

Emergency Department Data Surveillance
(EDDS) Project

Six Month Patient Summary
Brief Report

**January 1, 2008
Through
June 30, 2008**

**San Diego County
February 2009**

Introduction

The Community Health Improvement Partner's Violence and Injury Prevention Work Team, in collaboration with the County of San Diego's Emergency Medical Services (EMS) and the Hospital Association of San Diego and Imperial Counties (HASD&IC) conceptualized and coordinated the implementation of the Emergency Department Data Surveillance project.

The Emergency Department Discharge Database describes all patients who are treated and discharged from participating emergency departments in San Diego County. Emergency department (ED) discharge data, however, do not represent all patients who go to the emergency department. Patients who were admitted to the hospital from the ED are not included. The information contained in this database is collected from billing data, so if a patient presents to the ED and is admitted to that same hospital, all information is transferred to the inpatient record and the patient becomes part of the hospital discharge database. In 2007, 17% of all patients who presented to a San Diego County emergency department were admitted to that hospital.

ED data that are reported to Emergency Medical Services (EMS) do not contain unique identifiers, such as social security number. Each record represents a single visit to the ED, and multiple visits by the same person cannot be identified. Therefore, this database represents the number of *visits*, not the number of *people* who use the ED.

The Emergency Department Data Six Month Summary Report presents selected variables to describe total patient volume by month and day of week. This report also describes principal diagnoses, injuries and expected source of payment of patients during this time period. A more detailed description of patient demographics and other characteristics of ED discharges is presented in an annual aggregate report.

Sixteen of eighteen civilian hospitals voluntarily reported ED data from January 1, 2008 through June 30, 2008, representing more than 97% of all ED discharges.

The following data elements are reported to the hospital association: Facility ID Number, Patient ZIP code, Date of Birth, Sex, Race, Ethnicity, Service Date, Principal Diagnosis (ICD-9-CM), 24 Other Diagnoses (ICD-9-CM), Principal Procedure (CPT-4), 20 Other Procedures (CPT-4), Principal E-Code (ICD-9 E-Code), 4 Other E-Codes (ICD-9 E-Code), Disposition of Patient and Expected Source of Payment.

Volume by Month

From January 1, 2008 through June 30, 2008 there were 313,593 patients treated and discharged from a San Diego County emergency department; an average of 1,723 per day. February was the busiest month, with an average of 1,810 patients discharged per day.

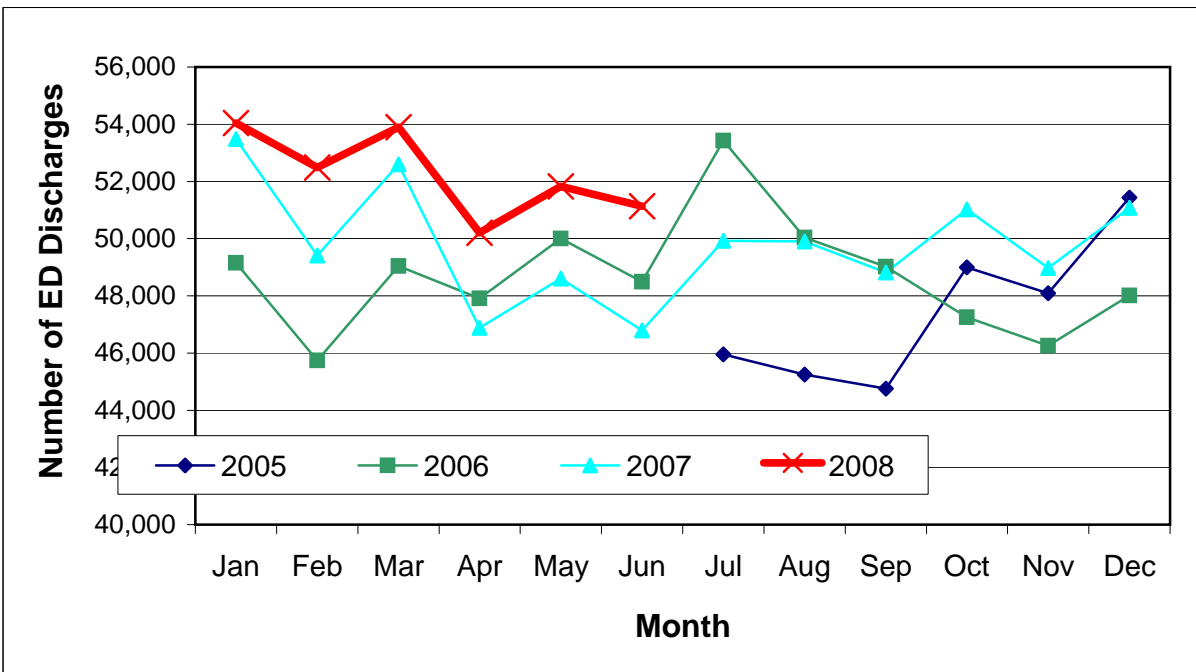
Total Number of ED Discharges and Average Number of ED Discharges per Day by Month, San Diego County, January - June 2008

	Number	Per Day
January	54,043	1,743
February	52,488	1,810
March	53,902	1,739
April	50,200	1,673
May	51,822	1,672
June	51,138	1,705
Total	313,593	1,723

Source: HASD&IC, CHIP, CoSD HHS A PHS EMS, ED database, January 2008 - June 2008.

The total number of ED discharges for the first six months of 2008 increased over the same time period in 2007 by 5.3%.

Total Number of ED Discharges by Month and Year, San Diego County, July 2005 - June 2008



Source: HASD&IC, CHIP, CoSD HHS A PHS EMS, ED database, July 2005 - June 2008.

Volume by Day of the Week

Sundays were the busiest day of the week for San Diego County EDs, with an average of 1,807 discharges per day.

Total Number of ED Discharges and Average Number of ED Discharges per Day by Day of Week, San Diego County, January - June 2008

	Number	Per Day
Sunday	46,989	1,807
Monday	45,892	1,765
Tuesday	44,584	1,715
Wednesday	43,509	1,673
Thursday	42,787	1,646
Friday	43,459	1,672
Saturday	46,373	1,784
Total	313,593	1,723

Source: HASD&IC, CHIP, CoSD HHSa PHS EMS, ED database,
January 2008 - June 2008.

Patients Leaving Against Medical Advice

During this time period, 12,189 patients (3.9%) left the emergency department against medical advice (AMA). The percent of patients leaving AMA was highest during the month of February (5.0%).

Total Number, Percent of ED Discharges and Number per Day Leaving Against Medical Advice, San Diego County, January - June 2008

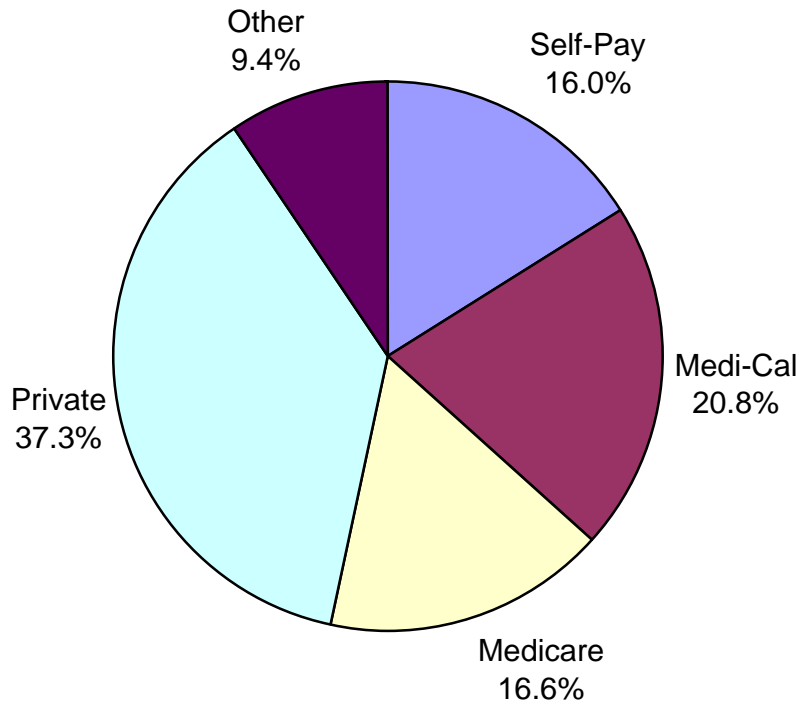
	Total Number	Percent of Total	Average Number Per Day
January	1,953	3.6%	63
February	2,625	5.0%	91
March	2,194	4.1%	71
April	1,841	3.7%	61
May	1,795	3.5%	58
June	1,781	3.5%	59
Total	12,189	3.9%	67

Source: HASD&IC, CHIP, CoSD HHSa PHS EMS, ED database,
January 2008 - June 2008.

Expected Source of Payment

More than one-third (37%) of all ED discharges were privately insured. Twenty-one percent were covered by Medi-Cal and 16% were self-pay.

**Percent of ED Discharges by Expected Source of Payment,
San Diego County, January - June 2008**



Source: HASD&IC, CHIP, CoSD HHS A PHS EMS, ED database, January 2008 - June 2008.

The percent of ED discharges who were self-pay varied slightly by month. In January, 14.3% were self-pay, compared to 17.8% in June.

**Number and Percent of Self-Pay ED
Discharges by Month, San Diego County,
January - June 2008**

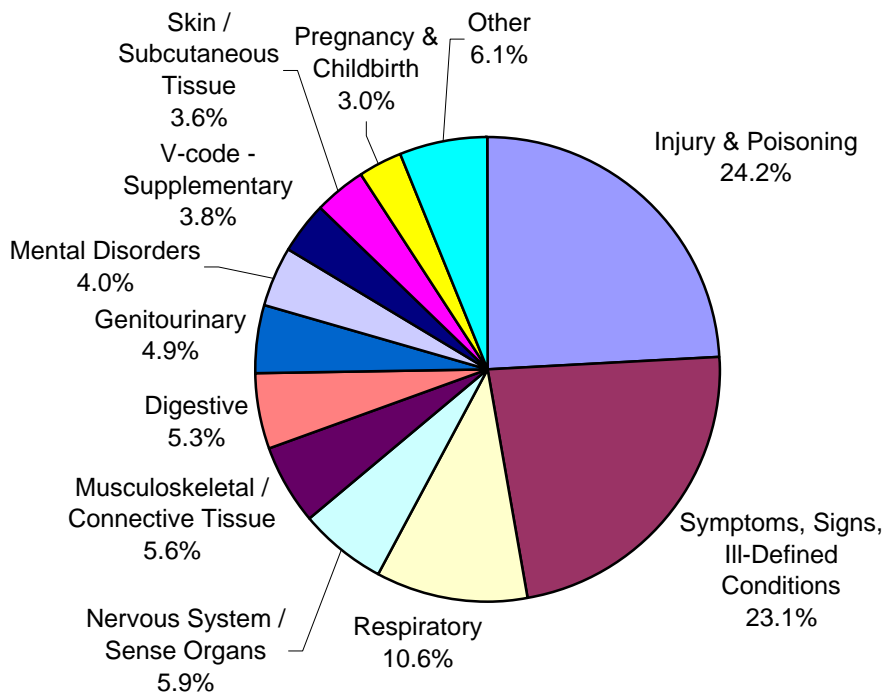
	Number	Percent
January	7,585	14.3%
February	7,881	15.3%
March	8,505	16.1%
April	8,162	16.3%
May	8,572	16.5%
June	9,099	17.8%
Total	49,804	16.0%

Source: HASD&IC, CHIP, CoSD HHS A PHS EMS, ED database, January 2008 - June 2008.

Principal Diagnoses

The patient's principal diagnosis is defined as the condition, problem, or other reason established to be the chief cause of the encounter for care, and is coded according to the ICD-9-CM. Nearly half of all patients were discharged from the ED with a principal diagnosis of either injury and poisoning (24%) or symptoms, signs and ill-defined conditions (23%). On average during this six month period, almost 11% of patients were discharged with a respiratory disease diagnosis. However, the percent of all diagnoses that were respiratory diseases ranged from 15% in February to 6.5% in June. See the Appendix beginning on page 11 for a description of diagnosis categories.

**Percent of ED Discharges by Principal Diagnosis Category,
San Diego County, January - June 2008**



Source: HASD&IC, CHIP, CoSD HHSA PHS EMS, ED database, January 2008 - June 2008.

The ten most common principal diagnoses are presented below by month. For January through March, acute respiratory infections were the most common principal diagnosis, accounting for between 6.1% and 7.8% of all ED discharges. Pneumonia and influenza accounted for another 2.7% of all diagnoses in February. By April, acute respiratory infections dropped to the fifth most common diagnosis.

**Ten Most Common Principal Diagnoses,
San Diego County, January 2008**

Principal Diagnosis	Number	Percent
460-466 ACUTE RESPIRATORY INFECTIONS	3,953	7.3%
786 RESPIRATORY SYMPTOMS	2,982	5.5%
780 GENERAL SYMPTOMS	2,858	5.3%
789 ABDOMINAL SYMPTOMS	2,727	5.0%
840-848 SPRAINS & STRAINS, JOINTS & MUSC	2,068	3.8%
490-496 COPD AND ALLIED CONDITIONS	1,907	3.5%
920-924 CONTUSION WITH INTACT SKIN	1,657	3.1%
590-599 OTHER DISEASES OF URINARY	1,631	3.0%
380-389 DISEASES OF EAR AND MASTOID	1,432	2.6%
720-724 DORSOPATHIES	1,406	2.6%

Source: HASD&IC, CHIP, CoSD HHS A PHS EMS, ED database, January 2008 - June 2008.

**Ten Most Common Principal Diagnoses,
San Diego County, February 2008**

Principal Diagnosis	Number	Percent
460-466 ACUTE RESPIRATORY INFECTIONS	4,096	7.8%
786 RESPIRATORY SYMPTOMS	2,949	5.6%
780 GENERAL SYMPTOMS	2,885	5.5%
789 ABDOMINAL SYMPTOMS	2,456	4.7%
490-496 COPD AND ALLIED CONDITIONS	2,021	3.9%
840-848 SPRAINS & STRAINS, JOINTS & MUSC	1,936	3.7%
380-389 DISEASES OF EAR AND MASTOID	1,644	3.1%
920-924 CONTUSION WITH INTACT SKIN	1,572	3.0%
590-599 OTHER DISEASES OF URINARY	1,520	2.9%
480-487 PNEUMONIA AND INFLUENZA	1,408	2.7%

Source: HASD&IC, CHIP, CoSD HHS A PHS EMS, ED database, January 2008 - June 2008.

**Ten Most Common Principal Diagnoses,
San Diego County, March 2008**

Principal Diagnosis	Number	Percent
460-466 ACUTE RESPIRATORY INFECTIONS	3,284	6.1%
786 RESPIRATORY SYMPTOMS	2,815	5.2%
780 GENERAL SYMPTOMS	2,743	5.1%
789 ABDOMINAL SYMPTOMS	2,636	4.9%
840-848 SPRAINS & STRAINS, JOINTS & MUSC	2,288	4.2%
920-924 CONTUSION WITH INTACT SKIN	1,840	3.4%
490-496 COPD AND ALLIED CONDITIONS	1,740	3.2%
590-599 OTHER DISEASES OF URINARY	1,650	3.1%
870-879 OPEN WOUND OF HEAD, NECK, TRUNK	1,552	2.9%
300-316 NEUROTIC, PERSONALITY, OTHER	1,510	2.8%

Source: HASD&IC, CHIP, CoSD HHS A PHS EMS, ED database, January 2008 - June 2008.

**Ten Most Common Principal Diagnoses,
San Diego County, April 2008**

Principal Diagnosis	Number	Percent
789 ABDOMINAL SYMPTOMS	2,760	5.5%
780 GENERAL SYMPTOMS	2,747	5.5%
786 RESPIRATORY SYMPTOMS	2,691	5.4%
840-848 SPRAINS & STRAINS, JOINTS & MUSC	2,276	4.5%
460-466 ACUTE RESPIRATORY INFECTIONS	2,242	4.5%
920-924 CONTUSION WITH INTACT SKIN	1,866	3.7%
590-599 OTHER DISEASES OF URINARY	1,624	3.2%
300-316 NEUROTIC, PERSONALITY, OTHER	1,555	3.1%
870-879 OPEN WOUND OF HEAD, NECK, TRUNK	1,432	2.9%
720-724 DORSOPATHIES	1,380	2.7%

Source: HASD&IC, CHIP, CoSD HHSA PHS EMS, ED database, January 2008 - June 2008.

**Ten Most Common Principal Diagnoses,
San Diego County, May 2008**

Principal Diagnosis	Number	Percent
780 GENERAL SYMPTOMS	2,852	5.5%
789 ABDOMINAL SYMPTOMS	2,836	5.5%
786 RESPIRATORY SYMPTOMS	2,571	5.0%
840-848 SPRAINS & STRAINS, JOINTS & MUSC	2,333	4.5%
460-466 ACUTE RESPIRATORY INFECTIONS	1,953	3.8%
920-924 CONTUSION WITH INTACT SKIN	1,933	3.7%
590-599 OTHER DISEASES OF URINARY	1,716	3.3%
300-316 NEUROTIC, PERSONALITY, OTHER	1,595	3.1%
870-879 OPEN WOUND OF HEAD, NECK, TRUNK	1,530	3.0%
720-724 DORSOPATHIES	1,452	2.8%

Source: HASD&IC, CHIP, CoSD HHSA PHS EMS, ED database, January 2008 - June 2008.

**Ten Most Common Principal Diagnoses,
San Diego County, June 2008**

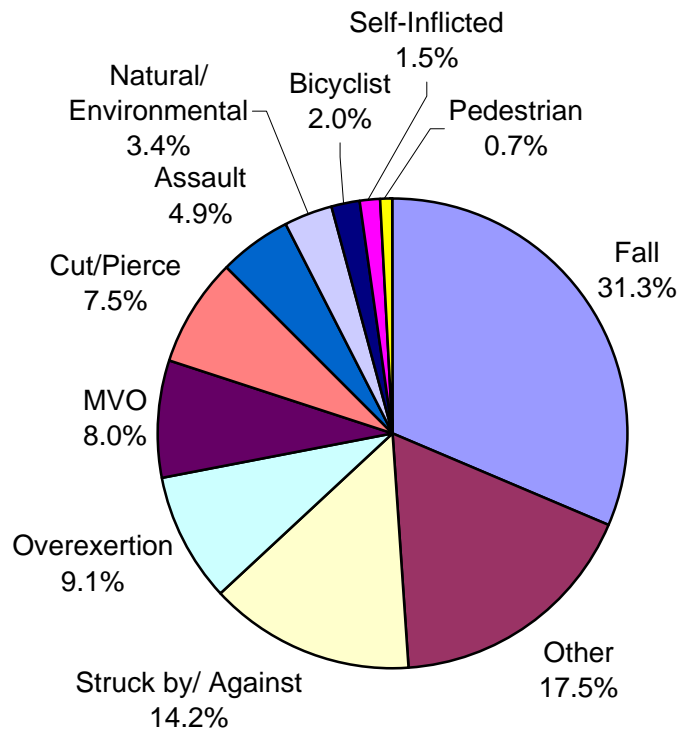
Principal Diagnosis	Number	Percent
786 RESPIRATORY SYMPTOMS	2,796	5.5%
789 ABDOMINAL SYMPTOMS	2,794	5.5%
780 GENERAL SYMPTOMS	2,794	5.5%
840-848 SPRAINS & STRAINS, JOINTS & MUSC	2,145	4.2%
920-924 CONTUSION WITH INTACT SKIN	1,847	3.6%
590-599 OTHER DISEASES OF URINARY	1,749	3.4%
460-466 ACUTE RESPIRATORY INFECTIONS	1,742	3.4%
870-879 OPEN WOUND OF HEAD, NECK, TRUNK	1,668	3.3%
300-316 NEUROTIC, PERSONALITY, OTHER	1,613	3.2%
720-724 DORSOPATHIES	1,345	2.6%

Source: HASD&IC, CHIP, CoSD HHSA PHS EMS, ED database, January 2008 - June 2008.

Principal Mechanism of Injury

Mechanism of injury, or how an injury occurred, is identified using the ICD-9-CM External Cause of Injury Codes (E-Codes). During the first six months of 2008, a principal mechanism of injury was reported for 78,499 ED discharges (25%). Of all injuries, nearly one-third (31%) were due to a fall, 14% were due to being unintentionally struck by an object or person, and 9% were due to overexertion.

Percent of ED Discharges by Principal Mechanism of Injury Category, San Diego County, January - June 2008



Source: HASD&IC, CHIP, CoSD HHSA PHS EMS, ED database, January 2008 - June 2008.

The fifteen most common mechanisms of injury are displayed in the table below. There was little variation by month, so results are described for the entire six month period. The single most common mechanism of injury was a fall due to tripping and stumbling (10%) followed by an accident due to overexertion (9%) and being unintentionally struck by an object or person, not in sports (6%).

**Fifteen Most Common Mechanisms of Injury,
San Diego County, January - June 2008**

Principal Diagnosis	Number	Percent
Fall Due to Tripping Stumbling	7,564	9.6%
Accident from Overexertion	7,130	9.1%
Uninten. Struck by Object/Person, Not in Sports	4,659	5.9%
Unspecified Fall	4,266	5.4%
Accident from a Cutting Instrument	3,308	4.2%
Unspecified Accident	3,212	4.1%
Motor Vehicle Collision - Unspecified Driver	3,160	4.0%
Struck in Sports w/out Fall	2,711	3.5%
Fall Against Other Object	2,423	3.1%
Unarmed Fight or Brawl	2,028	2.6%
Other Fall	1,602	2.0%
Fall on Stairs/Steps Other	1,497	1.9%
Accident Other	1,492	1.9%
Fall From One Level to Another	1,486	1.9%
Motor Vehicle Collision - Unspecified Passenger	1,474	1.9%

Source: HASD&IC, CHIP, CoSD HHSA PHS EMS, ED database, January 2008 - June 2008.

Appendix
Diagnosis and Injury Category Descriptions

Principal Diagnosis Categories

Blood and Blood Forming Organs – Anemias (not as a complication of pregnancy), coagulation defects, diseases of white blood cells, and other diseases of the blood and blood-forming organs.

Circulatory – Includes rheumatic fever, rheumatic heart disease, hypertensive disease, ischemic heart disease, diseases of pulmonary circulation, other forms of heart disease, cerebrovascular disease, and diseases of veins and lymphatics.

Complications of Pregnancy, Childbirth and the Puerperium – includes complications related to pregnancy, labor and delivery, and complications of the period after childbirth.

Congenital Anomalies – Includes congenital anomalies affecting all body regions.

Conditions in the Perinatal Period – Includes conditions which have their origin in the perinatal period even though death or morbidity occurs later.

Digestive – includes diseases of the oral cavity, salivary glands, and jaws, diseases of the esophagus, stomach, and duodenum, appendicitis, hernia of the abdominal cavity, noninfectious enteritis and colitis, and other diseases of the intestines, peritoneum, and digestive system.

Endocrine, Nutrition & Metabolic Diseases – Includes disorders of the thyroid and other endocrine glands, nutritional deficiencies, diabetes mellitus, and metabolic and immunity disorders.

Genitourinary – includes nephritis, nephritic syndrome, and nephrosis, other diseases of the urinary system, diseases of male genital organs and female pelvic organs, disorders of the breast, and disorders of the female genital tract.

Infectious and Parasitic Diseases – Includes diseases generally recognized as communicable or transmissible as well as a few diseases of unknown but possibly infectious origin. Includes intestinal infectious diseases, zoonotic and other bacterial diseases, HIV, polio and other viral diseases of the central nervous system, other viral diseases, including arthropod-borne diseases, chlamydiae and hepatitis, rickettsioses, syphilis and other venereal diseases, other spirochetal diseases, mycoses, helminthiases, and other infectious and parasitic diseases.

Injury and Poisoning – includes fractures, dislocation, sprains and strains, intracranial injury, internal injury, open wounds, hematoma, lacerations, late effects of injury and poisoning, superficial injury, contusions, crushing injury, foreign bodies, traumatic complications of injury, poisoning, and complications of surgical or medical care.

Mental Disorders – includes psychoses, neurotic disorders, personality disorders, and other nonpsychotic mental disorders.

Musculoskeletal/Connective Tissue – Includes arthropathies (arthritis) and related disorders, dorsopathies (back), rheumatism (excluding the back), osteopathies, chondropathies, and acquired musculoskeletal deformities.

Neoplasms – Includes primary and secondary malignant neoplasms, benign neoplasms, carcinoma in situ, and neoplasm of uncertain behavior or unspecified nature.

Nervous System, Sense Organs – includes inflammatory diseases of the central nervous system (CNS), hereditary and degenerative diseases of the CNS, disorders of the peripheral nervous system,

Respiratory – includes acute respiratory infections, diseases of the upper respiratory tract, pneumonia and influenza, COPD, lung disease due to external agents, and other diseases of the respiratory system.

Skin/Subcutaneous Tissue – includes infections of skin and subcutaneous tissue, and inflammatory conditions of skin and subcutaneous tissue.

Symptoms, Signs, Ill-Defined Conditions – includes symptoms, signs, abnormal results of laboratory or other investigative procedures, and ill-defined conditions with no diagnosis classifiable elsewhere. These symptoms are generically classified as “respiratory symptoms,” “abdominal symptoms,” “general symptoms,” etc..

V-Code Supplementary – Circumstances other than a disease or injury, such as a person who is not currently sick donating an organ or blood, a person with a known disease encountering the system for specific treatment (dialysis, chemotherapy, cast change), or when a problem is present which influences the person’s health status but is not in itself a current illness or injury.

Common Diagnoses

Abdominal symptoms refer to abdominal tenderness or pain, which is otherwise unclassifiable.

Acute respiratory infections include the common cold, sore throat, tonsillitis, laryngitis, and acute bronchitis.

Arthropathies and related disorders refer to arthritis related problems.

COPD and allied health conditions include asthma, chronic bronchitis, emphysema, and other chronic obstructive lung diseases.

Contusion with intact skin surface includes a bruise or hematoma without fracture or open wound.

Dorsopathies refer to disorders of the back and cervical region.

Diseases of the ear and mastoid process include otitis media, otitis externa, mastoiditis, and hearing loss.

General symptoms include altered consciousness, hallucinations, syncope, convulsions, dizziness, sleep disturbances, fever, and general malaise and fatigue.

Head and neck symptoms are diagnosed for general headache, neck pain, swelling, or voice and speech disturbances.

Infections of skin and subcutaneous tissue include boils, cellulitis and abscesses, cysts, and other local infections of the skin.

Neurotic, personality, other includes all neurotic disorders, personality disorders and other nonpsychotic mental disorders, such as anxiety, dissociative disorders, alcohol or drug dependence, nondependent abuse of drugs, physiological malfunction, adjustment reaction and developmental

Respiratory symptoms represent undiagnosed respiratory abnormalities, including hyperventilation, apnea, shortness of breath, wheezing, cough, painful respiration, and other discomfort in the chest.

Sprains and strains of joints and muscles include avulsion, hemarthrosis, laceration, rupture, sprain, strain or tear of the joint capsule, ligament, muscle or tendon.

Other diseases of the urinary system were mainly kidney stones, kidney infections, urinary tract infections and cystitis.

Principal Mechanism of Injury Categories

Assaults – All injuries or homicide purposely inflicted by another person with intent to injure or kill, by any means. Includes fights, brawls, and rape; poisoning; hanging and strangulation; submersion; firearms and explosives; cutting and piercing instruments; battering and maltreatment; and assault by other and unspecified means.

Bicycle – Accident involving a person riding any road transport vehicle operated solely by pedals, including a bicycle, pedalcycle, or tricycle. Includes all accidents involving the pedalcyclist, with or without other vehicular involvement.

Cut/Pierce – Includes all unintentional injuries caused by cutting and piercing instruments or objects.

Falls – Includes all falls from stairs or steps; falls from ladders or scaffolding; falls from or out of a building or other structure; fall into a hole or other opening in a surface, including swimming pools; other fall from one level to another; fall on the same level from slipping, tripping or stumbling; fall on the same level from collision, pushing, or shoving; falls in sports; other and unspecified falls.

Motor Vehicle Occupant (MVO) – Driver or passenger of motor vehicle involved in an accident occurring on a public highway or street.

Natural/Environmental includes excessive heat or cold; changes in pressure; travel and motion; hunger, thirst, and neglect; venomous animals and plants as the cause of poisoning; animal bites; injuries resulting from storms; and other unspecified environmental causes.

Other – Includes unintentional: misadventures to patients during surgical and medical care; accidents caused by fire and flames; accidents caused by submersion, suffocation, and foreign bodies; caught between objects; accidents involving machinery; injuries caused by explosives or firearms; accidents caused by hot substances, steam, caustic material, electric currents, exposure to radiation; other vehicle accidents involving railways, motorcycles, streetcars, animals; non-traffic accidents such as vehicle breakage, boarding or alighting; accidents involving aircraft; accidental poisonings by drugs, medicinal substances and biologicals; accidental poisoning by other substances; other unspecified accidental causes; late effects of injury not involving a motor vehicle; injury due to war; and injury due to legal intervention. Excludes adverse effects of drugs, medicinal or biological substances in therapeutic use.

Overexertion – Includes all injuries due to overexertion and strenuous movements, such as excessive physical exercise, overexertion from lifting, pulling, or pushing, and strenuous movements in other activities.

Pedestrian – Any person involved in a motor vehicle accident who was not at the time of the accident riding in or on a motor vehicle, bicycle, animal, or other vehicle. Includes persons changing the tire of a vehicle, making adjustments to a motor vehicle, or on foot.

Struck by Objects/Person – Includes injuries due to the person being struck accidentally by a falling object or by striking against or struck accidentally by objects or persons.

Suicide and Self-Inflicted Injury – All injuries as the result of suicide or attempted suicide, as well as intentional self-inflicted injuries. Mechanisms include poisoning; hanging, strangulation and suffocation; submersion; firearms and explosives; cutting and piercing instruments; jumping from a high place; and other and unspecified means.

For More Information

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