multiple, and ill-defined dislocations, Other vertebra (closed) 40 vertebra, unspecified site (Spine NOS) 41 Coccyx 42 Sacrum (Sacroiliac (joint)) 43 Other
	8395, 83950, 83951, 83952, 83959	Other, multiple, and ill-defined dislocations, Other vertebra (open) 50 vertebra, unspecified site 51 Coccyx 52 Sacrum 53 Other
Cervical spine injury	80500, 80501 80502, 80503 80504, 80505 80506, 80507 80508	Fracture of vertebral column without mention of spinal cord injury, cervical (closed) Atlas, axis 00 cervical vertebra, unspecified level 01 first cervical vertebra 02 second cervical vertebra 03 third cervical vertebra

		<p>04 fourth cervical vertebra</p> <p>05 fifth cervical vertebra</p> <p>06 sixth cervical vertebra</p> <p>07 seventh cervical vertebra</p> <p>08 eighth cervical vertebra</p>
	<p>80510, 80511 80512, 80513 80514, 80515 80516, 80517 80518</p>	<p>Fracture of vertebral column without mention of spinal cord injury, cervical (open)</p> <p>10 cervical vertebra, unspecified level</p> <p>11 first cervical vertebra</p> <p>12 second cervical vertebra</p> <p>13 third cervical vertebra</p> <p>14 fourth cervical vertebra</p> <p>15 fifth cervical vertebra</p> <p>16 sixth cervical vertebra</p> <p>17 seventh cervical vertebra</p> <p>18 multiple cervical vertebrae</p>
	<p>8390, 83900 83901, 83902 83903, 83904 83905, 83906 83907, 83908</p>	<p>Other, multiple, and ill-defined dislocations, Cervical vertebra (closed)</p> <p>Cervical spine, neck</p> <p>00 cervical vertebra, unspecified</p> <p>01 first cervical vertebra</p> <p>02 second cervical vertebra</p> <p>03 third cervical vertebra</p> <p>04 fourth cervical vertebra</p> <p>05 fifth cervical vertebra</p> <p>06 sixth cervical vertebra</p> <p>07 seventh cervical vertebra</p> <p>08 multiple cervical vertebrae</p>
	<p>8391, 83910 83911, 83912 83913, 83914 83915, 83916 83917, 83918</p>	<p>Other, multiple, and ill-defined dislocations, Cervical vertebra (open)</p> <p>Cervical spine, neck</p> <p>10 cervical vertebra, unspecified</p> <p>11 first cervical vertebra</p> <p>12 second cervical vertebra</p> <p>13 third cervical vertebra</p> <p>14 fourth cervical vertebra</p> <p>15 fifth cervical vertebra</p> <p>16 sixth cervical vertebra</p> <p>17 seventh cervical vertebra</p> <p>18 multiple cervical vertebrae</p>
Thoracic spine injury	8471	Sprains and strains of other and unspecified parts of back, Thoracic
	8052	Fracture of vertebral column without mention of spinal cord injury, Dorsal (thoracic) (closed)
	8053	Fracture of vertebral column without mention of spinal cord injury, Dorsal (thoracic) (open)
	8392	Other, multiple, and ill-defined dislocations, Thoracic and lumbar vertebra (closed)

	8393	Other, multiple, and ill-defined dislocations, Thoracic and lumbar vertebra (open)
Lumbosacral spine injury	8472	
	83920, 83921	Other, multiple, and ill-defined dislocations, Thoracic and lumbar vertebra (closed) 20 Lumbar vertebra 21 Thoracic vertebra Dorsal (thoracic)vertebra
	83930, 83931	Other, multiple, and ill-defined dislocations, Thoracic and lumbar vertebra (open) 30 Lumbar vertebra 31 Thoracic vertebra
	8054	Fracture of vertebral column without mention of spinal cord injury, Lumbar (closed)
	8055	Fracture of vertebral column without mention of spinal cord injury, Lumbar (open)
	8056	Fracture of vertebral column without mention of spinal cord injury, Sacrum and coccyx(closed)
	8057	Fracture of vertebral column without mention of spinal cord injury, Sacrum and coccyx (open)
	Spinal cord / nerve injury	806
8060, 80600		Fracture of vertebral column with spinal cord injury, Cervical (closed)
80601, 80602		x0 C ₁ -C ₄ level with unspecified spinal cord injury (Cervical region NOS with spinal cord injury NOS)
80603, 80604		01 C ₁ -C ₄ level with complete lesion of cord
80605, 80606		02 C ₁ -C ₄ level with anterior cord syndrome
80607, 80608		03 C ₁ -C ₄ level with central cord syndrome
80609		04 C ₁ -C ₄ level with other specified spinal cord injury (C ₁ -C ₄ level with: incomplete spinal cord lesion NOS, posterior cord syndrome) 05 C ₅ -C ₇ level with unspecified spinal cord injury 06 C ₅ -C ₇ level with complete lesion of cord 07 C ₅ -C ₇ level with anterior cord syndrome 08 C ₅ -C ₇ level with central cord syndrome 09 C ₅ -C ₇ level with other specified spinal cord injury (C ₅ -C ₇ level with: incomplete spinal cord lesion NOS, posterior cord syndrome)
8061, 80610		Fracture of vertebral column with spinal cord injury, Cervical (open)
80611, 80612		10 C ₁ -C ₄ level with unspecified spinal cord injury
80613, 80614		11 C ₁ -C ₄ level with complete lesion of cord
80615, 80616	12 C ₁ -C ₄ level with anterior cord syndrome	
80617, 80618	13 C ₁ -C ₄ level with central cord syndrome	
80619	14 C ₁ -C ₄ level with other specified spinal cord injury (C ₁ -C ₄ level with: incomplete spinal cord lesion NOS, posterior cord syndrome) 15 C ₅ -C ₇ level with unspecified spinal cord injury 16 C ₅ -C ₇ level with complete lesion of cord 17 C ₅ -C ₇ level with anterior cord syndrome 18 C ₅ -C ₇ level with central cord syndrome 19 C ₅ -C ₇ level with other specified spinal cord injury (C ₅ -C ₇ level with: incomplete spinal cord lesion NOS, posterior cord syndrome)	
8062, 80620	Fracture of vertebral column with spinal cord injury, Dorsal (thoracic) (closed)	
80621, 80622	20 T ₁ -T ₆ level with unspecified spinal cord injury (Thoracic region NOS with spinal cord injury NOS)	
80623, 80624	21 T ₁ -T ₆ level with complete lesion of cord	

80625, 80626	22 T ₁ -T ₆ level with anterior cord syndrome
80627, 80628	23 T ₁ -T ₆ level with central cord syndrome
80629	24 T ₁ -T ₆ level with other specified spinal cord injury (T ₁ -T ₆ level with: incomplete spinal cord lesion NOS, posterior cord syndrome)
	25 T ₇ -T ₁₂ level with unspecified spinal cord injury
	26 T ₇ -T ₁₂ level with complete lesion of cord
	27 T ₇ -T ₁₂ level with anterior cord syndrome
	28 T ₇ -T ₁₂ level with central cord syndrome
	29 T ₇ -T ₁₂ level with other specified spinal cord injury (T ₇ -T ₁₂ level with: incomplete spinal cord lesion NOS, posterior cord syndrome)
8063, 80630	Fracture of vertebral column with spinal cord injury, Dorsal (thoracic) (open)
80631, 80632	30 T ₁ -T ₆ level with unspecified spinal cord injury
80633, 80634	31 T ₁ -T ₆ level with complete lesion of cord
80635, 80636	32 T ₁ -T ₆ level with anterior cord syndrome
80637, 80638	33 T ₁ -T ₆ level with central cord syndrome
80639	34 T ₁ -T ₆ level with other specified spinal cord injury (T ₁ -T ₆ level with: incomplete spinal cord lesion NOS, posterior cord syndrome)
	35 T ₇ -T ₁₂ level with unspecified spinal cord injury
	36 T ₇ -T ₁₂ level with complete lesion of cord
	37 T ₇ -T ₁₂ level with anterior cord syndrome
	38 T ₇ -T ₁₂ level with central cord syndrome
	39 T ₇ -T ₁₂ level with other specified spinal cord injury (T ₇ -T ₁₂ level with: incomplete spinal cord lesion NOS, posterior cord syndrome)
8064	Fracture of vertebral column with spinal cord injury, Lumbar (closed)
8065	Fracture of vertebral column with spinal cord injury, Lumbar (open)
8066, 80660, 80661, 80662	Fracture of vertebral column with spinal cord injury, Sacrum and coccyx (closed)
80669	60 With unspecified spinal cord injury
	61 With complete cauda equine lesion
	62 With other cauda equine injury
	69 With other spinal cord injury
8067, 80670, 80671, 80672	Fracture of vertebral column with spinal cord injury, Sacrum and coccyx (open)
80679	70 With unspecified spinal cord injury
	71 With complete cauda equine lesion
	72 With other cauda equine injury
	79 With other spinal cord injury
8068	Fracture of vertebral column with spinal cord injury, Unspecified (closed)
8069	Fracture of vertebral column with spinal cord injury, Unspecified (open)
952	Spinal cord injury without evidence of spinal bone injury
9520, 95200	Spinal cord injury without evidence of spinal bone injury, Cervical
95201, 9502	00 C ₁ -C ₄ level with unspecified spinal cord injury (Spinal cord injury NOS, cervical region NOS)
95203, 95204	01 C ₁ -C ₄ level with complete lesion of cord
95205, 95206	02 C ₁ -C ₄ level with anterior cord syndrome
95207, 95208	03 C ₁ -C ₄ level with central cord syndrome
95209	04 C ₁ -C ₄ level with other specified spinal cord injury (incomplete spinal cord lesion at C ₁ -C ₄ level: NOS, with posterior cord syndrome)
	05 C ₅ -C ₇ level with unspecified spinal cord injury

		06 C ₅ -C ₇ level with complete lesion of cord	
		07 C ₅ -C ₇ level with anterior cord syndrome	
		08 C ₅ -C ₇ level with central cord syndrome	
		09 C ₅ -C ₇ level with other specified spinal cord injury (incomplete spinal cord lesion at C ₅ -C ₇ level: NOS, with posterior cord syndrome)	
9521, 95210		Spinal cord injury without evidence of spinal bone injury, Dorsal (thoracic)	
95211, 9512		æ0 T ₁ -T ₆ level with unspecified spinal cord injury (Spinal cord injury NOS, thoracic region NOS)	
95213, 95214		11 T ₁ -T ₆ level with complete lesion of cord	
95215, 95216		12 T ₁ -T ₆ level with anterior cord syndrome	
95217, 95218		13 T ₁ -T ₆ level with central cord syndrome	
95219		14 T ₁ -T ₆ level with other specified spinal cord injury (incomplete spinal cord lesion at T ₁ -T ₆ level: NOS, with posterior cord syndrome)	
		15 T ₇ -T ₁₂ level with unspecified spinal cord injury	
		16 T ₇ -T ₁₂ level with complete lesion of cord	
		17 T ₇ -T ₁₂ level with anterior cord syndrome	
		18 T ₇ -T ₁₂ level with central cord syndrome	
		19 T ₇ -T ₁₂ level with other specified spinal cord injury (incomplete spinal cord lesion at T ₇ -T ₁₂ level: NOS, with posterior cord syndrome)	
9522		Spinal cord injury without evidence of spinal bone injury, Lumbar	
9523		Spinal cord injury without evidence of spinal bone injury, Sacral	
9524		Spinal cord injury without evidence of spinal bone injury, Cauda equine	
9528		Spinal cord injury without evidence of spinal bone injury, Multiple sites of spinal cord	
9529		Spinal cord injury without evidence of spinal bone injury Unspecified site of spinal cord	
9530		Injury to nerve roots and spinal plexus, Cervical root	
9531		Injury to nerve roots and spinal plexus, Dorsal root	
9532		Injury to nerve roots and spinal plexus, Lumbar root	
9535		Injury to nerve roots and spinal plexus, Lumbosacral plexus	
Long Bone Fracture	ICD-9 code	Definition	
Upper extremity	8120, 81200	Fracture of humerus, Upper end (closed)	
	81201, 81202	00 Upper end, unspecified part (proximal end, shoulder)	
	81203, 81209	01	Surgical neck (Neck of humerus NOS)
		02	Anatomical neck
		03	Greater tuberosity
		09	Other (Head, Upper epiphysis)
		8121, 81210	Fracture of humerus, Upper end (open)
	81211, 81212	10 Upper end, unspecified part	
	81213, 81219	11	Surgical neck
		12	Anatomical neck
		13	Greater tuberosity
		19	Other
	8122, 81220	Fracture of humerus, Shaft or unspecified part (closed)	
	81221	20	Unspecified part of humerus (Humerus NOS, Upper arm NOS)
		21	Shaft of humerus

<p>8123, 81230</p> <p>81231</p>	<p>Fracture of humerus, Shaft or unspecified part (open)</p> <p>30 Unspecified part of humerus</p> <p>31 Shaft of humerus</p>
<p>8124, 81240</p> <p>81241, 81242</p> <p>81243, 81244 81249</p>	<p>Fracture of humerus, Lower end (closed)</p> <p>Distal end of humerus, Elbow</p> <p>40 Lower end, unspecified part</p> <p>41 Supracondylar fracture of humerus</p> <p>42 Lateral condyle (External condyle)</p> <p>43 Medial condyle (Internal epicondyle)</p> <p>44 Condyle(s), unspecified (Articular process NOS, Lower epiphysis NOS)</p> <p>49 Other (Multiple fractures of lower end, Trochlea)</p>
<p>8125, 81250</p> <p>81251, 81252</p> <p>81253, 81254 81259</p>	<p>Fracture of humerus, Lower end (open)</p> <p>50 Lower end, unspecified part</p> <p>51 Supracondylar fracture of humerus</p> <p>52 Lateral condyle</p> <p>53 Medial condyle</p> <p>54 Condyle(s), unspecified</p> <p>59 Other</p>
<p>8130, 81300</p> <p>81301, 81302</p> <p>81303, 81304</p> <p>81305, 81306 81307, 81308</p>	<p>Fracture of radius and ulna, Upper end (closed) (proximal end)</p> <p>00 Upper end of forearm, unspecified</p> <p>01 Olecranon process of ulna</p> <p>02 Coronoid process of ulna</p> <p>03 Monteggia's fracture</p> <p>04 Other and unspecified fractures of proximal end of ulna (alone)(Multiple fractures of ulna, upper end)</p> <p>05 Head of radius</p> <p>06 Neck of radius</p> <p>07 Other and unspecified fractures of proximal end of radius (alone)(Multiple fractures of radius, upper end)</p> <p>08 Radius with ulna, upper end (any part)</p>
<p>8131, 81310</p> <p>81311, 81312</p> <p>81313, 81314</p> <p>81315, 81316 81317, 81318</p>	<p>Fracture of radius and ulna, Upper end (open)</p> <p>10 Upper end of forearm, unspecified</p> <p>11 Olecranon process of ulna</p> <p>12 Coronoid process of ulna</p> <p>13 Monteggia's fracture</p> <p>14 Other and unspecified fractures of proximal end of ulna (alone)</p> <p>15 Head of radius</p> <p>16 Neck of radius</p> <p>17 Other and unspecified fractures of proximal end of radius (alone)</p> <p>18 Radius with ulna, upper end (any part)</p>
<p>8132, 81320</p> <p>81321, 81322</p>	<p>Fracture of radius and ulna, Shaft (closed)</p> <p>20 Shaft, unspecified</p>

81323	21 Radius (alone) 22 Ulna (alone) 23 Radius with ulna
8133, 81330 81331, 81332 81333	Fracture of radius and ulna, Shaft (open) 30 Shaft, unspecified 31 Radius (alone) 32 Ulna (alone) 33 Radius with ulna
8134, 81340 81341, 81342 81343, 81344 81345	Fracture of radius and ulna, Lower end (closed) Distal end 40 Lower end of forearm, unspecified 41 Colles' fracture (Smith's fracture) 42 Other fractures of distal end of radius (alone) (Dupuytren's fracture, radius, Radius, lower end) 43 Distal end of ulna (alone) (Ulna: head, lower end, lower epiphysis, styloid process) 44 Radius with ulna, lower end 45 Torus fracture of radius
8135, 81350 81351, 81352 81353, 81354	Fracture of radius and ulna, Lower end (open) Distal end 50 Lower end of forearm, unspecified 51 Colles' fracture 52 Other fractures of distal end of radius (alone) 53 Distal end of ulna (alone) 54 Radius with ulna, lower end
8138, 81380 81381, 81382 81383	Fracture of radius and ulna, Unspecified part (closed) 80 Forearm, unspecified 81 Radius (alone) 82 Ulna (alone) 83 Radius with ulna
8139, 81390 81391, 81392 81393	Fracture of radius and ulna, Unspecified part (open) 90 Forearm, unspecified 91 Radius (alone) 92 Ulna (alone) 93 Radius with ulna
8140, 81400 81401, 81402 81403, 81404 81405, 81406 81407, 81408 81409	Fracture of carpal bone(s) (closed) 00 carpal bone, unspecified (Wrist NOS) 01 navicular (scaphoid) of wrist 02 lunate (semilunar) bone of wrist 03 triquetral (cuneiform) bone of wrist 04 pisiform 05 trapezium bone (larger multangular) 06 trapezoid bone (smaller multangular) 07 capitate bone (os magnum)

	<p>08 hamate (unciform) bone</p> <p>09 other</p>
<p>8141, 81410</p> <p>81411, 81412</p> <p>81413, 81414</p> <p>81415, 81416</p> <p>81417, 81418</p> <p>81419</p>	<p>Fracture of carpal bone(s) (open)</p> <p>00 carpal bone, unspecified (Wrist NOS)</p> <p>01 navicular (scaphoid) of wrist</p> <p>02 lunate (semilunar) bone of wrist</p> <p>03 triquetral (cuneiform) bone of wrist</p> <p>04 pisiform</p> <p>05 trapezium bone (larger multangular)</p> <p>06 trapezoid bone (smaller multangular)</p> <p>07 capitate bone (os magnum)</p> <p>08 hamate (unciform) bone</p> <p>09 other</p>
<p>8151, 81510</p> <p>81511, 81512</p> <p>81513, 81514</p> <p>81519</p>	<p>Fracture of metacarpal bone(s)(open)</p> <p>Includes: hand (except finger), metacarpus</p> <p>10 metacarpal bone(s), site unspecified</p> <p>11 base of thumb (first) metacarpal (Benbitt's fracture)</p> <p>12 base of other metacarpal bone(s)</p> <p>13 shaft of metacarpal bone(s)</p> <p>14 neck of metacarpal bone(s)</p> <p>19 multiple sites of metacarpus</p>
<p>8160, 81600</p> <p>81601, 81602</p> <p>81603</p>	<p>Fracture of one or more phalanges of hand (closed)</p> <p>Includes: finger(s), thumb</p> <p>00 phalanx or phalanges, unspecified</p> <p>01 middle or proximal phalanx or phalanges</p> <p>02 distal phalanx or phalanges</p> <p>03 multiple sites</p>
<p>8161, 81610</p> <p>81611, 81612</p> <p>81613</p>	<p>Fracture of one or more phalanges of hand (open)</p> <p>00 phalanx or phalanges, unspecified</p> <p>01 middle or proximal phalanx or phalanges</p> <p>02 distal phalanx or phalanges</p> <p>03 multiple sites</p>
<p>817</p>	<p>Multiple fractures of hand bones Includes: metacarpal bone(s) with phalanx or phalanges of same hand</p> <p>0 Closed</p> <p>1 Open</p>
<p>818</p>	<p>III-defined fractures of upper limb</p> <p>Includes: arm NOS, multiple bones of same upper limb</p> <p><i>Excludes:</i> multiple fractures of: metacarpal bone(s) with phalanx or phalanges (8170-8171), phalanges of hand alone (8160-8161), radius with ulna (8130-8139)</p> <p>0 Closed</p> <p>1 Open</p>
<p>819</p>	<p>Multiple fractures involving both upper limbs, and upper limb with rib(s) and sternum Includes: arm(s) with rib(s) or sternum, both arms (any bones)</p> <p>0 Closed</p>

		1 Open
Lower Extremity	8200, 82000	Fracture of neck of femur, Transcervical fracture (closed)
	82001, 82002	00 Intracapsular section, unspecified
	82003, 82009	01 Epiphysis (separation) (upper) Transepiphyseal
		02 Midcervical section (Transcervical NOS)
		03 Base of neck (Cervicotrochanteric section)
		09 Other (head of femur, subcapital)
	8201, 82010	Fracture of neck of femur, Transcervical fracture (open)
	82011, 82012	10 Intracapsular section, unspecified
	82013, 82019	11 Epiphysis (separation) (upper) 12 Midcervical section
		13 Base of neck
		19 Other
	8202, 82020 82021, 82022	Fracture of neck of femur, Petrochanteric fracture (closed)
		20 Trochanteric section, unspecified (Trochanter: NOS, greater, lesser) 21 Intertrochanteric section 22 Subtrochanteric section
8203, 82030	Fracture of neck of femur, Petrochanteric fracture (open)	
82031, 82032	30 Trochanteric section, unspecified 31 Intertrochanteric section 32 Subtrochanteric section	
8208	Unspecified part of neck of femur (closed) Hip NOS, Neck of femur NOS	
8209	Unspecified part of neck of femur (open)	
8210, 82100	Fracture of other and unspecified parts of femur, Shaft or unspecified part (closed)	
82101	00 Unspecified part of femur (Thigh, upper leg <i>Excludes:</i> hip NOS (8208)) 01 Shaft	
8211, 82110	Fracture of other and unspecified parts of femur, Shaft or unspecified part (open)	
82111	00 Unspecified part of femur 01 Shaft	
8212, 82120	Fracture of other and unspecified parts of femur, Lower end (closed)	
82121, 82122	Distal end	
82123, 82129	20 Lower end, unspecified part 21 Condyle, femoral 22 Epiphysis, lower (separation) 23 Supracondylar fracture of femur 29 Other (Multiple fractures of lower end)	
8213, 82130	Fracture of other and unspecified parts of femur, Lower end (open)	
82131, 82132	30 Lower end, unspecified part	
82133, 82139	31 Condyle, femoral	

	<p>32 Epiphysis, lower (separation)</p> <p>33 Supracondylar fracture of femur</p> <p>39 Other</p>
822, 8220, 8221	<p>Fracture of patella</p> <p>0 closed</p> <p>1 open</p>
823	<p>Fracture of tibia and fibula</p> <p><i>Excludes:</i> Dupuytren's fracture (8244-8245), ankle (8244-8245), radius (81342, 81352), Pott's fracture (8244-8245) that involving ankle (8240-8249)</p>
8230, 82300 82301, 82302	<p>Fracture of tibia and fibula, Upper end (closed)</p> <p>Head, proximal end, Tibia: condyles, tuberosity</p> <p>00 tibia alone</p> <p>01 fibula alone</p> <p>02 fibula with tibia</p>
8231, 82310 82311, 82312	<p>Fracture of tibia and fibula, Upper end (open)</p> <p>00 tibia alone</p> <p>01 fibula alone</p> <p>02 fibula with tibia</p>
8232, 82320 82321, 82322	<p>Fracture of tibia and fibula, Shaft (closed)</p> <p>00 tibia alone</p> <p>01 fibula alone</p> <p>02 fibula with tibia</p>
8233, 82330 82331, 82332	<p>Fracture of tibia and fibula, Shaft (open)</p> <p>00 tibia alone</p> <p>01 fibula alone</p> <p>02 fibula with tibia</p>
8234, 82340 82341, 82342	<p>Fracture of tibia and fibula, Torus fracture</p> <p>00 tibia alone</p> <p>01 fibula alone</p> <p>02 fibula with tibia</p>
8238, 82380 82381, 82382	<p>Unspecified part (closed)</p> <p>Lower leg NOS</p> <p>00 tibia alone</p> <p>01 fibula alone</p> <p>02 fibula with tibia</p>
8239, 82390 82391, 82392	<p>Unspecified part (open)</p> <p>00 tibia alone</p> <p>01 fibula alone</p> <p>02 fibula with tibia</p>
8240, 8241	<p>Fracture of ankle, Medial malleolus</p> <p>0 (closed)</p> <p>Tibia involving: ankle, malleolus</p>

	1 (open)
8242, 8243	Fracture of ankle, Lateral malleolus 2 (closed) Fibula involving: ankle, malleolus 3 (open)
8244, 8245	Fracture of ankle, Bimalleolar 4 (closed) Dupuytren's fracture, fibula, Pott's fracture 5 (open)
8246, 8247	Fracture of ankle, Trimalleolar 6 (closed) Lateral and medial malleolus with anterior or posterior lip of tibia 7 (open)
8248, 8249	Fracture of ankle, Unspecified 8 (closed) Ankle NOS 9 (open)
825	Fracture of one or more tarsal and metatarsal bones
8252, 82520 82521, 82522 82523, 82524 82525, 82529	Fracture of other tarsal and metatarsal bones (closed) 20 Unspecified bone(s) of foot (except toes) Instep 21 Astragalus Talus 22 Navicular (scaphoid), foot 23 Cuboid 24 Cuneiform, foot 25 Metatarsal bone(s) 29 Other Tarsal with metatarsal bone(s) only <i>Excludes:</i> calcaneus (8250)
8253, 82530 82531, 82532 82533, 82534 82535, 82539	Fracture of other tarsal and metatarsal bones (open) 30 Unspecified bone(s) of foot (except toes) Instep 31 Astragalus 32 Navicular (scaphoid), foot 33 Cuboid 34 Cuneiform, foot 35 Metatarsal bone(s) 39 Other
826, 8260, 8261	Fracture of one or more phalanges of foot Includes: toe(s) 0 closed

		1 open
827, 8270, 8271		<p>Other, multiple, and ill-defined fractures of lower limb Includes: leg NOS, multiple bones of same lower limb</p> <p><i>Excludes:</i> multiple fractures of: ankle bones alone (8244-8249), phalanges of foot alone (8260-8261), tarsal with metatarsal bones (82529-82539), tibia with fibula (8230-8239 with fifth digit 2)</p> <p>0 closed</p> <p>1 open</p>
828, 8280, 8281		<p>Multiple fractures involving both lower limbs, lower with upper limb, and lower limb(s) with rib(s) and sternum Includes: arm(s) with leg(s) (any bones), both legs (any bones), leg(s) with rib(s) or sternum</p> <p>0 closed</p> <p>1 open</p>
Thoracic Trauma	ICD-9 code	Definition
Unspecified		
862, 8620 8621		<p>Injury to other and unspecified intrathoracic organs</p> <p><i>Excludes:</i> injury to blood vessels of thorax (9010-9019)</p> <p>0 Injury to Diaphragm, without mention of open wound into cavity</p> <p>01 Diaphragm, with open wound into cavity</p>
8622, 86221, 86222		<p>Other specified intrathoracic organs, without mention of open wound into cavity</p> <p>21 Bronchus</p> <p>22 Esophagus</p>
86229		Other Pleura, Thymus gland
8623, 86231 86232, 86239		<p>Other specified intrathoracic organs, with open wound into cavity</p> <p>31 Bronchus</p> <p>32 Esophagus</p> <p>39 Other</p>
8628		Multiple and unspecified intrathoracic organs, without mention of open wound into cavity Crushed chest, multiple intrathoracic organs
8629		Multiple and unspecified intrathoracic organs, with open wound into cavity
86100		<p>Injury to Heart, without mention of open wound into thorax</p> <p>00 Unspecified injury</p>
86110		<p>Injury to Heart, with open wound into thorax</p> <p>10 Unspecified injury</p>
86120		<p>Injury to Lungs, without mention of open wound into thorax</p> <p>20 Unspecified injury</p>
86130		<p>Injury to Lungs, with open wound into thorax</p> <p>30 Unspecified injury</p>
Fractures/Sprains	807	Fracture of rib(s), sternum, larynx, and trachea
8070, 80700 80701, 80702		Rib(s) closed
80703, 80704		00 rib(s), unspecified
80705, 80706		01 one rib
80707, 80708		02 two ribs
80709		03 three ribs
		04 four ribs
		05 five ribs
		06 six ribs

	07 seven ribs 08 eight or more ribs 09 multiple ribs, unspecified
8071, 80710 80711, 80712 80713, 80714 80715, 80716 80717, 80718 80719	Rib(s) open 10 rib(s), unspecified 11 one rib 12 two ribs 13 three ribs 14 four ribs 15 five ribs 16 six ribs 17 seven ribs 18 eight or more ribs 19 multiple ribs, unspecified
819, 8190 8191	Multiple fractures involving both upper limbs, and upper limb with rib(s) and sternum Includes: arm(s) with rib(s) or sternum, both arms (any bones) 0 closed 1 open
828, 8280 8281	Multiple fractures involving both lower limbs, and lower limb with rib(s) and sternum Includes: arm(s) with leg(s) (any bones), both legs (any bones), leg(s) with rib(s) or sternum 0 closed 1 open
8483	Other and ill-defined sprains and strains, Ribs
8100, 81000 81001 81002, 81003	Fracture of clavicle, Closed Includes: collar bone, interligamentous part of clavicle 00 unspecified part (Clavicle NOS) 01 sternal end of clavicle 02 shaft of clavicle 03 acromial end of clavicle
8110, 81100 81101, 81102 81103, 81109	Fracture of scapula, Closed Includes: shoulder blade 00 unspecified part 01 acromial process (Acromion process) 02 coracoid process 03 glenoid cavity and neck of scapula 09 other (Scapula body)
8111, 81110 81111, 81112 81113, 81119	Fracture of scapula, Open Includes: shoulder blade 00 unspecified part 01 acromial process (Acromion process) 02 coracoid process 03 glenoid cavity and neck of scapula 09 other (Scapula body)

Hemo/pneumothorax	860, 8600 8601, 8602 8603, 8604 8605	Traumatic pneumothorax and hemothorax 0 Pneumothorax without mention of open wound into thorax 1 Pneumothorax with open wound into thorax 2 Hemothorax without mention of open wound into thorax 3 Hemothorax with open wound into thorax 4 Pneumohemothorax without mention of open wound into thorax 5 Pneumohemothorax with open wound into thorax
Organ injury	861	Injury to heart and lung <i>Excludes:</i> injury to blood vessels of thorax (9010-9019)
	8610, 86101, 86102 86103	Injury to Heart, without mention of open wound into thorax 01 Contusion (Cardiac contusion, Myocardial contusion) 02 Laceration without penetration of heart chambers 03 Laceration with penetration of heart chambers
	8611, 86111, 86112 86113	Injury to Heart, with open wound into thorax 11 Contusion 12 Laceration without penetration of heart chambers 13 Laceration with penetration of heart chambers
	8612, 86121, 86122	Injury to Lungs, without mention of open wound into thorax 21 Contusion 22 Laceration
	8613, 86131, 86132	Injury to Lungs, with open wound into thorax 31 Contusion 32 Laceration
Vascular injury	901, 9010 9011, 9012 9013	Injury to blood vessels of thorax <i>Excludes:</i> traumatic hemothorax (8602-8605) 0 Thoracic aorta 1 Innominate and subclavian arteries 2 Superior vena cava 3 Innominate and subclavian veins
	9014, 90140 90141, 90142	Injury to Pulmonary blood vessels 40 Pulmonary vessel(s), unspecified 41 Pulmonary artery 42 Pulmonary vein
	9018, 90181 90182, 90183 90189	Injury to other specified blood vessels of thorax 81 Intercostal artery or vein 82 Internal mammary artery or vein 83 Multiple blood vessels of thorax 89 Other (Azygos vein, hemiazygos vein)
	9019	Injury to unspecified blood vessels of thorax
	90301	Injury to blood vessels of upper extremity, Axillary artery
	90302	Injury to blood vessels of upper extremity, Axillary vein

	44101	Aortic aneurysm and dissection, Thoracic
Abdominopelvic Trauma	ICD-9 code	Definition
Unspecified	869	Internal Injury to Unspecified or ill-defined organs Includes: internal injury NOS, multiple internal injury NOS
	9029	Injury to blood vessels of abdomen and pelvis, Unspecified blood vessel of abdomen and pelvis
	867, 8678, 8679	Injury to pelvic organs 8 Unspecified pelvic organs, without mention of open wound into cavity 9 Unspecified pelvic organ, with open wound into cavity
	868, 86800, 86810	Injury to other intra-abdominal organs 00 without mention of open wound into cavity, unspecified intra-abdominal organ 01 with open wound into cavity, unspecified intra-abdominal organ
	86382 86383, 86384	Injury to other and unspecified gastrointestinal sites, without mention of open wound into cavity 82 Pancreas, body 83 Pancreas, tail 84 Pancreas, multiple and unspecified sites
Solid organ injury	86392 86393, 86394	Injury to other and unspecified gastrointestinal sites, with open wound into cavity 82 Pancreas, body 83 Pancreas, tail 84 Pancreas, multiple and unspecified sites
	8640, 86400, 86401, 86402, 86403, 86404, 86405, 86409	Injury to liver without mention of open wound into cavity 00 unspecified injury 01 hematoma and contusion 02 laceration, minor (Laceration involving capsule only, or without significant involvement of hepatic parenchyma, ie, less than 1 cm deep) 03 laceration, moderate (Laceration involving parenchyma but without major disruption of parenchyma, ie, less than 10 cm long and less than 3 cm deep) 04 laceration, major (Laceration with significant disruption of hepatic parenchyma, ie, 10 cm long and 3 cm deep), multiple moderate lacerations, with or without hematoma, Stellate lacerations of liver 05 laceration, unspecified 09 other
	8641, 86410, 86411, 86412, 86413, 86414, 86415, 86419	Injury to liver with open wound into cavity 00 unspecified injury 01 hematoma and contusion 02 laceration, minor (Laceration involving capsule only, or without significant involvement of hepatic parenchyma, ie, less than 1 cm deep) 03 laceration, moderate (Laceration involving parenchyma but without major disruption of parenchyma, ie, less than 10 cm long and less than 3 cm deep) 04 laceration, major (Laceration with significant disruption of hepatic parenchyma, ie, 10 cm long and 3 cm deep), multiple moderate lacerations, with or without hematoma, Stellate lacerations of liver 05 laceration, unspecified 09 other
	8650, 86500 86501, 86502 86503, 86504 86509	Injury to spleen without mention of open wound into cavity 00 unspecified injury 01 hematoma without rupture of capsule 02 capsular tears, without major disruption of parenchyma 03 laceration extending into parenchyma

		<p>04 massive parenchymal disruption</p> <p>09 other</p>
	<p>8651, 86510 86511, 86512 86513, 86514 86519</p>	<p>Injury to spleen with open wound into cavity</p> <p>00 unspecified injury</p> <p>01 hematoma without rupture of capsule</p> <p>02 capsular tears, without major disruption of parenchyma</p> <p>03 laceration extending into parenchyma</p> <p>04 massive parenchymal disruption</p> <p>09 other</p>
	<p>8660, 86600 86601, 86602 86603</p>	<p>Injury to kidney without mention of open wound into cavity</p> <p>00 unspecified injury</p> <p>01 hematoma without rupture of capsule</p> <p>02 laceration</p> <p>03 complete disruption of kidney parenchyma</p>
	<p>8661, 86610 86611, 86612 86613</p>	<p>Injury to kidney with open wound into cavity</p> <p>00 unspecified injury</p> <p>01 hematoma without rupture of capsule</p> <p>02 laceration</p> <p>03 complete disruption of kidney parenchyma</p>
	<p>867, 8670, 8671 8672, 8673 8674, 8675</p>	<p>Injury to pelvic organs</p> <p><i>Excludes:</i> injury during delivery (6640-6659)</p> <p>0 Bladder and urethra, without mention of open wound into cavity</p> <p>1 Bladder and urethra, with open wound into cavity</p> <p>2 Ureter, without mention of open wound into cavity</p> <p>3 Ureter, with open wound into cavity</p> <p>4 Uterus, without mention of open wound into cavity</p> <p>5 Uterus, with open wound into cavity</p>
	86801	Injury to other intra-abdominal organs without mention of open wound into cavity, Adrenal gland
	86811	Injury to other intra-abdominal organs with open wound into cavity, Adrenal gland
Hollow organ injury	<p>863, 8630 8631</p>	<p>Injury to gastrointestinal tract</p> <p><i>Excludes:</i> anal sphincter laceration during delivery (6642), bile duct (8680-8681 with fifth digit 2), gallbladder (8680-8681 with fifth digit 2)</p> <p>0 Stomach, without mention of open wound into cavity</p> <p>1 Stomach, with open wound into cavity</p>
	<p>8632, 86320 86321, 86329</p>	<p>Injury to small intestine, without mention of open wound into cavity</p> <p>20 Small intestine, unspecified site</p> <p>21 Duodenum</p> <p>29 Other</p>
	<p>8633, 86330 86331, 86339</p>	<p>Injury to small intestine, with open wound into cavity</p> <p>30 Small intestine, unspecified site</p> <p>31 Duodenum</p> <p>39 Other</p>

	8634, 86340 86341, 86342 86343, 86344 86345, 86346 86349	Injury to colon or rectum, without mention of open wound into cavity 40 Colon, unspecified site 41 Ascending (right) colon 42 Transverse colon 43 Descending (left) colon 44 Sigmoid colon 45 Rectum 46 Multiple sites in colon and rectum 49 Other
	8635, 86350 86351, 86352 86353, 86354 86355, 86356 86359	Injury to colon or rectum, with open wound into cavity 50 Colon, unspecified site 51 Ascending (right) colon 52 Transverse colon 53 Descending (left) colon 54 Sigmoid colon 55 Rectum 56 Multiple sites in colon and rectum 59 Other
	8638, 86380 86381, 86385, 86389	Injury to other and unspecified gastrointestinal sites, without mention of open wound into cavity 80 Gastrointestinal tract, unspecified site 81 Pancreas, head 85 Appendix 89 Other (intestine NOS)
	8639, 86390 86391, 86395, 86399	Injury to other and unspecified gastrointestinal sites, with open wound into cavity 80 Gastrointestinal tract, unspecified site 81 Pancreas, head 85 Appendix 89 Other
	8786, 8787	Open wound of genital organs (external), including traumatic amputation, Vagina 6 without mention of complication 7 complicated
Vascular injury	902, 9020	Injury to blood vessels of abdomen and pelvis, Abdominal aorta
	9021, 90210 90211, 90219	Injury to blood vessels of abdomen and pelvis, Inferior vena cava 10 Inferior vena cava, unspecified 11 Hepatic veins 19 Other
	9022, 90220 90221, 90222 90223, 90224 90225, 90226 90227, 90229	Injury to blood vessels of abdomen and pelvis, Celiac and mesenteric arteries 20 Celiac and mesenteric arteries, unspecified 21 Gastric artery 22 Hepatic artery 23 Splenic artery 24 Other specified branches of celiac axis

		<p>25 Superior mesenteric artery (trunk)</p> <p>26 Primary branches of superior mesenteric artery (Ileo-colic artery)</p> <p>27 Inferior mesenteric artery</p> <p>29 Other</p>
	<p>9023, 90231, 90232, 90233</p> <p>90234, 90239</p>	<p>Injury to blood vessels of abdomen and pelvis, Portal and splenic veins</p> <p>31 Superior mesenteric vein and primary subdivisions (Ileo-colic vein)</p> <p>32 Inferior mesenteric vein</p> <p>33 Portal vein</p> <p>34 Splenic vein</p> <p>39 Other (Cystic vein, Gastric vein)</p>
	<p>9024, 90240</p> <p>90241, 90242</p> <p>90249</p>	<p>Injury to blood vessels of abdomen and pelvis, Renal blood vessels</p> <p>40 Renal vessel(s), unspecified</p> <p>41 Renal artery</p> <p>42 Renal vein</p> <p>49 Other (Suprarenal arteries)</p>
	<p>9025, 90250</p> <p>90251, 90252</p> <p>90253, 90254</p> <p>90255, 90256</p> <p>90259</p>	<p>Injury to blood vessels of abdomen and pelvis, Iliac blood vessels</p> <p>50 Iliac vessel(s), unspecified</p> <p>51 Hypogastric artery</p> <p>52 Hypogastric vein</p> <p>53 Iliac artery</p> <p>54 Iliac vein</p> <p>55 Uterine artery</p> <p>56 Uterine vein</p> <p>59 Other</p>
	<p>9028, 90281, 90282, 90287, 90289</p>	<p>Other specified blood vessels of abdomen and pelvis</p>
Pelvic Fracture	<p>808, 8080, 8081</p>	<p>Fracture of pelvis, Acetabulum</p> <p>0 Closed</p> <p>1 Open</p>
	<p>8082, 8083</p>	<p>Fracture of pelvis, Pubis</p> <p>2 Closed</p> <p>3 Open</p>
	<p>8084, 80841</p> <p>80842, 80843</p> <p>80849</p>	<p>Fracture of pelvis, Other specified part, closed</p> <p>41 Ilium</p> <p>42 Ischium</p> <p>43 Multiple pelvic fractures with disruption of pelvic circle</p> <p>49 Other (Innominate bone, Pelvic rim)</p>
	<p>8085, 80851, 80852, 80853, 80859</p>	<p>Fracture of pelvis, Other specified part, open</p> <p>51 Ilium</p> <p>52 Ischium</p> <p>53 Multiple pelvic fractures with disruption of pelvic circle</p> <p>59 Other</p>

	8088, 8089	Fracture of pelvis, Unspecified 8 Closed 9 Open
	808, 8088, 8089	Fracture of pelvis, 8 Unspecified closed 9 Unspecified open
Additional Trauma Codes	ICD-9 Code	Definition
Concussion	8500 85011 85012 8502 8503 8504 8505 8509	CONCUSSION WITH NO LOSS OF CONSCIOUSNESS CONCUSSION WITH LOSS OF CONSCIOUSNESS OF 30 MINUTES OR LESS CONCUSSION WITH LOSS OF CONSCIOUSNESS FROM 31 TO 59 MINUTES CONCUSSION WITH MODERATE LOSS OF CONSCIOUSNESS CONCUSSION WITH PROLONGED LOSS OF CONSCIOUSNESS AND RETURN TO PRE-EXISTING CONSCIOUS LEVEL CONCUSSION WITH PROLONGED LOSS OF CONSCIOUSNESS WITHOUT RETURN TO PRE-EXISTING CONSCIOUS LEVEL CONCUSSION WITH LOSS OF CONSCIOUSNESS OF UNSPECIFIED DURATION CONCUSSION UNSPECIFIED
Eye Injury	9501 9502 9503 9300 9301 9302 9308 9309	INJURY TO OPTIC CHIASM INJURY TO OPTIC PATHWAYS INJURY TO VISUAL CORTEX CORNEAL FOREIGN BODY FOREIGN BODY IN CONJUNCTIVAL SAC FOREIGN BODY IN LACRIMAL PUNCTUM FOREIGN BODY IN OTHER AND COMBINED SITES ON EXTERNAL EYE FOREIGN BODY IN UNSPECIFIED SITE ON EXTERNAL EYE
Head & Neck Injury	830 8301 8700 8701 8702 8703 8704 8708 8709 8710 8711 8712 8713 8714 8715 8716 8717 8719 87200	CLOSED DISLOCATION OF JAW OPEN DISLOCATION OF JAW LACERATION OF SKIN OF EYELID AND PERIOCCULAR AREA LACERATION OF EYELID FULL-THICKNESS NOT INVOLVING LACRIMAL PASSAGES LACERATION OF EYELID INVOLVING LACRIMAL PASSAGES PENETRATING WOUND OF ORBIT WITHOUT FOREIGN BODY PENETRATING WOUND OF ORBIT WITH FOREIGN BODY OTHER SPECIFIED OPEN WOUNDS OF OCULAR ADNEXA UNSPECIFIED OPEN WOUND OF OCULAR ADNEXA OCULAR LACERATION WITHOUT PROLAPSE OF INTRAOCULAR TISSUE OCULAR LACERATION WITH PROLAPSE OR EXPOSURE OF INTRAOCULAR TISSUE RUPTURE OF EYE WITH PARTIAL LOSS OF INTRAOCULAR TISSUE AVULSION OF EYE UNSPECIFIED LACERATION OF EYE PENETRATION OF EYEBALL WITH MAGNETIC FOREIGN BODY PENETRATION OF EYEBALL WITH (NONMAGNETIC) FOREIGN BODY UNSPECIFIED OCULAR PENETRATION UNSPECIFIED OPEN WOUND OF EYEBALL OPEN WOUND OF EXTERNAL EAR UNSPECIFIED SITE UNCOMPLICATED

87201	OPEN WOUND OF AURICLE UNCOMPLICATED
87202	OPEN WOUND OF AUDITORY CANAL UNCOMPLICATED
87210	OPEN WOUND OF EXTERNAL EAR UNSPECIFIED SITE COMPLICATED
87211	OPEN WOUND OF AURICLE COMPLICATED
87212	OPEN WOUND OF AUDITORY CANAL COMPLICATED
87261	OPEN WOUND OF EAR DRUM UNCOMPLICATED
87262	OPEN WOUND OF OSSICLES UNCOMPLICATED
87263	OPEN WOUND OF EUSTACHIAN TUBE UNCOMPLICATED
87264	OPEN WOUND OF COCHLEA UNCOMPLICATED
87269	OPEN WOUND OF OTHER AND MULTIPLE SITES UNCOMPLICATED
87271	OPEN WOUND OF EAR DRUM COMPLICATED
87272	OPEN WOUND OF OSSICLES COMPLICATED
87273	OPEN WOUND OF EUSTACHIAN TUBE COMPLICATED
87274	OPEN WOUND OF COCHLEA COMPLICATED
87279	OPEN WOUND OF OTHER AND MULTIPLE SITES COMPLICATED
8728	OPEN WOUND OF EAR PART UNSPECIFIED WITHOUT COMPLICATION
8729	OPEN WOUND OF EAR PART UNSPECIFIED COMPLICATED
87400	OPEN WOUND OF LARYNX WITH TRACHEA UNCOMPLICATED
87401	OPEN WOUND OF LARYNX UNCOMPLICATED
87402	OPEN WOUND OF TRACHEA UNCOMPLICATED
87410	OPEN WOUND OF LARYNX WITH TRACHEA COMPLICATED
87411	OPEN WOUND OF LARYNX COMPLICATED
87412	OPEN WOUND OF TRACHEA COMPLICATED
8742	OPEN WOUND OF THYROID GLAND WITHOUT COMPLICATION
8743	OPEN WOUND OF THYROID GLAND COMPLICATED
8744	OPEN WOUND OF PHARYNX WITHOUT COMPLICATION
8745	OPEN WOUND OF PHARYNX COMPLICATED
8748	OPEN WOUND OF OTHER AND UNSPECIFIED PARTS OF NECK WITHOUT COMPLICATION
8749	OPEN WOUND OF OTHER AND UNSPECIFIED PARTS OF NECK COMPLICATED
90082	INJURY TO MULTIPLE BLOOD VESSELS OF HEAD AND NECK
90089	INJURY TO OTHER SPECIFIED BLOOD VESSELS OF HEAD AND NECK
9009	INJURY TO UNSPECIFIED BLOOD VESSEL OF HEAD AND NECK
9180	SUPERFICIAL INJURY OF EYELIDS AND PERIOcular AREA
9181	SUPERFICIAL INJURY OF CORNEA
9182	SUPERFICIAL INJURY OF CONJUNCTIVA
9189	OTHER AND UNSPECIFIED SUPERFICIAL INJURIES OF EYE
920	CONTUSION OF FACE SCALP AND NECK EXCEPT EYE(S)
9210	BLACK EYE NOT OTHERWISE SPECIFIED
9211	CONTUSION OF EYELIDS AND PERIOcular AREA
9212	CONTUSION OF ORBITAL TISSUES
9213	CONTUSION OF EYEBALL
9219	UNSPECIFIED CONTUSION OF EYE
9251	CRUSHING INJURY OF FACE AND SCALP

9252	CRUSHING INJURY OF NECK
9400	CHEMICAL BURN OF EYELIDS AND PERIOCLAR AREA
9401	OTHER BURNS OF EYELIDS AND PERIOCLAR AREA
9402	ALKALINE CHEMICAL BURN OF CORNEA AND CONJUNCTIVAL SAC
9403	ACID CHEMICAL BURN OF CORNEA AND CONJUNCTIVAL SAC
9404	OTHER BURN OF CORNEA AND CONJUNCTIVAL SAC
9405	BURN WITH RESULTING RUPTURE AND DESTRUCTION OF EYEBALL
9409	UNSPECIFIED BURN OF EYE AND ADNEXA
94100	BURN OF UNSPECIFIED DEGREE OF UNSPECIFIED SITE OF FACE AND HEAD
94101	BURN OF UNSPECIFIED DEGREE OF EAR (ANY PART)
94102	BURN OF UNSPECIFIED DEGREE OF EYE (WITH OTHER PARTS OF FACE HEAD AND NECK)
94103	BURN OF UNSPECIFIED DEGREE OF LIP(S)
94104	BURN OF UNSPECIFIED DEGREE OF CHIN
94105	BURN OF UNSPECIFIED DEGREE OF NOSE (SEPTUM)
94106	BURN OF UNSPECIFIED DEGREE OF SCALP (ANY PART)
94107	BURN OF UNSPECIFIED DEGREE OF FOREHEAD AND CHEEK
94108	BURN OF UNSPECIFIED DEGREE OF NECK
94109	BURN OF UNSPECIFIED DEGREE OF MULTIPLE SITES (EXCEPT WITH EYE) OF FACE HEAD AND NECK
94110	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF UNSPECIFIED SITE OF FACE AND HEAD
94111	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF EAR (ANY PART)
94112	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF EYE (WITH OTHER PARTS FACE HEAD AND NECK)
94113	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF LIP(S)
94114	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF CHIN
94115	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF NOSE (SEPTUM)
94116	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF SCALP (ANY PART)
94117	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF FOREHEAD AND CHEEK
94118	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF NECK
94119	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF MULTIPLE SITES (EXCEPT WITH EYE) OF FACE HEAD AND NECK
94120	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF FACE AND HEAD UNSPECIFIED SITE
94121	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF EAR (ANY PART)
94122	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF EYE (WITH FACE HEAD AND NECK)
94123	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF LIP(S)
94124	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF CHIN
94125	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF NOSE (SEPTUM)
94126	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF SCALP (ANY PART)
94127	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF FOREHEAD AND CHEEK
94128	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF NECK
94129	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF MULTIPLE SITES OF FACE HEAD AND NECK
94130	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF UNSPECIFIED SITE OF FACE AND HEAD
94131	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF EAR (ANY PART)
94132	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF EYE (WITH FACE HEAD AND NECK)
94133	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF LIP(S)
94134	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF CHIN

94135	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF NOSE (SEPTUM)
94136	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF SCALP (ANY PART)
94137	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF FOREHEAD AND CHEEK
94138	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF NECK FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF MULTIPLE SITES OF FACE HEAD AND
94139	NECK
94140	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF UNSPECIFIED FACE AND HEAD
94141	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF EAR (ANY PART)
94142	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF EYE
94143	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF LIP(S)
94144	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF CHIN
94145	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF NOSE (SEPTUM)
94146	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF SCALP (ANY PART)
94147	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF FOREHEAD AND CHEEK
94148	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF NECK DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF MULTIPLE SITES FACE
94149	HEAD AND NECK
94150	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF FACE AND HEAD UNSPECIFIED
94151	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF EAR (ANY PART)
94152	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF EYE
94153	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF LIP(S)
94154	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF CHIN WITH LOSS OF CHIN
94155	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF NOSE WITH LOSS OF NOSE
94156	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF SCALP WITH LOSS OF SCALP
94157	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF FOREHEAD AND CHEEK WITH LOSS
94158	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF NECK WITH LOSS DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF MULTIPLE SITES OF
94159	FACE HEAD AND NECK
9510	INJURY TO OCULOMOTOR NERVE
9511	INJURY TO TROCHLEAR NERVE
9512	INJURY TO TRIGEMINAL NERVE
9513	INJURY TO ABDUCENS NERVE
9514	INJURY TO FACIAL NERVE
9515	INJURY TO ACOUSTIC NERVE
9516	INJURY TO ACCESSORY NERVE
9517	INJURY TO HYPOGLOSSAL NERVE
9518	INJURY TO OTHER SPECIFIED CRANIAL NERVES
9519	INJURY TO UNSPECIFIED CRANIAL NERVE
8480	SPRAIN OF SEPTAL CARTILAGE OF NOSE
8482	THYROID REGION SPRAIN
9100	ABRASION OR FRICTION BURN OF FACE NECK AND SCALP EXCEPT EYE WITHOUT INFECTION
9101	ABRASION OR FRICTION BURN OF FACE NECK AND SCALP EXCEPT EYE INFECTED
9102	BLISTER OF FACE NECK AND SCALP EXCEPT EYE WITHOUT INFECTION
9103	BLISTER OF FACE NECK AND SCALP EXCEPT EYE INFECTED
9106	SUPERFICIAL FOREIGN BODY (SPLINTER) OF FACE NECK AND SCALP EXCEPT EYE
9107	SUPERFICIAL FOREIGN BODY (SPLINTER) OF FACE NECK AND SCALP EXCEPT EYE

	9108	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF FACE NECK AND SCALP
	9109	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF FACE NECK AND SCALP INFECTED
	9470	BURN OF MOUTH AND PHARYNX
	9500	OPTIC NERVE INJURY
	931	FOREIGN BODY IN EAR
	932	FOREIGN BODY IN NOSE
	9330	FOREIGN BODY IN PHARYNX
	9331	FOREIGN BODY IN LARYNX
	9509	INJURY TO UNSPECIFIED OPTIC NERVE AND PATHWAYS
Spinal Injury	9540	INJURY TO CERVICAL SYMPATHETIC NERVE EXCLUDING SHOULDER AND PELVIC GIRDLES
	9570	INJURY TO SUPERFICIAL NERVES OF HEAD AND NECK
	95901	OTHER AND UNSPECIFIED INJURY TO HEAD
	95909	OTHER AND UNSPECIFIED INJURY TO FACE AND NECK
	8052	CLOSED FRACTURE OF DORSAL (THORACIC) VERTEBRA WITHOUT SPINAL CORD INJURY
	8053	OPEN FRACTURE OF DORSAL (THORACIC) VERTEBRA WITHOUT SPINAL CORD INJURY
	8054	CLOSED FRACTURE OF LUMBAR VERTEBRA WITHOUT SPINAL CORD INJURY
	8055	OPEN FRACTURE OF LUMBAR VERTEBRA WITHOUT SPINAL CORD INJURY
	8056	CLOSED FRACTURE OF SACRUM AND COCCYX WITHOUT SPINAL CORD INJURY
	8057	OPEN FRACTURE OF SACRUM AND COCCYX WITHOUT SPINAL CORD INJURY
	8470	NECK SPRAIN
	8473	SPRAIN OF SACRUM
	8474	SPRAIN OF COCCYX
	8090	FRACTURE OF BONES OF TRUNK CLOSED
	8091	FRACTURE OF BONES OF TRUNK OPEN
	9538	INJURY TO MULTIPLE SITES OF NERVE ROOTS AND SPINAL PLEXUS
	9539	INJURY TO UNSPECIFIED SITE OF NERVE ROOTS AND SPINAL PLEXUS
Heart, Lung & Chest Injury	86101	CONTUSION OF HEART WITHOUT OPEN WOUND INTO THORAX
	86102	LACERATION OF HEART WITHOUT PENETRATION OF HEART CHAMBERS OR OPEN WOUND INTO THORAX
	86103	LACERATION OF HEART WITH PENETRATION OF HEART CHAMBERS WITHOUT OPEN WOUND INTO THORAX
	86111	CONTUSION OF HEART WITH OPEN WOUND INTO THORAX
	86112	LACERATION OF HEART WITHOUT PENETRATION OF HEART CHAMBERS WITH OPEN WOUND INTO THORAX
	86113	LACERATION OF HEART WITH PENETRATION OF HEART CHAMBERS AND OPEN WOUND INTO THORAX
	86121	CONTUSION OF LUNG WITHOUT OPEN WOUND INTO THORAX
	86122	LACERATION OF LUNG WITHOUT OPEN WOUND INTO THORAX
	86131	CONTUSION OF LUNG WITH OPEN WOUND INTO THORAX
	86132	LACERATION OF LUNG WITH OPEN WOUND INTO THORAX
	8072	CLOSED FRACTURE OF STERNUM
	8073	OPEN FRACTURE OF STERNUM
	8074	FLAIL CHEST
	8479	SPRAIN OF UNSPECIFIED SITE OF BACK
	84840	STERNUM SPRAIN UNSPECIFIED PART
	84841	STERNOCLAVICULAR (JOINT) (LIGAMENT) SPRAIN

	84842	CHONDROSTERNAL (JOINT) SPRAIN
	84849	OTHER SPRAIN OF STERNUM
	8790	OPEN WOUND OF BREAST WITHOUT COMPLICATION
	8791	OPEN WOUND OF BREAST COMPLICATED
	8796	OPEN WOUND OF OTHER AND UNSPECIFIED PARTS OF TRUNK WITHOUT COMPLICATION
	8797	OPEN WOUND OF OTHER AND UNSPECIFIED PARTS OF TRUNK COMPLICATED
	9110	ABRASION OR FRICTION BURN OF TRUNK WITHOUT INFECTION
	9111	ABRASION OR FRICTION BURN OF TRUNK INFECTED
	9112	BLISTER OF TRUNK WITHOUT INFECTION
	9113	BLISTER OF TRUNK INFECTED
	9116	SUPERFICIAL FOREIGN BODY (SPLINTER) OF TRUNK WITHOUT MAJOR OPEN WOUND AND WITHOUT INFECTION
	9117	SUPERFICIAL FOREIGN BODY (SPLINTER) OF TRUNK WITHOUT MAJOR OPEN WOUND INFECTED
	9118	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF TRUNK WITHOUT INFECTION
	9119	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF TRUNK INFECTED
	9220	CONTUSION OF BREAST
	9221	CONTUSION OF CHEST WALL
	9541	INJURY TO OTHER SYMPATHETIC NERVE EXCLUDING SHOULDER AND PELVIC GIRDLES
	9548	INJURY TO OTHER SPECIFIED NERVE(S) OF TRUNK EXCLUDING SHOULDER AND PELVIC GIRDLES
	9549	INJURY TO UNSPECIFIED NERVE OF TRUNK EXCLUDING SHOULDER AND PELVIC GIRDLES
	83961	CLOSED DISLOCATION STERNUM
	83971	OPEN DISLOCATION STERNUM
	92231	CONTUSION OF BACK
	92233	CONTUSION OF INTERSCAPULAR REGION
	92611	CRUSHING INJURY OF BACK
	92619	CRUSHING INJURY OF OTHER SPECIFIED SITES OF TRUNK
Pancreatic Injury	86382	INJURY TO PANCREAS BODY WITHOUT OPEN WOUND INTO CAVITY
	86383	INJURY TO PANCREAS TAIL WITHOUT OPEN WOUND INTO CAVITY
	86384	INJURY TO PANCREAS MULTIPLE AND UNSPECIFIED SITES WITHOUT OPEN WOUND INTO CAVITY
	86392	INJURY TO PANCREAS BODY WITH OPEN WOUND INTO CAVITY
	86393	INJURY TO PANCREAS TAIL WITH OPEN WOUND INTO CAVITY
	86394	INJURY TO PANCREAS MULTIPLE AND UNSPECIFIED SITES WITH OPEN WOUND INTO CAVITY
Abdominal Injury	86802	INJURY TO BILE DUCT AND GALLBLADDER WITHOUT OPEN WOUND INTO CAVITY
	86803	INJURY TO PERITONEUM WITHOUT OPEN WOUND INTO CAVITY
	86804	INJURY TO RETROPERITONEUM WITHOUT OPEN WOUND INTO CAVITY
	86809	INJURY TO OTHER AND MULTIPLE INTRA-ABDOMINAL ORGANS WITHOUT OPEN WOUND INTO CAVITY
	86812	INJURY TO BILE DUCT AND GALLBLADDER WITH OPEN WOUND INTO CAVITY
	86813	INJURY TO PERITONEUM WITH OPEN WOUND INTO CAVITY
	86814	INJURY TO RETROPERITONEUM WITH OPEN WOUND INTO CAVITY
	86819	INJURY TO OTHER AND MULTIPLE INTRA-ABDOMINAL ORGANS WITH OPEN WOUND INTO CAVITY
	8750	OPEN WOUND OF CHEST (WALL) WITHOUT COMPLICATION
	8751	OPEN WOUND OF CHEST (WALL) COMPLICATED
	8760	OPEN WOUND OF BACK WITHOUT COMPLICATION

	8761	OPEN WOUND OF BACK COMPLICATED
	8792	OPEN WOUND OF ABDOMINAL WALL ANTERIOR WITHOUT COMPLICATION
	8793	OPEN WOUND OF ABDOMINAL WALL ANTERIOR COMPLICATED
	8794	OPEN WOUND OF ABDOMINAL WALL LATERAL WITHOUT COMPLICATION
	8795	OPEN WOUND OF ABDOMINAL WALL LATERAL COMPLICATED
	9222	CONTUSION OF ABDOMINAL WALL
	9228	CONTUSION OF MULTIPLE SITES OF TRUNK
	9229	CONTUSION OF UNSPECIFIED PART OF TRUNK
	9268	CRUSHING INJURY OF MULTIPLE SITES OF TRUNK
	9269	CRUSHING INJURY OF UNSPECIFIED SITE OF TRUNK
	9472	BURN OF ESOPHAGUS
	9473	BURN OF GASTROINTESTINAL TRACT
	95911	OTHER INJURY OF CHEST WALL
	95912	OTHER INJURY OF ABDOMEN
	8676	INJURY TO OTHER SPECIFIED PELVIC ORGANS WITHOUT OPEN WOUND INTO CAVITY
	8677	INJURY TO OTHER SPECIFIED PELVIC ORGANS WITH OPEN WOUND INTO CAVITY
	937	FOREIGN BODY IN ANUS AND RECTUM
	938	FOREIGN BODY IN DIGESTIVE SYSTEM UNSPECIFIED
Burn	94200	BURN OF UNSPECIFIED DEGREE OF UNSPECIFIED SITE OF TRUNK
	94201	BURN OF UNSPECIFIED DEGREE OF BREAST
	94202	BURN OF UNSPECIFIED DEGREE OF CHEST WALL EXCLUDING BREAST AND NIPPLE
	94203	BURN OF UNSPECIFIED DEGREE OF ABDOMINAL WALL
	94204	BURN OF UNSPECIFIED DEGREE OF BACK (ANY PART)
	94209	BURN OF UNSPECIFIED DEGREE OF OTHER AND MULTIPLE SITES OF TRUNK
	94210	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF UNSPECIFIED SITE OF TRUNK
	94211	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF BREAST
	94212	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF CHEST WALL EXCLUDING BREAST AND NIPPLE
	94213	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF ABDOMINAL WALL
	94214	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF BACK (ANY PART)
	94219	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF OTHER AND MULTIPLE SITES OF TRUNK
	94220	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF UNSPECIFIED SITE OF TRUNK
	94221	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF BREAST
	94222	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF CHEST WALL EXCLUDING BREAST AND NIPPLE
	94223	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF ABDOMINAL WALL
	94224	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF BACK (ANY PART)
	94229	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF OTHER AND MULTIPLE SITES OF TRUNK
	94230	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF UNSPECIFIED SITE OF TRUNK
	94231	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF BREAST
	94232	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF CHEST WALL EXCLUDING BREAST AND NIPPLE
	94233	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF ABDOMINAL WALL
	94234	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF BACK (ANY PART)
	94239	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF OTHER AND MULTIPLE SITES OF TRUNK
	94240	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF TRUNK UNSPECIFIED SITE WITHOUT LOSS OF BODY PART

94241	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF BREAST WITHOUT LOSS OF BREAST
94242	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF CHEST WALL WITHOUT LOSS OF CHEST WALL
94243	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF ABDOMINAL WALL WITHOUT LOSS OF ABDOMINAL WALL
94244	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF BACK (ANY PART) WITHOUT LOSS OF BACK
94249	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF OTHER AND MULTIPLE SITES OF TRUNK
94250	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF UNSPECIFIED SITE OF TRUNK WITH LOSS OF BODY PART
94251	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF BREAST WITH LOSS OF BREAST
94252	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF CHEST WALL WITH LOSS OF CHEST WALL
94253	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF ABDOMINAL WALL WITH LOSS OF ABDOMINAL WALL
94254	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF BACK (ANY PART) WITH LOSS OF BACK
94259	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF OTHER AND MULTIPLE SITES WITH LOSS OF A BODY PART
94300	BURN OF UNSPECIFIED DEGREE OF UNSPECIFIED SITE OF UPPER LIMB
94301	BURN OF UNSPECIFIED DEGREE OF FOREARM
94302	BURN OF UNSPECIFIED DEGREE OF ELBOW
94303	BURN OF UNSPECIFIED DEGREE OF UPPER ARM
94304	BURN OF UNSPECIFIED DEGREE OF AXILLA
94305	BURN OF UNSPECIFIED DEGREE OF SHOULDER
94306	BURN OF UNSPECIFIED DEGREE OF SCAPULAR REGION
94309	BURN OF UNSPECIFIED DEGREE MULTIPLE SITES OF UPPER LIMB EXCEPT WRIST AND HAND
94310	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF UNSPECIFIED SITE OF UPPER LIMB
94311	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF FOREARM
94312	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF ELBOW
94313	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF UPPER ARM
94314	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF AXILLA
94315	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF SHOULDER
94316	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF SCAPULAR REGION
94319	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF MULTIPLE SITES OF UPPER LIMB EXCEPT WRIST AND HAND
94320	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF UNSPECIFIED SITE OF UPPER LIMB
94321	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF FOREARM
94322	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF ELBOW
94323	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF UPPER ARM
94324	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF AXILLA
94325	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF SHOULDER
94326	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF SCAPULAR REGION
94329	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF MULTIPLE SITES OF UPPER LIMB EXCEPT WRIST AND HAND
94330	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF UNSPECIFIED SITE OF UPPER LIMB
94331	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF FOREARM
94332	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF ELBOW
94333	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF UPPER ARM
94334	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF AXILLA
94335	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF SHOULDER
94336	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF SCAPULAR REGION
94339	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF MULTIPLE SITES OF UPPER LIMB EXCEPT WRIST AND HAND

94340 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF UNSPECIFIED SITE OF UPPER LIMB

94341 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF FOREARM WITHOUT LOSS OF FOREARM

94342 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF ELBOW WITHOUT LOSS OF ELBOW

94343 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF UPPER ARM WITHOUT LOSS OF UPPER ARM

94344 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN OF AXILLA WITHOUT LOSS OF AXILLA

94345 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF SHOULDER WITHOUT LOSS OF SHOULDER

94346 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF SCAPULAR REGION WITHOUT LOSS OF SCAPULA

94349 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF MULTIPLE SITES OF UPPER LIMB

94350 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF UPPER LIMB WITH LOSS OF A BODY PART

94351 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF FOREARM WITH LOSS OF FOREARM

94352 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF ELBOW WITH LOSS OF ELBOW

94353 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF UPPER ARM WITH LOSS OF UPPER ARM

94354 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF AXILLA WITH LOSS OF AXILLA

94355 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF SHOULDER WITH LOSS OF SHOULDER

94356 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF SCAPULAR REGION WITH LOSS OF SCAPULA

94359 DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) MULTIPLE SITES OF UPPER LIMB WITH LOSS OF UPPER LIMB

94400 BURN OF UNSPECIFIED DEGREE OF UNSPECIFIED SITE OF HAND

94401 BURN OF UNSPECIFIED DEGREE OF SINGLE DIGIT (FINGER (NAIL) OTHER THAN THUMB

94402 BURN OF UNSPECIFIED DEGREE OF THUMB (NAIL)

94403 BURN OF UNSPECIFIED DEGREE OF TWO OR MORE DIGITS OF HAND NOT INCLUDING THUMB

94404 BURN OF UNSPECIFIED DEGREE OF TWO OR MORE DIGITS OF HAND INCLUDING THUMB

94405 BURN OF UNSPECIFIED DEGREE OF PALM OF HAND

94406 BURN OF UNSPECIFIED DEGREE OF BACK OF HAND

94407 BURN OF UNSPECIFIED DEGREE OF WRIST

94408 BURN OF UNSPECIFIED DEGREE OF MULTIPLE SITES OF WRIST(S) AND HAND(S)

94410 ERYTHEMA DUE TO BURN (FIRST DEGREE) OF UNSPECIFIED SITE OF HAND

94411 ERYTHEMA DUE TO BURN (FIRST DEGREE) OF SINGLE DIGIT (FINGER (NAIL)) OTHER THAN THUMB

94412 ERYTHEMA DUE TO BURN (FIRST DEGREE) OF THUMB (NAIL)

94413 ERYTHEMA DUE TO BURN (FIRST DEGREE) OF TWO OR MORE DIGITS OF HAND NOT INCLUDING THUMB

94414 ERYTHEMA DUE TO BURN (FIRST DEGREE) OF TWO OR MORE DIGITS OF HAND INCLUDING THUMB

94415 ERYTHEMA DUE TO BURN (FIRST DEGREE) OF PALM OF HAND

94416 ERYTHEMA DUE TO BURN (FIRST DEGREE) OF BACK OF HAND

94417 ERYTHEMA DUE TO BURN (FIRST DEGREE) OF WRIST

94418 ERYTHEMA DUE TO BURN (FIRST DEGREE) OF MULTIPLE SITES OF WRIST(S) AND HAND(S)

94420 BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF UNSPECIFIED SITE OF HAND

94421 BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF SINGLE DIGIT (FINGER (NAIL)) OTHER THAN THUMB

94422 BLISTERS WITH EPIDERMAL LOSS DUE TO BURN OF (SECOND DEGREE) OF THUMB (NAIL)

94423 BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF TWO OR MORE DIGITS OF HAND NOT INCLUDING THUMB

94424 BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF TWO OR MORE DIGITS OF HAND INCLUDING THUMB

94425 BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF PALM OF HAND

94426 BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF BACK OF HAND

94427 BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF WRIST

94428 BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF MULTIPLE SITES OF WRIST(S) AND HAND(S)

94430	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF UNSPECIFIED SITE OF HAND
94431	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF SINGLE DIGIT (FINGER (NAIL)) OTHER THAN THUMB
94432	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF THUMB (NAIL)
94433	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF TWO OR MORE DIGITS OF HAND NOT INCLUDING THUMB
94434	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF TWO OR MORE DIGITS OF HAND INCLUDING THUMB
94435	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF PALM OF HAND
94436	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF BACK OF HAND
94437	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF WRIST
94438	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF MULTIPLE SITES OF WRIST(S) AND HAND(S)
94440	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF UNSPECIFIED SITE OF HAND WITHOUT LOSS OF HAND
94441	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF SINGLE DIGIT (FINGER (NAIL)) OTHER THAN THUMB
94442	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF THUMB (NAIL) WITHOUT LOSS OF THUMB
94443	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF TWO OR MORE DIGITS OF HAND NOT INCLUDING THUMB
94444	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF TWO OR MORE DIGITS OF HAND INCLUDING THUMB
94445	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF PALM OF HAND WITHOUT LOSS OF PALM
94446	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF BACK OF HAND WITHOUT LOSS OF BACK OF HAND
94447	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF WRIST WITHOUT LOSS OF WRIST
94448	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF MULTIPLE SITES OF WRIST(S) AND HAND(S)
94450	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF UNSPECIFIED SITE OF HAND WITH LOSS OF HAND
94451	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF SINGLE DIGIT) OTHER THAN THUMB WITH LOSS OF FINGER
94452	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF THUMB (NAIL) WITH LOSS OF THUMB
94453	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF TWO OR MORE DIGITS WITH LOSS OF FINGERS
94454	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF TWO OR MORE DIGITS INCLUDING THUMB WITH LOSS
94455	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF PALM OF HAND WITH LOSS OF PALM OF HAND
94456	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF BACK OF HAND WITH LOSS OF BACK OF HAND
94457	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF WRIST WITH LOSS OF WRIST
94458	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF MULTIPLE SITES WRIST AND HAND WITH LOSS OF A PART
94205	BURN OF UNSPECIFIED DEGREE OF GENITALIA
94215	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF GENITALIA
94225	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF GENITALIA
94235	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF GENITALIA
94245	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF GENITALIA WITHOUT LOSS OF GENITALIA
94255	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF GENITALIA WITH LOSS OF GENITALIA
94506	BURN OF UNSPECIFIED DEGREE OF THIGH (ANY PART)
94516	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF THIGH (ANY PART)
94526	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF THIGH (ANY PART)
94536	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF THIGH (ANY PART)
94546	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF THIGH (ANY PART) WITHOUT LOSS OF THIGH
94556	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF THIGH (ANY PART) WITH LOSS OF THIGH
94500	BURN OF UNSPECIFIED DEGREE OF UNSPECIFIED SITE OF LOWER LIMB (LEG)
94510	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF UNSPECIFIED SITE OF LOWER LIMB (LEG)
94520	BLISTERS EPIDERMAL LOSS (SECOND DEGREE) OF UNSPECIFIED SITE OF LOWER LIMB (LEG)
94530	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF UNSPECIFIED SITE OF LOWER LIMB

94540	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF LOWER LIMB WITHOUT LOSS OF A BODY PART
94550	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF UNSPECIFIED SITE LOWER LIMB WITH LOSS OF BODY PART
94501	BURN OF UNSPECIFIED DEGREE OF TOE(S) (NAIL)
94511	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF TOE(S) (NAIL)
94521	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF TOE(S) (NAIL)
94531	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF TOE(S) (NAIL)
94541	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF TOE(S) (NAIL) WITHOUT LOSS OF TOE(S)
94551	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF TOE(S) (NAIL) WITH LOSS OF TOE(S)
94502	BURN OF UNSPECIFIED DEGREE OF FOOT
94512	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF FOOT
94522	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF FOOT
94532	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF FOOT
94542	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF FOOT WITHOUT LOSS OF FOOT
94552	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF FOOT WITH LOSS OF FOOT
94503	BURN OF UNSPECIFIED DEGREE OF ANKLE
94513	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF ANKLE
94523	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF ANKLE
94533	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF ANKLE
94543	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF ANKLE WITHOUT LOSS OF ANKLE
94553	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF ANKLE WITH LOSS OF ANKLE
94504	BURN OF UNSPECIFIED DEGREE OF LOWER LEG
94514	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF LOWER LEG
94524	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF LOWER LEG
94534	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF LOWER LEG
94544	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF LOWER LEG WITHOUT LOSS OF LOWER LEG
94554	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF LOWER LEG WITH LOSS OF LOWER LEG
94505	BURN OF UNSPECIFIED DEGREE OF KNEE
94515	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF KNEE
94525	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF KNEE
94535	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF KNEE
94545	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF KNEE WITHOUT LOSS OF KNEE
94555	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF KNEE WITH LOSS OF KNEE
94509	BURN OF UNSPECIFIED DEGREE OF MULTIPLE SITES OF LOWER LIMB(S)
94519	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF MULTIPLE SITES OF LOWER LIMB(S)
94529	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF MULTIPLE SITES OF LOWER LIMB(S)
94539	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF MULTIPLE SITES OF LOWER LIMB(S)
94549	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF MULTIPLE SITES LOWER LIMB WITHOUT LOSS OF PART
94559	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF MULTIPLE SITES LOWER LIMB WITH LOSS OF A BODY PART
9460	BURNS OF MULTIPLE SPECIFIED SITES UNSPECIFIED DEGREE
9461	ERYTHEMA DUE TO BURN (FIRST DEGREE) OF MULTIPLE SPECIFIED SITES
9462	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) OF MULTIPLE SPECIFIED SITES
9463	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) OF MULTIPLE SPECIFIED SITES
9464	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE) OF MULTIPLE SPECIFIED SITES WITHOUT LOSS OF A BODY PART

	94886	BURN (ANY DEGREE) INVOLVING 80-89 PERCENT OF BODY SURFACE WITH THIRD DEGREE BURN OF 60-69%
	94887	BURN (ANY DEGREE) INVOLVING 80-89 PERCENT OF BODY SURFACE WITH THIRD DEGREE BURN OF 70-79%
	94888	BURN (ANY DEGREE) INVOLVING 80-89 PERCENT OF BODY SURFACE WITH THIRD DEGREE BURN OF 80-89%
	94890	BURN (ANY DEGREE) INVOLVING 90 PERCENT OR MORE OF BODY SURFACE WITH THIRD DEGREE BURN OF LESS THAN 10 PERCENT
	94891	BURN (ANY DEGREE) INVOLVING 90 PERCENT OR MORE OF BODY SURFACE WITH THIRD DEGREE BURN OF 10-19%
	94892	BURN (ANY DEGREE) INVOLVING 90 PERCENT OR MORE OF BODY SURFACE WITH THIRD DEGREE BURN OF 20-29%
	94893	BURN (ANY DEGREE) INVOLVING 90 PERCENT OR MORE OF BODY SURFACE WITH THIRD DEGREE BURN OF 30-39%
	94894	BURN (ANY DEGREE) INVOLVING 90 PERCENT OR MORE OF BODY SURFACE WITH THIRD DEGREE BURN OF 40-49%
	94895	BURN (ANY DEGREE) INVOLVING 90 PERCENT OR MORE OF BODY SURFACE WITH THIRD DEGREE BURN OF 50-59%
	94896	BURN (ANY DEGREE) INVOLVING 90 PERCENT OR MORE OF BODY SURFACE WITH THIRD DEGREE BURN OF 60-69%
	94897	BURN (ANY DEGREE) INVOLVING 90 PERCENT OR MORE OF BODY SURFACE WITH THIRD DEGREE BURN OF 70-79%
	94898	BURN (ANY DEGREE) INVOLVING 90 PERCENT OR MORE OF BODY SURFACE WITH THIRD DEGREE BURN OF 80-89%
	94899	BURN (ANY DEGREE) INVOLVING 90 PERCENT OR MORE OF BODY SURFACE WITH THIRD DEGREE BURN OF 90% OR MORE OF BODY SURFACE
	9490	BURN OF UNSPECIFIED SITE UNSPECIFIED DEGREE
	9491	ERYTHEMA DUE TO BURN (FIRST DEGREE) UNSPECIFIED SITE
	9492	BLISTERS WITH EPIDERMAL LOSS DUE TO BURN (SECOND DEGREE) UNSPECIFIED SITE
	9493	FULL-THICKNESS SKIN LOSS DUE TO BURN (THIRD DEGREE NOS) UNSPECIFIED SITE
	9494	DEEP NECROSIS OF UNDERLYING TISSUE DUE TO BURN (DEEP THIRD DEGREE) UNSPECIFIED SITE WITHOUT LOSS OF A BODY PART
	9495	DEEP NECROSIS OF UNDERLYING TISSUES DUE TO BURN (DEEP THIRD DEGREE UNSPECIFIED SITE WITH LOSS OF A BODY PART
	9471	BURN OF LARYNX TRACHEA AND LUNG
	9478	BURN OF OTHER SPECIFIED SITES OF INTERNAL ORGANS
	9479	BURN OF INTERNAL ORGAN UNSPECIFIED SITE
Extremity / Orthopedic	81346	TORUS FRACTURE OF ULNA (ALONE)
	81347	TORUS FRACTURE OF RADIUS AND ULNA
	81500	CLOSED FRACTURE OF METACARPAL BONE(S) SITE UNSPECIFIED
	81501	CLOSED FRACTURE OF BASE OF THUMB (FIRST) METACARPAL
	81502	CLOSED FRACTURE OF BASE OF OTHER METACARPAL BONE(S)
	81503	CLOSED FRACTURE OF SHAFT OF METACARPAL BONE(S)
	81504	CLOSED FRACTURE OF NECK OF METACARPAL BONE(S)
	81509	CLOSED FRACTURE OF MULTIPLE SITES OF METACARPUS
	83100	CLOSED DISLOCATION OF SHOULDER UNSPECIFIED SITE
	83101	CLOSED ANTERIOR DISLOCATION OF HUMERUS
	83102	CLOSED POSTERIOR DISLOCATION OF HUMERUS
	83103	CLOSED INFERIOR DISLOCATION OF HUMERUS
	83104	CLOSED DISLOCATION OF ACROMIOCLAVICULAR (JOINT)
	83109	CLOSED DISLOCATION OF OTHER SITE OF SHOULDER
	83110	OPEN DISLOCATION OF SHOULDER UNSPECIFIED
	83111	OPEN ANTERIOR DISLOCATION OF HUMERUS
	83112	OPEN POSTERIOR DISLOCATION OF HUMERUS
	83113	OPEN INFERIOR DISLOCATION OF HUMERUS
	83114	OPEN DISLOCATION OF ACROMIOCLAVICULAR (JOINT)
	83119	OPEN DISLOCATION OF OTHER SITE OF SHOULDER
	83200	CLOSED DISLOCATION OF ELBOW UNSPECIFIED SITE

83201	CLOSED ANTERIOR DISLOCATION OF ELBOW
83202	CLOSED POSTERIOR DISLOCATION OF ELBOW
83203	CLOSED MEDIAL DISLOCATION OF ELBOW
83204	CLOSED LATERAL DISLOCATION OF ELBOW
83209	CLOSED DISLOCATION OF OTHER SITE OF ELBOW
83210	OPEN DISLOCATION OF ELBOW UNSPECIFIED SITE
83211	OPEN ANTERIOR DISLOCATION OF ELBOW
83212	OPEN POSTERIOR DISLOCATION OF ELBOW
83213	OPEN MEDIAL DISLOCATION OF ELBOW
83214	OPEN LATERAL DISLOCATION OF ELBOW
83219	OPEN DISLOCATION OF OTHER SITE OF ELBOW
8322	NURSEMAID'S ELBOW
83300	CLOSED DISLOCATION OF WRIST UNSPECIFIED PART
83301	CLOSED DISLOCATION OF RADIOULNAR (JOINT) DISTAL
83302	CLOSED DISLOCATION OF RADIOCARPAL (JOINT)
83303	CLOSED DISLOCATION OF MIDCARPAL (JOINT)
83304	CLOSED DISLOCATION OF CARPOMETACARPAL (JOINT)
83305	CLOSED DISLOCATION OF METACARPAL (BONE) PROXIMAL END
83309	CLOSED DISLOCATION OF OTHER PART OF WRIST
83310	OPEN DISLOCATION OF WRIST UNSPECIFIED PART
83311	OPEN DISLOCATION OF RADIOULNAR (JOINT) DISTAL
83312	OPEN DISLOCATION OF RADIOCARPAL (JOINT)
83313	OPEN DISLOCATION OF MIDCARPAL (JOINT)
83314	OPEN DISLOCATION OF CARPOMETACARPAL (JOINT)
83315	OPEN DISLOCATION OF METACARPAL (BONE) PROXIMAL END
83319	OPEN DISLOCATION OF OTHER PART OF WRIST
83400	CLOSED DISLOCATION OF FINGER UNSPECIFIED PART
83401	CLOSED DISLOCATION OF METACARPOPHALANGEAL (JOINT)
83402	CLOSED DISLOCATION OF INTERPHALANGEAL (JOINT) HAND
83410	OPEN DISLOCATION OF FINGER UNSPECIFIED PART
83411	OPEN DISLOCATION OF METACARPOPHALANGEAL (JOINT)
83412	OPEN DISLOCATION INTERPHALANGEAL (JOINT) HAND
8400	ACROMIOCLAVICULAR (JOINT) (LIGAMENT) SPRAIN
8401	CORACOCALVICULAR (LIGAMENT) SPRAIN
8402	CORACOHUMERAL (LIGAMENT) SPRAIN
8403	INFRASPINATUS (MUSCLE) (TENDON) SPRAIN
8404	ROTATOR CUFF (CAPSULE) SPRAIN
8405	SUBSCAPULARIS (MUSCLE) SPRAIN
8406	SUPRASPINATUS (MUSCLE) (TENDON) SPRAIN
8407	SUPERIOR GLENOID LABRUM LESION
8408	SPRAIN OF OTHER SPECIFIED SITES OF SHOULDER AND UPPER ARM
8409	SPRAIN OF UNSPECIFIED SITE OF SHOULDER AND UPPER ARM
8410	RADIAL COLLATERAL LIGAMENT SPRAIN

8411	ULNAR COLLATERAL LIGAMENT SPRAIN
8412	RADIOHUMERAL (JOINT) SPRAIN
8413	ULNOHUMERAL (JOINT) SPRAIN
8418	SPRAIN OF OTHER SPECIFIED SITES OF ELBOW AND FOREARM
8419	SPRAIN OF UNSPECIFIED SITE OF ELBOW AND FOREARM
84200	SPRAIN OF UNSPECIFIED SITE OF WRIST
84201	SPRAIN OF CARPAL (JOINT) OF WRIST
84202	SPRAIN OF RADIOCARPAL (JOINT) (LIGAMENT) OF WRIST
84209	OTHER WRIST SPRAIN
84210	SPRAIN OF UNSPECIFIED SITE OF HAND
84211	SPRAIN OF CARPOMETACARPAL (JOINT) OF HAND
84212	SPRAIN OF METACARPOPHALANGEAL (JOINT) OF HAND
84213	SPRAIN OF INTERPHALANGEAL (JOINT) OF HAND
84219	OTHER HAND SPRAIN
88000	OPEN WOUND OF SHOULDER REGION WITHOUT COMPLICATION
88001	OPEN WOUND OF SCAPULAR REGION WITHOUT COMPLICATION
88002	OPEN WOUND OF AXILLARY REGION WITHOUT COMPLICATION
88003	OPEN WOUND OF UPPER ARM WITHOUT COMPLICATION
88009	OPEN WOUND OF MULTIPLE SITES OF SHOULDER AND UPPER ARM WITHOUT COMPLICATION
88010	OPEN WOUND OF SHOULDER REGION COMPLICATED
88011	OPEN WOUND OF SCAPULAR REGION COMPLICATED
88012	OPEN WOUND OF AXILLARY REGION COMPLICATED
88013	OPEN WOUND OF UPPER ARM COMPLICATED
88019	OPEN WOUND OF MULTIPLE SITES OF SHOULDER AND UPPER ARM COMPLICATED
88020	OPEN WOUND OF SHOULDER REGION WITH TENDON INVOLVEMENT
88021	OPEN WOUND OF SCAPULAR REGION WITH TENDON INVOLVEMENT
88022	OPEN WOUND OF AXILLARY REGION WITH TENDON INVOLVEMENT
88023	OPEN WOUND OF UPPER ARM WITH TENDON INVOLVEMENT
88029	OPEN WOUND OF MULTIPLE SITES OF SHOULDER AND UPPER ARM WITH TENDON INVOLVEMENT
88100	OPEN WOUND OF FOREARM WITHOUT COMPLICATION
88101	OPEN WOUND OF ELBOW WITHOUT COMPLICATION
88102	OPEN WOUND OF WRIST WITHOUT COMPLICATION
88110	OPEN WOUND OF FOREARM COMPLICATED
88111	OPEN WOUND OF ELBOW COMPLICATED
88112	OPEN WOUND OF WRIST COMPLICATED
88120	OPEN WOUND OF FOREARM WITH TENDON INVOLVEMENT
88121	OPEN WOUND OF ELBOW WITH TENDON INVOLVEMENT
88122	OPEN WOUND OF WRIST WITH TENDON INVOLVEMENT
8820	OPEN WOUND OF HAND EXCEPT FINGERS ALONE WITHOUT COMPLICATION
8821	OPEN WOUND OF HAND EXCEPT FINGERS ALONE COMPLICATED
8822	OPEN WOUND OF HAND EXCEPT FINGERS ALONE WITH TENDON INVOLVEMENT
8830	OPEN WOUND OF FINGERS WITHOUT COMPLICATION
8831	OPEN WOUND OF FINGERS COMPLICATED

8832	OPEN WOUND OF FINGERS WITH TENDON INVOLVEMENT
8840	MULTIPLE AND UNSPECIFIED OPEN WOUND OF UPPER LIMB WITHOUT COMPLICATION
8841	MULTIPLE AND UNSPECIFIED OPEN WOUND OF UPPER LIMB COMPLICATED
8842	MULTIPLE AND UNSPECIFIED OPEN WOUND OF UPPER LIMB WITH TENDON INVOLVEMENT
8850	TRAUMATIC AMPUTATION OF THUMB (COMPLETE)(PARTIAL) WITHOUT COMPLICATION
8851	TRAUMATIC AMPUTATION OF THUMB (COMPLETE)(PARTIAL) COMPLICATED
8860	TRAUMATIC AMPUTATION OF OTHER FINGER(S) (COMPLETE) (PARTIAL) WITHOUT COMPLICATION
8861	TRAUMATIC AMPUTATION OF OTHER FINGER(S) (COMPLETE) (PARTIAL) COMPLICATED
8870	TRAUMATIC AMPUTATION OF ARM AND HAND (COMPLETE) (PARTIAL) UNILATERAL BELOW ELBOW WITHOUT COMPLICATION
8871	TRAUMATIC AMPUTATION OF ARM AND HAND (COMPLETE) (PARTIAL) UNILATERAL BELOW ELBOW COMPLICATED
8872	TRAUMATIC AMPUTATION OF ARM AND HAND (COMPLETE) (PARTIAL) UNILATERAL AT OR ABOVE ELBOW WITHOUT COMPLICATION
8873	TRAUMATIC AMPUTATION OF ARM AND HAND (COMPLETE) (PARTIAL) UNILATERAL AT OR ABOVE ELBOW COMPLICATED
8874	TRAUMATIC AMPUTATION OF ARM AND HAND (COMPLETE) (PARTIAL) UNILATERAL LEVEL NOT SPECIFIED WITHOUT COMPLICATION
8875	TRAUMATIC AMPUTATION OF ARM AND HAND (COMPLETE) (PARTIAL) UNILATERAL LEVEL NOT SPECIFIED COMPLICATED
8876	TRAUMATIC AMPUTATION OF ARM AND HAND (COMPLETE) (PARTIAL) BILATERAL (ANY LEVEL) WITHOUT COMPLICATION
8877	TRAUMATIC AMPUTATION OF ARM AND HAND (COMPLETE) (PARTIAL) BILATERAL (ANY LEVEL) COMPLICATED
90300	INJURY TO AXILLARY VESSEL(S) UNSPECIFIED
9031	INJURY TO BRACHIAL BLOOD VESSELS
9032	INJURY TO RADIAL BLOOD VESSELS
9033	INJURY TO ULNAR BLOOD VESSELS
9034	INJURY TO PALMAR ARTERY
9035	INJURY TO DIGITAL BLOOD VESSELS
9038	INJURY TO OTHER SPECIFIED BLOOD VESSELS OF UPPER EXTREMITY
9039	INJURY TO UNSPECIFIED BLOOD VESSEL OF UPPER EXTREMITY
92300	CONTUSION OF SHOULDER REGION
92301	CONTUSION OF SCAPULAR REGION
92302	CONTUSION OF AXILLARY REGION
92303	CONTUSION OF UPPER ARM
92309	CONTUSION OF MULTIPLE SITES OF SHOULDER AND UPPER ARM
92310	CONTUSION OF FOREARM
92311	CONTUSION OF ELBOW
92320	CONTUSION OF HAND(S)
92321	CONTUSION OF WRIST
9233	CONTUSION OF FINGER
9238	CONTUSION OF MULTIPLE SITES OF UPPER LIMB
9239	CONTUSION OF UNSPECIFIED PART OF UPPER LIMB
92700	CRUSHING INJURY OF SHOULDER REGION
92701	CRUSHING INJURY OF SCAPULAR REGION
92702	CRUSHING INJURY OF AXILLARY REGION
92703	CRUSHING INJURY OF UPPER ARM
92709	CRUSHING INJURY OF MULTIPLE SITES OF UPPER ARM
92710	CRUSHING INJURY OF FOREARM
92711	CRUSHING INJURY OF ELBOW

92720	CRUSHING INJURY OF HAND(S)
92721	CRUSHING INJURY OF WRIST
9273	CRUSHING INJURY OF FINGER(S)
9278	CRUSHING INJURY OF MULTIPLE SITES OF UPPER LIMB
9279	CRUSHING INJURY OF UNSPECIFIED SITE OF UPPER LIMB
9550	INJURY TO AXILLARY NERVE
9551	INJURY TO MEDIAN NERVE
9552	INJURY TO ULNAR NERVE
9553	INJURY TO RADIAL NERVE
9554	INJURY TO MUSCULOCUTANEOUS NERVE
9555	INJURY TO CUTANEOUS SENSORY NERVE UPPER LIMB
9556	INJURY TO DIGITAL NERVE UPPER LIMB
9557	INJURY TO OTHER SPECIFIED NERVE(S) OF SHOULDER GIRDLE AND UPPER LIMB
9558	INJURY TO MULTIPLE NERVES OF SHOULDER GIRDLE AND UPPER LIMB
9559	INJURY TO UNSPECIFIED NERVE OF SHOULDER GIRDLE AND UPPER LIMB
9120	ABRASION OR FRICTION BURN OF SHOULDER AND UPPER ARM WITHOUT INFECTION
9121	ABRASION OR FRICTION BURN OF SHOULDER AND UPPER ARM INFECTED
9122	BLISTER OF SHOULDER AND UPPER ARM WITHOUT INFECTION
9123	BLISTER OF SHOULDER AND UPPER ARM INFECTED
9126	SUPERFICIAL FOREIGN BODY (SPLINTER) OF SHOULDER AND UPPER ARM WITHOUT MAJOR OPEN WOUND AND WITHOUT INFECTION
9127	SUPERFICIAL FOREIGN BODY (SPLINTER) OF SHOULDER AND UPPER ARM WITHOUT MAJOR OPEN WOUND INFECTED
9128	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF SHOULDER AND UPPER ARM WITHOUT INFECTION
9129	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF SHOULDER AND UPPER ARM INFECTED
9130	ABRASION OR FRICTION BURN OF ELBOW FOREARM AND WRIST WITHOUT INFECTION
9131	ABRASION OR FRICTION BURN OF ELBOW FOREARM AND WRIST INFECTED
9132	BLISTER OF ELBOW FOREARM AND WRIST WITHOUT INFECTION
9133	BLISTER OF ELBOW FOREARM AND WRIST INFECTED
9136	SUPERFICIAL FOREIGN BODY (SPLINTER) OF ELBOW FOREARM AND WRIST WITHOUT MAJOR OPEN WOUND AND WITHOUT INFECTION
9137	SUPERFICIAL FOREIGN BODY (SPLINTER) OF ELBOW FOREARM AND WRIST WITHOUT MAJOR OPEN WOUND INFECTED
9138	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF ELBOW FOREARM AND WRIST WITHOUT INFECTION
9139	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF ELBOW FOREARM AND WRIST INFECTED
9140	ABRASION OR FRICTION BURN OF HAND(S) EXCEPT FINGER(S) ALONE WITHOUT INFECTION
9141	ABRASION OR FRICTION BURN OF HAND(S) EXCEPT FINGER(S) ALONE INFECTED
9142	BLISTER OF HAND(S) EXCEPT FINGER(S) ALONE WITHOUT INFECTION
9143	BLISTER OF HAND(S) EXCEPT FINGER(S) ALONE INFECTED
9146	SUPERFICIAL FOREIGN BODY (SPLINTER) OF HAND(S) EXCEPT FINGER(S) ALONE WITHOUT MAJOR OPEN WOUND AND WITHOUT INFECTION
9147	SUPERFICIAL FOREIGN BODY (SPLINTER) OF HAND(S) EXCEPT FINGER(S) ALONE WITHOUT MAJOR OPEN WOUND INFECTED
9148	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF HAND(S) EXCEPT FINGER(S) ALONE WITHOUT INFECTION
9149	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF HAND(S) EXCEPT FINGER(S) ALONE INFECTED
9150	ABRASION OR FRICTION BURN OF FINGERS WITHOUT INFECTION
9151	ABRASION OR FRICTION BURN OF FINGERS INFECTED
9152	BLISTER OF FINGERS WITHOUT INFECTION
9153	BLISTER OF FINGERS INFECTED

9156	SUPERFICIAL FOREIGN BODY (SPLINTER) OF FINGERS WITHOUT MAJOR OPEN WOUND AND WITHOUT INFECTION
9157	SUPERFICIAL FOREIGN BODY (SPLINTER) OF FINGERS WITHOUT MAJOR OPEN WOUND INFECTED
9158	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF FINGERS WITHOUT INFECTION
9159	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF FINGERS INFECTED
9534	INJURY TO BRACHIAL PLEXUS
9592	OTHER AND UNSPECIFIED INJURY TO SHOULDER AND UPPER ARM
9593	OTHER AND UNSPECIFIED INJURY TO ELBOW FOREARM AND WRIST
9594	OTHER AND UNSPECIFIED INJURY TO HAND EXCEPT FINGER
9595	OTHER AND UNSPECIFIED INJURY TO FINGER
80844	MULTIPLE CLOSED PELVIC FRACTURES WITHOUT DISRUPTION OF PELVIC CIRCLE
80854	MULTIPLE OPEN PELVIC FRACTURES WITHOUT DISRUPTION OF PELVIC CIRCLE
83500	CLOSED DISLOCATION OF HIP UNSPECIFIED SITE
83501	CLOSED POSTERIOR DISLOCATION OF HIP
83502	CLOSED OBTURATOR DISLOCATION OF HIP
83503	OTHER CLOSED ANTERIOR DISLOCATION OF HIP
83510	OPEN DISLOCATION OF HIP UNSPECIFIED SITE
83511	OPEN POSTERIOR DISLOCATION OF HIP
83512	OPEN OBTURATOR DISLOCATION OF HIP
83513	OTHER OPEN ANTERIOR DISLOCATION OF HIP
8430	ILIOFEMORAL (LIGAMENT) SPRAIN
8431	ISCHIOCAPSULAR (LIGAMENT) SPRAIN
8438	SPRAIN OF OTHER SPECIFIED SITES OF HIP AND THIGH
8439	SPRAIN OF UNSPECIFIED SITE OF HIP AND THIGH
8460	LUMBOSACRAL (JOINT) (LIGAMENT) SPRAIN
8461	SACROILIAC (LIGAMENT) SPRAIN
8462	SACROSPINATUS (LIGAMENT) SPRAIN
8463	SACROTUBEROUS (LIGAMENT) SPRAIN
8468	OTHER SPECIFIED SITES OF SACROILIAC REGION SPRAIN
8469	UNSPECIFIED SITE OF SACROILIAC REGION SPRAIN
8900	OPEN WOUND OF HIP AND THIGH WITHOUT COMPLICATION
8901	OPEN WOUND OF HIP AND THIGH COMPLICATED
8902	OPEN WOUND OF HIP AND THIGH WITH TENDON INVOLVEMENT
8485	PELVIC SPRAIN
8972	TRAUMATIC AMPUTATION OF LEG(S) (COMPLETE) (PARTIAL) UNILATERAL AT OR ABOVE KNEE WITHOUT COMPLICATION
8973	TRAUMATIC AMPUTATION OF LEG(S) (COMPLETE) (PARTIAL) UNILATERAL AT OR ABOVE KNEE COMPLICATED
9040	INJURY TO COMMON FEMORAL ARTERY
9041	INJURY TO SUPERFICIAL FEMORAL ARTERY
9042	INJURY TO FEMORAL VEINS
9043	INJURY TO SAPHENOUS VEINS
9224	CONTUSION OF GENITAL ORGANS
9260	CRUSHING INJURY OF EXTERNAL GENTALIA
9474	BURN OF VAGINA AND UTERUS
9533	INJURY TO SACRAL NERVE ROOT

9560	INJURY TO SCIATIC NERVE
9561	INJURY TO FEMORAL NERVE
9596	OTHER AND UNSPECIFIED INJURY TO HIP AND THIGH
92232	CONTUSION OF BUTTOCK
92400	CONTUSION OF THIGH
92401	CONTUSION OF HIP
92612	CRUSHING INJURY OF BUTTOCK
92800	CRUSHING INJURY OF THIGH
92801	CRUSHING INJURY OF HIP
8250	FRACTURE OF CALCANEUS CLOSED
8251	FRACTURE OF CALCANEUS OPEN
8360	TEAR OF MEDIAL CARTILAGE OR MENISCUS OF KNEE CURRENT
8361	TEAR OF LATERAL CARTILAGE OR MENISCUS OF KNEE CURRENT
8362	OTHER TEAR OF CARTILAGE OR MENISCUS OF KNEE CURRENT
8363	DISLOCATION OF PATELLA CLOSED
8364	DISLOCATION OF PATELLA OPEN
83650	CLOSED DISLOCATION OF KNEE UNSPECIFIED PART
83651	ANTERIOR DISLOCATION OF TIBIA PROXIMAL END CLOSED
83652	POSTERIOR DISLOCATION OF TIBIA PROXIMAL END CLOSED
83653	MEDIAL DISLOCATION OF TIBIA PROXIMAL END CLOSED
83654	LATERAL DISLOCATION OF TIBIA PROXIMAL END CLOSED
83659	OTHER DISLOCATION OF KNEE CLOSED
83660	DISLOCATION OF KNEE UNSPECIFIED PART OPEN
83661	ANTERIOR DISLOCATION OF TIBIA PROXIMAL END OPEN
83662	POSTERIOR DISLOCATION OF TIBIA PROXIMAL END OPEN
83663	MEDIAL DISLOCATION OF TIBIA PROXIMAL END OPEN
83664	LATERAL DISLOCATION OF TIBIA PROXIMAL END OPEN
83669	OTHER DISLOCATION OF KNEE OPEN
8370	CLOSED DISLOCATION OF ANKLE
8371	OPEN DISLOCATION OF ANKLE
83800	CLOSED DISLOCATION OF FOOT UNSPECIFIED PART
83801	CLOSED DISLOCATION OF TARSAL (BONE) JOINT UNSPECIFIED
83802	CLOSED DISLOCATION OF MIDTARSAL (JOINT)
83803	CLOSED DISLOCATION OF TARSOMETATARSAL (JOINT)
83804	CLOSED DISLOCATION OF METATARSAL (BONE) JOINT UNSPECIFIED
83805	CLOSED DISLOCATION OF METATARSOPHALANGEAL (JOINT)
83806	CLOSED DISLOCATION OF INTERPHALANGEAL (JOINT) FOOT
83809	CLOSED DISLOCATION OF OTHER PART OF FOOT
83810	OPEN DISLOCATION OF FOOT UNSPECIFIED PART
83811	OPEN DISLOCATION OF TARSAL (BONE) JOINT UNSPECIFIED
83812	OPEN DISLOCATION OF MIDTARSAL (JOINT)
83813	OPEN DISLOCATION OF TARSOMETATARSAL (JOINT)
83814	OPEN DISLOCATION OF METATARSAL (BONE) JOINT UNSPECIFIED

83815	OPEN DISLOCATION OF METATARSOPHALANGEAL (JOINT)
83816	OPEN DISLOCATION OF INTERPHALANGEAL (JOINT) FOOT
83819	OPEN DISLOCATION OF OTHER PART OF FOOT
8440	SPRAIN OF LATERAL COLLATERAL LIGAMENT OF KNEE
8441	SPRAIN OF MEDIAL COLLATERAL LIGAMENT OF KNEE
8442	SPRAIN OF CRUCIATE LIGAMENT OF KNEE
8443	SPRAIN OF TIBIOFIBULAR (JOINT) (LIGAMENT) SUPERIOR OF KNEE
8448	SPRAIN OF OTHER SPECIFIED SITES OF KNEE AND LEG
8449	SPRAIN OF UNSPECIFIED SITE OF KNEE AND LEG
84500	UNSPECIFIED SITE OF ANKLE SPRAIN
84501	DELTOID (LIGAMENT) ANKLE SPRAIN
84502	CALCANEOFIBULAR (LIGAMENT) ANKLE SPRAIN
84503	TIBIOFIBULAR (LIGAMENT) SPRAIN DISTAL
84509	OTHER ANKLE SPRAIN
84510	UNSPECIFIED SITE OF FOOT SPRAIN
84511	TARSOMETATARSAL (JOINT) (LIGAMENT) SPRAIN
84512	METATARSOPHALANGEAL (JOINT) SPRAIN
84513	INTERPHALANGEAL (JOINT) TOE SPRAIN
84519	OTHER FOOT SPRAIN
8910	OPEN WOUND OF KNEE LEG (EXCEPT THIGH) AND ANKLE WITHOUT COMPLICATION
8911	OPEN WOUND OF KNEE LEG (EXCEPT THIGH) AND ANKLE COMPLICATED
8912	OPEN WOUND OF KNEE LEG (EXCEPT THIGH) AND ANKLE WITH TENDON INVOLVEMENT
8920	OPEN WOUND OF FOOT EXCEPT TOE(S) ALONE WITHOUT COMPLICATION
8921	OPEN WOUND OF FOOT EXCEPT TOE(S) ALONE COMPLICATED
8922	OPEN WOUND OF FOOT EXCEPT TOE(S) ALONE WITH TENDON INVOLVEMENT
8930	OPEN WOUND OF TOE(S) WITHOUT COMPLICATION
8931	OPEN WOUND OF TOE(S) COMPLICATED
8932	OPEN WOUND OF TOE(S) WITH TENDON INVOLVEMENT
8950	TRAUMATIC AMPUTATION OF TOE(S) (COMPLETE) (PARTIAL) WITHOUT COMPLICATION
8951	TRAUMATIC AMPUTATION OF TOE(S) (COMPLETE) (PARTIAL) COMPLICATED
8960	TRAUMATIC AMPUTATION OF FOOT (COMPLETE) (PARTIAL) UNILATERAL WITHOUT COMPLICATION
8961	TRAUMATIC AMPUTATION OF FOOT (COMPLETE) (PARTIAL) UNILATERAL COMPLICATED
8962	TRAUMATIC AMPUTATION OF FOOT (COMPLETE) (PARTIAL) BILATERAL WITHOUT COMPLICATION
8963	TRAUMATIC AMPUTATION OF FOOT (COMPLETE) (PARTIAL) BILATERAL COMPLICATED
8940	MULTIPLE AND UNSPECIFIED OPEN WOUND OF LOWER LIMB WITHOUT COMPLICATION
8941	MULTIPLE AND UNSPECIFIED OPEN WOUND OF LOWER LIMB COMPLICATED
8942	MULTIPLE AND UNSPECIFIED OPEN WOUND OF LOWER LIMB WITH TENDON INVOLVEMENT
8970	TRAUMATIC AMPUTATION OF LEG(S) (COMPLETE) (PARTIAL) UNILATERAL BELOW KNEE WITHOUT COMPLICATION
8971	TRAUMATIC AMPUTATION OF LEG(S) (COMPLETE) (PARTIAL) UNILATERAL BELOW KNEE COMPLICATED
90440	INJURY TO POPLITEAL VESSEL(S) UNSPECIFIED
90441	INJURY TO POPLITEAL ARTERY
90442	INJURY TO POPLITEAL VEIN
90450	INJURY TO TIBIAL VESSEL(S) UNSPECIFIED

90451	INJURY TO ANTERIOR TIBIAL ARTERY
90452	INJURY TO ANTERIOR TIBIAL VEIN
90453	INJURY TO POSTERIOR TIBIAL ARTERY
90454	INJURY TO POSTERIOR TIBIAL VEIN
9046	INJURY TO DEEP PLANTAR BLOOD VESSELS
9170	ABRASION OR FRICTION BURN OF FOOT AND TOE(S) WITHOUT INFECTION
9171	ABRASION OR FRICTION BURN OF FOOT AND TOE(S) INFECTED
9172	BLISTER OF FOOT AND TOE(S) WITHOUT INFECTION
9173	BLISTER OF FOOT AND TOE(S) INFECTED
9176	SUPERFICIAL FOREIGN BODY (SPLINTER) OF FOOT AND TOE(S) WITHOUT MAJOR OPEN WOUND AND WITHOUT INFECTION
9177	SUPERFICIAL FOREIGN BODY (SPLINTER) OF FOOT AND TOE(S) WITHOUT MAJOR OPEN WOUND INFECTED
9178	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF FOOT AND TOES WITHOUT INFECTION
9179	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF FOOT AND TOES INFECTED
92410	CONTUSION OF LOWER LEG
92411	CONTUSION OF KNEE
92420	CONTUSION OF FOOT
92421	CONTUSION OF ANKLE
9243	CONTUSION OF TOE
92810	CRUSHING INJURY OF LOWER LEG
92811	CRUSHING INJURY OF KNEE
92820	CRUSHING INJURY OF FOOT
92821	CRUSHING INJURY OF ANKLE
9283	CRUSHING INJURY OF TOE(S)
9562	INJURY TO POSTERIOR TIBIAL NERVE
9563	INJURY TO PERONEAL NERVE
9564	INJURY TO CUTANEOUS SENSORY NERVE LOWER LIMB
9597	OTHER AND UNSPECIFIED INJURY TO KNEE LEG ANKLE AND FOOT
8974	TRAUMATIC AMPUTATION OF LEG(S) (COMPLETE) (PARTIAL) UNILATERAL LEVEL NOT SPECIFIED WITHOUT COMPLICATION
8975	TRAUMATIC AMPUTATION OF LEG(S) (COMPLETE) (PARTIAL) UNILATERAL LEVEL NOT SPECIFIED COMPLICATED
8976	TRAUMATIC AMPUTATION OF LEG(S) (COMPLETE) (PARTIAL) BILATERAL (ANY LEVEL) WITHOUT COMPLICATION
8977	TRAUMATIC AMPUTATION OF LEG(S) (COMPLETE) (PARTIAL) BILATERAL (ANY LEVEL) COMPLICATED
9047	INJURY TO OTHER SPECIFIED BLOOD VESSELS OF LOWER EXTREMITY
9048	INJURY TO UNSPECIFIED BLOOD VESSEL OF LOWER EXTREMITY
9160	ABRASION OR FRICTION BURN OF HIP THIGH LEG AND ANKLE WITHOUT INFECTION
9161	ABRASION OR FRICTION BURN OF HIP THIGH LEG AND ANKLE INFECTED
9162	BLISTER OF HIP THIGH LEG AND ANKLE WITHOUT INFECTION
9163	BLISTER OF HIP THIGH LEG AND ANKLE INFECTED
9166	SUPERFICIAL FOREIGN BODY (SPLINTER) OF HIP THIGH LEG AND ANKLE WITHOUT MAJOR OPEN WOUND AND WITHOUT INFECTION
9167	SUPERFICIAL FOREIGN BODY (SPLINTER) OF HIP THIGH LEG AND ANKLE WITHOUT MAJOR OPEN WOUND INFECTED
9168	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF HIP THIGH LEG AND ANKLE WITHOUT INFECTION
9169	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF HIP THIGH LEG AND ANKLE INFECTED
9244	CONTUSION OF MULTIPLE SITES OF LOWER LIMB
9245	CONTUSION OF UNSPECIFIED PART OF LOWER LIMB

	9288	CRUSHING INJURY OF MULTIPLE SITES OF LOWER LIMB
	9289	CRUSHING INJURY OF UNSPECIFIED SITE OF LOWER LIMB
	9565	INJURY TO OTHER SPECIFIED NERVE(S) OF PELVIC GIRDLE AND LOWER LIMB
	9568	INJURY TO MULTIPLE NERVES OF PELVIC GIRDLE AND LOWER LIMB
	9569	INJURY TO UNSPECIFIED NERVE OF PELVIC GIRDLE AND LOWER LIMB
	8290	FRACTURE OF UNSPECIFIED BONE CLOSED
	8291	FRACTURE OF UNSPECIFIED BONE OPEN
	9290	CRUSHING INJURY OF MULTIPLE SITES NOT ELSEWHERE CLASSIFIED
	9299	CRUSHING INJURY OF UNSPECIFIED SITE
	8398	CLOSED DISLOCATION MULTIPLE AND ILL-DEFINED SITES
	8399	OPEN DISLOCATION MULTIPLE AND ILL-DEFINED SITES
	8488	OTHER SPECIFIED SITES OF SPRAINS AND STRAINS
	8489	UNSPECIFIED SITE OF SPRAIN AND STRAIN
	8798	OPEN WOUND(S) (MULTIPLE) OF UNSPECIFIED SITE(S) WITHOUT COMPLICATI
	8799	OPEN WOUND(S) (MULTIPLE) OF UNSPECIFIED SITE(S) COMPLICATED
	83969	CLOSED DISLOCATION OTHER LOCATION
	83979	OPEN DISLOCATION OTHER LOCATION
Other Injury	9049	INJURY TO BLOOD VESSELS OF UNSPECIFIED SITE
	9190	ABRASION OR FRICTION BURN OF OTHER MULTIPLE AND UNSPECIFIED SITES WITHOUT INFECTION
	9191	ABRASION OR FRICTION BURN OF OTHER MULTIPLE AND UNSPECIFIED SITES INFECTED
	9192	BLISTER OF OTHER MULTIPLE AND UNSPECIFIED SITES WITHOUT INFECTION
	9193	BLISTER OF OTHER MULTIPLE AND UNSPECIFIED SITES INFECTED
	9196	SUPERFICIAL FOREIGN BODY (SPLINTER) OF OTHER MULTIPLE AND UNSPECIFIED SITES WITHOUT MAJOR OPEN WOUND WITHOUT INFECTION
	9197	SUPERFICIAL FOREIGN BODY (SPLINTER) OF OTHER MULTIPLE AND UNSPECIFIED SITES WITHOUT MAJOR OPEN WOUND INFECTED
	9198	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF OTHER MULTIPLE AND UNSPECIFIED SITES WITHOUT INFECTION
	9199	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF OTHER MULTIPLE AND UNSPECIFIED SITES INFECTED
	9248	CONTUSION OF MULTIPLE SITES NOT ELSEWHERE CLASSIFIED
	9249	CONTUSION OF UNSPECIFIED SITE
	9578	INJURY TO MULTIPLE NERVES IN SEVERAL PARTS
	9579	INJURY TO NERVES UNSPECIFIED SITE
	9598	OTHER AND UNSPECIFIED INJURY TO OTHER SPECIFIED SITES INCLUDING MULTIPLE
	9599	OTHER AND UNSPECIFIED INJURY TO UNSPECIFIED SITE
Genital Injury	8770	OPEN WOUND OF BUTTOCK WITHOUT COMPLICATION
	8771	OPEN WOUND OF BUTTOCK COMPLICATED
	8780	OPEN WOUND OF PENIS WITHOUT COMPLICATION
	8781	OPEN WOUND OF PENIS COMPLICATED
	8782	OPEN WOUND OF SCROTUM AND TESTES WITHOUT COMPLICATION
	8783	OPEN WOUND OF SCROTUM AND TESTES COMPLICATED
	8784	OPEN WOUND OF VULVA WITHOUT COMPLICATION
	8785	OPEN WOUND OF VULVA COMPLICATED
	8788	OPEN WOUND OF OTHER AND UNSPECIFIED PARTS OF GENITAL ORGANS WITHOUT COMPLICATION
	8789	OPEN WOUND OF OTHER AND UNSPECIFIED PARTS OF GENITAL ORGANS COMPLICATED

	95913	FRACTURE OF CORPUS CAVERNOSUM PENIS
	95914	OTHER INJURY OF EXTERNAL GENITALS

Appendix 2: Abbreviated Injury Score.

AIS-Code	Injury Severity
1	Minor
2	Moderate
3	Serious
4	Severe
5	Critical
6	Fatal

References

1. National Trauma Institute. National Trauma Institute Statistics (Updated Feb 2014). Web Site: http://www.nationaltraumainstitute.org/home/trauma_statistics.htmlData. Accessed 04/04/2016.
2. Center for Disease Control and Prevention. National Center for Health Statistics: All Injuries. Web Site: http://ftp.cdc.gov/pub/Health_Statistics/NCHS/NHIS/SHS/2014_SHS_Table_P-5.pdf. Accessed 04/05/16.
3. MacKenzie EJ, Morris JA, Jr., Smith GS, Fahey M. Acute hospital costs of trauma in the United States: implications for regionalized systems of care. *The Journal of trauma* 1990;30:1096-101; discussion 101-3.
4. Clement ND, Tennant C, Muwanga C. Polytrauma in the elderly: predictors of the cause and time of death. *Scandinavian journal of trauma, resuscitation and emergency medicine* 2010;18:26.
5. Shifflette VK, Lorenzo M, Mangram AJ, Truitt MS, Amos JD, Dunn EL. Should age be a factor to change from a level II to a level I trauma activation? *The Journal of trauma* 2010;69:88-92.
6. Spaniolas K, Cheng JD, Gestring ML, Sangosanya A, Stassen NA, Bankey PE. Ground level falls are associated with significant mortality in elderly patients. *The Journal of trauma* 2010;69:821-5.
7. Morris JA, Jr., MacKenzie EJ, Damiano AM, Bass SM. Mortality in trauma patients: the interaction between host factors and severity. *The Journal of trauma* 1990;30:1476-82.
8. Gubler KD, Davis R, Koepsell T, Soderberg R, Maier RV, Rivara FP. Long-term survival of elderly trauma patients. *Archives of surgery* 1997;132:1010-4.
9. Taylor MD, Tracy JK, Meyer W, Pasquale M, Napolitano LM. Trauma in the elderly: intensive care unit resource use and outcome. *The Journal of trauma* 2002;53:407-14.
10. Baker CC, Oppenheimer L, Stephens B, Lewis FR, Trunkey DD. Epidemiology of trauma deaths. *American journal of surgery* 1980;140:144-50.
11. Santry HP, Psoinos CM, Wilbert CJ, et al. Quadrimodal distribution of death after trauma suggests that critical injury is a potentially terminal disease. *Journal of critical care* 2015;30:656 e1-7.

12. MacKenzie EJ, Rivara FP, Jurkovich GJ, et al. A national evaluation of the effect of trauma-center care on mortality. *The New England journal of medicine* 2006;354:366-78.
13. Nathens AB, Jurkovich GJ, Rivara FP, Maier RV. Effectiveness of state trauma systems in reducing injury-related mortality: a national evaluation. *The Journal of trauma* 2000;48:25-30; discussion -1.
14. Celso B, Tepas J, Languard-Orban B, et al. A systematic review and meta-analysis comparing outcome of severely injured patients treated in trauma centers following the establishment of trauma systems. *The Journal of trauma* 2006;60:371-8; discussion 8.
15. West JG, Trunkey DD, Lim RC. Systems of trauma care. A study of two counties. *Archives of surgery* 1979;114:455-60.
16. Crimmins EM. Trends in the health of the elderly. *Annual review of public health* 2004;25:79-98.
17. Beilman GJ, Taylor JH, Job L, Moen J, Gullickson A. Population-based prediction of trauma volumes at a Level 1 trauma centre. *Injury* 2004;35:1239-47.
18. Elixhauser A, Steiner C, Harris DR, Coffey RM. Comorbidity measures for use with administrative data. *Medical care* 1998;36:8-27.
19. States JD. The Abbreviated and the Comprehensive Research Injury Scales. *STAPP Car Crash Journal*, Society of Automotive Engineers 1969.
20. MacKenzie EJ, Shapiro S, Eastham JN. The Abbreviated Injury Scale and Injury Severity Score. Levels of inter- and intrarater reliability. *Medical care* 1985;23:823-35.
21. Partyka SC. A Comparison of AIS and ISS Predictions of Fatality on NCSS. *Proc Am Assoc Autom Med Annu Conf.* (1980) 24:156-169.
22. Baker SP, O'Neill B, Haddon W, Jr., Long WB. The injury severity score: a method for describing patients with multiple injuries and evaluating emergency care. *The Journal of trauma* 1974;14:187-96.
23. Shabot MM, Johnson CL. Outcome from critical care in the "oldest old" trauma patients. *The Journal of trauma* 1995;39:254-9; discussion 9-60.
24. Santora TA, Schinco MA, Trooskin SZ. Management of trauma in the elderly patient. *The Surgical clinics of North America* 1994;74:163-86.

25. Hazzard WR, Applebaum-Bowden D. Why women live longer than men: the biologic mechanism of the sex differential in longevity. *Transactions of the American Clinical and Climatological Association* 1990;101:168-88; discussion 88-9.
26. Milzman DP, Boulanger BR, Rodriguez A, Soderstrom CA, Mitchell KA, Magnant CM. Pre-existing disease in trauma patients: a predictor of fate independent of age and injury severity score. *The Journal of trauma* 1992;32:236-43; discussion 43-4.
27. Battistella FD, Din AM, Perez L. Trauma patients 75 years and older: long-term follow-up results justify aggressive management. *The Journal of trauma* 1998;44:618-23; discussion 23.
28. Labib N, Nouh T, Winocour S, et al. Severely injured geriatric population: morbidity, mortality, and risk factors. *The Journal of trauma* 2011;71:1908-14.
29. Strnad M, Lesjak VB, Vujanovic V, Pelcl T, Krizmaric M. Predictors of mortality and prehospital monitoring limitations in blunt trauma patients. *BioMed research international* 2015;2015:983409.
30. O'Neill S, Brady RR, Kerssens JJ, Parks RW. Mortality associated with traumatic injuries in the elderly: a population based study. *Archives of gerontology and geriatrics* 2012;54:e426-30.
31. Ganz DA, Bao Y, Shekelle PG, Rubenstein LZ. Will my patient fall? *Jama* 2007;297:77-86.
32. Richmond TS, Kauder D, Strumpf N, Meredith T. Characteristics and outcomes of serious traumatic injury in older adults. *Journal of the American Geriatrics Society* 2002;50:215-22.
33. Merriam-Webster Online Dictionary. Skilled Nursing Facility. Web Site [http://www.merriam-webster.com/medical/skilled nursing facility](http://www.merriam-webster.com/medical/skilled%20nursing%20facility). Accessed 06/02/2016.
34. Caplan GA, Brown A, Croker WD, Doolan J. Risk of admission within 4 weeks of discharge of elderly patients from the emergency department--the DEED study. *Discharge of elderly from emergency department. Age and ageing* 1998;27:697-702.
35. American College of Surgeons. Trauma Quality Improvement Program. Web Site: <https://http://www.facs.org/quality-programs/trauma/tqip>. Accessed: 06/02/2016.

36. Center for Disease Control and Prevention. Home and Recreational Safety in Older Adults (Updated Jan 2016). Web Site: <http://www.cdc.gov/HomeandRecreationalSafety/Falls/adultfalls.html>. Accessed 04/05/2016.
37. Medicare Payment Advisory Commission. A Data Book: Medicare Part D Program. Washington: 2010.