

Hospitalizations Among Members of the Active Component, U.S. Armed Forces, 2011

This report documents the frequencies, rates, trends, and distributions of hospitalizations of active component members of the U.S. Armed Forces during calendar year 2011. Summaries are based on standardized records of hospitalizations at U.S. military and non-military (reimbursed care) medical facilities worldwide. For this report, primary (first-listed) discharge diagnoses are considered indicative of the primary reasons for hospitalizations; summaries are based on the first three digits of ICD-9-CM codes used to report primary discharge diagnoses. Hospitalizations not routinely documented with standardized, automated records (e.g., during deployments, field training exercises, shipboard) are not centrally available for health surveillance purposes and thus are not included in this report.

Frequencies, rates, and trends:

In 2011 there were 99,412 reports of hospitalizations of active component

members of the U.S. Army, Navy, Air Force, Marine Corps, and Coast Guard; 27 percent of the hospitalizations were in non-military facilities (Table 1, Figure 1). The hospitalization rate (all causes) was 68.2 per 1,000 service members per year. The annual hospitalization rate (all causes) was higher during 2011 compared to the previous years (overall hospitalization rate minimum: 54.9 per 1,000 person-years [p-yrs], 2006; maximum: 68.2 per 1,000 p-yrs, 2011) (Figure 1).

Hospitalizations, by illness and injury categories:

As in prior years, in 2011 three diagnostic categories accounted for more than one-half (54.5%) of all hospitalizations of active component members: mental disorders (21.9%), pregnancy and delivery-related conditions (19.8%), and injuries and poisonings (12.8%) (Table 1). In contrast to 2007 and 2009, in 2011 there were more hospitalizations for mental disorders than for any other major category of illnesses or injuries (per the ICD-9-CM).

From 2007 to 2011, numbers of hospitalizations increased in 15 and decreased in two major categories of illnesses and injuries. The largest percentage increases between 2007 and 2011 were for “other” or V-coded hospitalizations (primarily orthopedic aftercare and rehabilitation following a previous illness or injury) (hosp diff, 2007-2011: +1,592; +66.3%) and for mental disorders (hosp diff, 2007-2011: +7,623; +54.0%). The only percentage decreases during the same period were for the skin and subcutaneous tissue (hosp diff, 2007-2011: -171; -7.3%) and injury and poisoning (hosp diff, 2007-2011: -354; -2.7%) categories (Table 1).

Hospitalizations, by gender:

In 2011, the hospitalization rate (all causes) was more than two times higher among females than males (hospitalization rate, overall: females: 162.0 per 1,000 p-yrs; males: 52.3 per 1,000 p-yrs); however, pregnancy and delivery accounted for 57.8

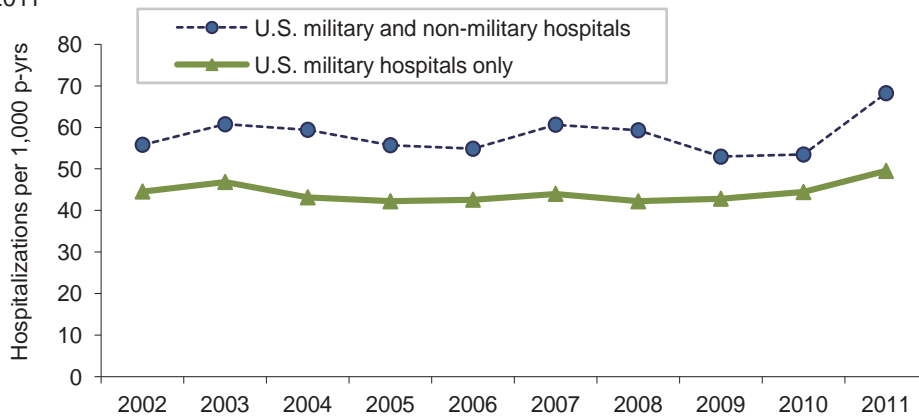
TABLE 1. Hospitalizations, ICD-9-CM major diagnostic categories, active component, U.S. Armed Forces, 2007, 2009, and 2011

| Major diagnostic category (ICD-9-CM) | 2007 | | | 2009 | | | 2011 | | |
|---|--------|-------------------|------|--------|-------------------|------|--------|-------------------|------|
| | No. | Rate ^a | Rank | No. | Rate ^a | Rank | No. | Rate ^a | Rank |
| Mental disorders (290-319) | 14,112 | 10.1 | (2) | 15,339 | 10.4 | (2) | 21,735 | 14.9 | (1) |
| Pregnancy and delivery (630-679, relevant V-codes) ^b | 18,326 | 13.1 (91.4) | (1) | 16,009 | 10.9 (76.4) | (1) | 19,722 | 13.5 (93.6) | (2) |
| Injury and poisoning (800-999) | 13,095 | 9.4 | (3) | 10,063 | 6.8 | (3) | 12,741 | 8.7 | (3) |
| Digestive system (520-579) | 7,520 | 5.4 | (5) | 7,001 | 4.8 | (4) | 9,049 | 6.2 | (4) |
| Musculoskeletal system/connective tissue (710-739) | 7,643 | 5.5 | (4) | 6,721 | 4.6 | (5) | 7,885 | 5.4 | (5) |
| Signs, symptoms, ill-defined conditions (780-799) | 4,410 | 3.1 | (6) | 4,033 | 2.7 | (6) | 4,916 | 3.4 | (6) |
| Other (V01-V82, except pregnancy-related) | 2,402 | 1.7 | (10) | 2,387 | 1.6 | (10) | 3,994 | 2.7 | (7) |
| Respiratory system (460-519) | 2,966 | 2.1 | (7) | 3,268 | 2.2 | (7) | 3,090 | 2.1 | (8) |
| Circulatory system (390-459) | 2,645 | 1.9 | (9) | 2,483 | 1.7 | (8) | 3,027 | 2.1 | (9) |
| Genitourinary system (580-629) | 2,831 | 2.0 | (8) | 2,483 | 1.7 | (9) | 3,002 | 2.1 | (10) |
| Nervous system (320-389) | 1,782 | 1.3 | (13) | 1,755 | 1.2 | (13) | 2,429 | 1.7 | (11) |
| Neoplasms (140-239) | 2,024 | 1.4 | (12) | 1,821 | 1.2 | (12) | 2,238 | 1.5 | (12) |
| Skin and subcutaneous tissue (680-709) | 2,353 | 1.7 | (11) | 1,984 | 1.4 | (11) | 2,182 | 1.5 | (13) |
| Infectious and parasitic diseases (001-139) | 1,342 | 1.0 | (14) | 1,119 | 0.8 | (14) | 1,546 | 1.1 | (14) |
| Endocrine, nutrition, immunity (240-279) | 830 | 0.6 | (15) | 804 | 0.5 | (15) | 1,005 | 0.7 | (15) |
| Congenital anomalies (740-759) | 337 | 0.2 | (16) | 309 | 0.2 | (17) | 469 | 0.3 | (16) |
| Hematologic disorders (280-289) | 318 | 0.2 | (17) | 326 | 0.2 | (16) | 382 | 0.3 | (17) |
| Total | 84,936 | 60.7 | | 77,905 | 53.0 | | 99,412 | 68.2 | |

^aRates are expressed as hospitalizations per 1,000 p-yrs

^bRate of pregnancy and delivery-related hospitalizations among females only (in parentheses)

FIGURE 1. Rate of hospitalization by year, active component, U.S. Armed Forces, 2002-2011



percent of all hospitalizations of females. The rate of hospitalizations for conditions not related to pregnancy and delivery was almost one-third (30.6%) higher among females (68.4 per 1,000 per year) than males (**data not shown**).

Hospitalization rates were higher among males than females for injuries and poisonings (male:female [m:f], rate ratio [RR]: 1.45; rate difference [RD]: 2.8 per 1,000 p-yrs), musculoskeletal system/connective tissue disorders (m:f, RR: 1.13; RD: 0.6 per 1,000 p-yrs), and skin and subcutaneous tissue disorders (m:f, RR: 1.64; RD: 0.6 per 1,000 p-yrs). Hospitalization rates were similar among males and females for circulatory disorders (m:f, RR: 1.09; RD: 0.2 per 1,000 p-yrs) and respiratory diseases (m:f, RR: 1.03; RD: 0.1 per 1,000 p-yrs). Hospitalization rates were higher among females than males for the other 12 major disease-specific categories. Of these 12 categories, the largest absolute differences in hospitalization rates between females and males were for genitourinary disorders (RD: 6.2 per 1,000 p-yrs), mental disorders (RD: 4.3 per 1,000 p-yrs), and neoplasms (RD: 3.4 per 1,000 p-yrs) (**data not shown**).

Relationships between age and hospitalization rates significantly varied across illness- and injury-specific categories (**Figure 2**). For example, among both males and females, hospitalization rates sharply increased with age for neoplasms, circulatory, genitourinary, and musculoskeletal system/connective tissue disorders; rates decreased with age for mental disorders; and rates were generally stable across age groups for infectious and parasitic diseases,

digestive disorders, and injuries and poisonings (**Figure 2**).

Most frequent diagnoses:

In 2011, seven diagnoses (at the 3-digit level of the ICD-9-CM) each accounted for more than 1,400 hospitalizations among males: adjustment reactions (n=5,503), episodic mood disorders (n=4,142), intervertebral disc disorders (n=2,305), alcohol dependence syndrome (2,150), acute appendicitis (n=2,096), symptoms involving the respiratory system (n=1,495), and other cellulitis and abscess (n=1,442). These seven diagnoses accounted for 30 percent of all hospitalizations of males in 2011 (**Table 2**).

In 2011, pregnancy and delivery-related conditions accounted for 58 percent of all hospitalizations of females (**Table 3**). Other than pregnancy and delivery-related diagnoses, leading causes of hospitalizations of females were adjustment reactions (n=1,359), episodic mood disorders (n=1,158), uterine leiomyoma (n=541), depressive disorder (n=338), acute appendicitis (n=324), and intervertebral disc disorders (n=295). These six diagnoses accounted for 28 percent of all hospitalizations (not related to pregnancy/delivery) of females (**Table 3**).

Mental health conditions:

In 2011 mental disorders accounted for more hospitalizations of U.S. service members than any other major category of diagnoses (**Table 1**). Adjustment reactions (including post-traumatic stress disorder)

and episodic mood disorders were associated with more hospitalizations among active component members than any other specific condition (at the 3-digit level); together, these two conditions accounted for 15 percent and 17 percent of all hospitalizations of males and females (excluding pregnancy and delivery-related), respectively (**Tables 2,3**).

Injuries and poisonings:

As in the past, in 2011, injuries and poisonings were a leading cause of hospitalizations of U.S. military members (**Table 1**). Of all injuries and poisonings that resulted in hospitalizations in U.S. military medical facilities (n=9,286), approximately one in seven (n=1,367; 14.7%) were reported as “intentionally inflicted” (e.g., enemy weapons; suicide gestures/attempts; fights, assaults, legal interventions) of which the majority (n=851; 62.3%) were reported as “battle casualties” (**Table 4**). Of all “unintentional” injuries and poisonings that resulted in hospitalizations in U.S. military facilities (n=7,885), approximately two-thirds (63.2%) were considered caused by falls and miscellaneous (n=2,011), complications of medical or surgical care (n=1,626), or guns and explosives (n=1,350) (**Table 4**).

Among males, injury and poisoning-related hospitalizations were most often related to complications of medical and surgical procedures and fractures of face, ankle, or leg bones (**Table 2**). Among females, injury and poisoning-related hospitalizations were most often related to complications of medical and surgical procedures, poisonings (analgesics, antipyretics, antirheumatics, psychotropic agents), and ankle fractures (**Table 3**).

Durations of hospitalizations:

Since 2002, the median durations of hospitalizations (all causes) have been stable (3 days), but the durations of the longest hospitalizations have increased (**Figure 3**). In 2011 as in previous years, medians and ranges of durations of hospitalizations significantly varied across major diagnostic categories. For example, median lengths of hospitalizations varied from two days (e.g., musculoskeletal system/connective tissue

FIGURE 2. Rate (per 1,000 p-yrs) of hospitalization by major diagnostic categories, by age and gender, active component, U.S. Armed Forces, 2011

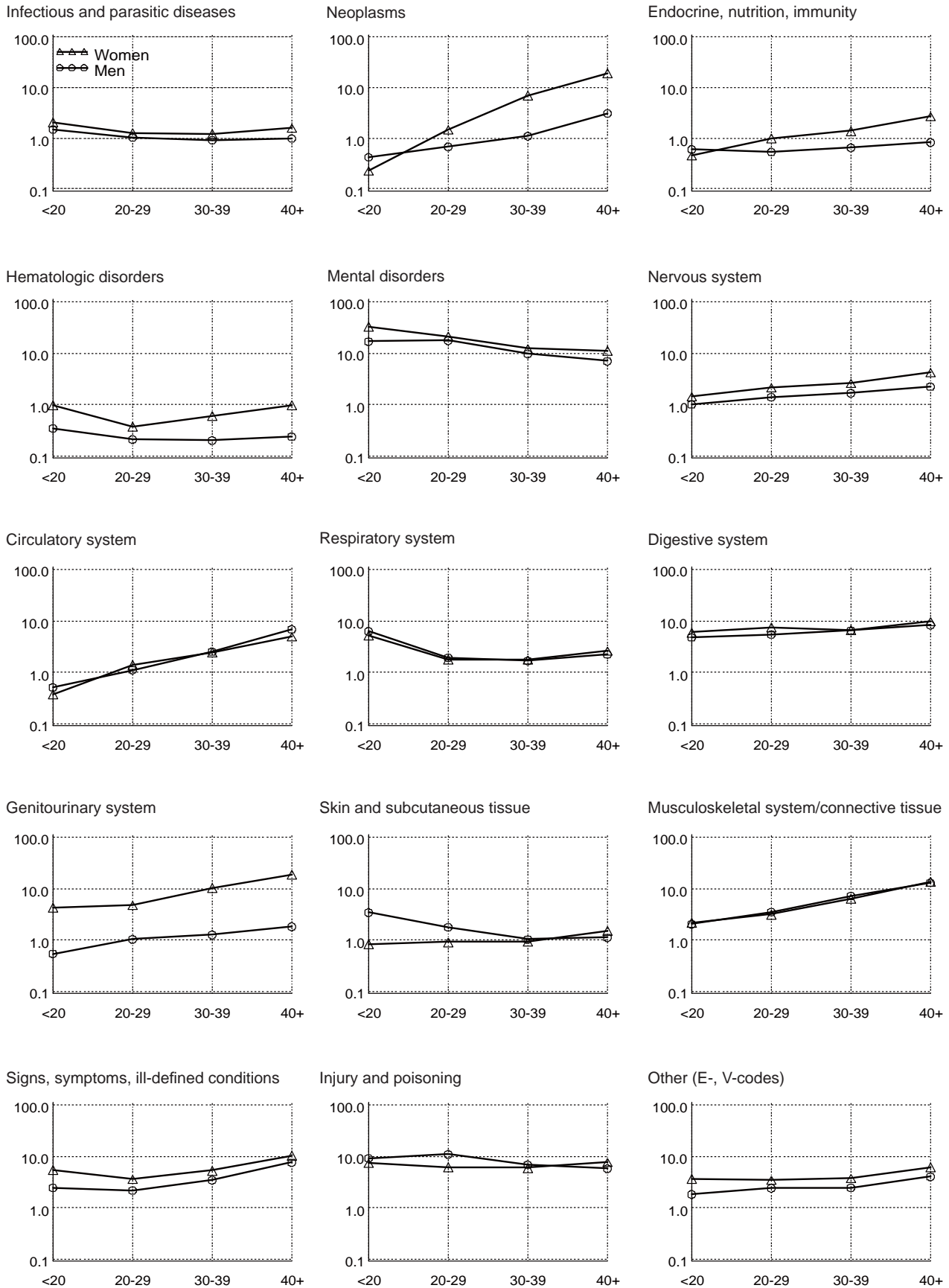


TABLE 2. Most frequent diagnoses during hospitalization by major diagnostic category, males, active component, U.S. Armed Forces, 2011

| Diagnostic category (ICD-9-CM codes) ♂ | No. | % | Diagnostic category (ICD-9-CM codes) ♂ | No. | % |
|--|--------|------|--|--------|------|
| Infectious and parasitic diseases (001 - 139) | 1,267 | | Digestive system (520 - 579) | 7,502 | |
| Intestinal infections due to other organisms | 212 | 16.7 | Acute appendicitis | 2,096 | 27.9 |
| Meningitis due to enterovirus | 187 | 14.8 | Dentofacial anomalies including malocclusion | 582 | 7.8 |
| Septicemia | 184 | 14.5 | Cholelithiasis | 491 | 6.5 |
| Ill-defined intestinal infections | 122 | 9.6 | Diseases of pancreas | 428 | 5.7 |
| Viral and chlamydial infection | 76 | 6.0 | Diseases of esophagus | 417 | 5.6 |
| Neoplasms (140 - 239) | 1,304 | | Genitourinary system (580 - 629) | 1,442 | |
| Malignant neoplasm of prostate | 88 | 6.7 | Calculus of kidney and ureter | 445 | 30.9 |
| Malignant neoplasm of thyroid gland | 84 | 6.4 | Acute renal failure | 245 | 17.0 |
| Malignant neoplasm of brain | 80 | 6.1 | Other disorders of male genital organs | 167 | 11.6 |
| Malignant neoplasm of testis | 72 | 5.5 | Urethral stricture | 105 | 7.3 |
| Malignant neoplasm of colon | 45 | 3.5 | Other disorders of kidney and ureter | 73 | 5.1 |
| Endocrine, nutrition, immunity (240 - 279) | 749 | | Skin and subcutaneous tissue (680 - 709) | 1,978 | |
| Disorders of fluid electrolyte and acid-base balance | 242 | 32.3 | Other cellulitis and abscess | 1,442 | 72.9 |
| Diabetes mellitus | 225 | 30.0 | Pilonidal cyst | 164 | 8.3 |
| Overweight, obesity and other hyperalimentation | 60 | 8.0 | Cellulitis and abscess of finger and toe | 116 | 5.9 |
| Nontoxic nodular goiter | 47 | 6.3 | Other disorders of skin and subcutaneous tissue | 50 | 2.5 |
| Thyrotoxicosis with or without goiter | 43 | 5.7 | Other hypertrophic and atrophic conditions of skin | 36 | 1.8 |
| Hematologic disorders (280 - 289) | 272 | | Musculoskeletal system/connective tissue (710 - 739) | 6,857 | |
| Diseases of white blood cells | 94 | 34.6 | Intervertebral disc disorders | 2,305 | 33.6 |
| Other diseases of blood and blood-forming organs | 52 | 19.1 | Disorders of muscle ligament and fascia | 578 | 8.4 |
| Purpura and other hemorrhagic conditions | 38 | 14.0 | Spondylosis and allied disorders | 490 | 7.1 |
| Aplastic anemia | 24 | 8.8 | Osteoarthritis and allied disorders | 431 | 6.3 |
| Other and unspecified anemias | 24 | 8.8 | Other and unspecified disorders of back | 428 | 6.2 |
| Mental disorders (290 - 319) | 17,819 | | Congenital anomalies (740 - 759) | 365 | |
| Adjustment reaction | 5,503 | 30.9 | Other congenital musculoskeletal anomalies | 91 | 24.9 |
| Episodic mood disorders | 4,142 | 23.2 | Anomalies of bulbus cordis, cardiac septal closure | 43 | 11.8 |
| Alcohol dependence syndrome | 2,150 | 12.1 | Other congenital anomalies of digestive system | 33 | 9.0 |
| Depressive disorder not elsewhere classified | 1,209 | 6.8 | Other congenital anomalies of heart | 32 | 8.8 |
| Nondependent abuse of drugs | 1,037 | 5.8 | Other congenital anomalies of circulatory system | 30 | 8.2 |
| Nervous system (320 - 389) | 1,924 | | Signs, symptoms, and ill-defined conditions (780 - 799) | 3,915 | |
| Pain, not elsewhere classified | 354 | 18.4 | Symptoms involving respiratory system | 1,495 | 38.2 |
| Organic sleep disorders | 289 | 15.0 | General symptoms | 1,213 | 31.0 |
| Epilepsy | 219 | 11.4 | Other symptoms involving abdomen and pelvis | 510 | 13.0 |
| Migraine | 161 | 8.4 | Symptoms involving head and neck | 174 | 4.4 |
| Other conditions of brain | 93 | 4.8 | Symptoms involving digestive system | 146 | 3.7 |
| Circulatory system (390 - 459) | 2,620 | | Injury and poisoning (800 - 999) | 11,410 | |
| Cardiac dysrhythmias | 558 | 21.3 | Other complications of procedures not elsewhere classified | 972 | 8.5 |
| Acute pulmonary heart disease | 314 | 12.0 | Fracture of ankle | 580 | 5.1 |
| Acute myocardial infarction | 185 | 7.1 | Complications peculiar to certain specified procedures | 511 | 4.5 |
| Other forms of chronic ischemic heart disease | 174 | 6.6 | Fracture of face bones | 474 | 4.2 |
| Other venous embolism and thrombosis | 149 | 5.7 | Fracture of tibia and fibula | 453 | 4.0 |
| Respiratory system (460 - 519) | 2,655 | | Other (V01-V82, except pregnancy-related) | 3,199 | |
| Pneumonia organism unspecified | 857 | 32.3 | Encounter for other and unspecified procedures, aftercare | 1,008 | 31.5 |
| Pneumothorax | 202 | 7.6 | Observation, evaluation for suspected conditions not found | 500 | 15.6 |
| Deviated nasal septum | 169 | 6.4 | Convalescence and palliative care | 422 | 13.2 |
| Other diseases of lung | 161 | 6.1 | Care involving use of rehabilitation procedures | 396 | 12.4 |
| Chronic disease of tonsils and adenoids | 157 | 5.9 | Other orthopedic aftercare | 385 | 12.0 |

TABLE 3. Most frequent diagnoses during hospitalization by major diagnostic category, females, active component, U.S. Armed Forces, 2011

| Diagnostic category (ICD-9-CM codes) | ♀ | No. | % |
|--|---|-------|------|
| Infectious and parasitic diseases (001 - 139) | | 279 | |
| Intestinal infections due to other organisms | | 48 | 17.2 |
| Septicemia | | 47 | 16.8 |
| Meningitis due to enterovirus | | 43 | 15.4 |
| Ill-defined intestinal infections | | 29 | 10.4 |
| Viral and chlamydial infection | | 21 | 7.5 |
| Neoplasms (140 - 239) | | 934 | |
| Uterine leiomyoma | | 541 | 57.9 |
| Malignant neoplasm of thyroid gland | | 51 | 5.5 |
| Malignant neoplasm of female breast | | 45 | 4.8 |
| Benign neoplasm of ovary | | 43 | 4.6 |
| Malignant neoplasm of ovary, other uterine adnexa | | 23 | 2.5 |
| Endocrine, nutrition, immunity (240 - 279) | | 256 | |
| Disorders of fluid electrolyte and acid-base balance | | 68 | 26.6 |
| Nontoxic nodular goiter | | 58 | 22.7 |
| Overweight, obesity and other hyperalimentation | | 35 | 13.7 |
| Thyrotoxicosis with or without goiter | | 31 | 12.1 |
| Diabetes mellitus | | 15 | 5.9 |
| Hematologic disorders (280 - 289) | | 110 | |
| Iron deficiency anemias | | 39 | 35.5 |
| Other and unspecified anemias | | 19 | 17.3 |
| Purpura and other hemorrhagic conditions | | 14 | 12.7 |
| Diseases of white blood cells | | 14 | 12.7 |
| Hereditary hemolytic anemias | | 10 | 9.1 |
| Mental disorders (290 - 319) | | 3,916 | |
| Adjustment reaction | | 1,359 | 34.7 |
| Episodic mood disorders | | 1,158 | 29.6 |
| Depressive disorder not elsewhere classified | | 338 | 8.6 |
| Alcohol dependence syndrome | | 227 | 5.8 |
| Anxiety, dissociative and somatoform disorders | | 226 | 5.8 |
| Nervous system (320 - 389) | | 505 | |
| Migraine | | 97 | 19.2 |
| Pain, not elsewhere classified | | 84 | 16.6 |
| Epilepsy | | 60 | 11.9 |
| Other conditions of brain | | 35 | 6.9 |
| Multiple sclerosis | | 22 | 4.4 |
| Circulatory system (390 - 459) | | 407 | |
| Acute pulmonary heart disease | | 80 | 19.7 |
| Cardiac dysrhythmias | | 76 | 18.7 |
| Other venous embolism and thrombosis | | 31 | 7.6 |
| Hemorrhoids | | 25 | 6.1 |
| Other and ill-defined cerebrovascular disease | | 18 | 4.4 |
| Respiratory system (460 - 519) | | 435 | |
| Pneumonia organism unspecified | | 86 | 19.8 |
| Asthma | | 49 | 11.3 |
| Chronic disease of tonsils and adenoids | | 46 | 10.6 |
| Acute tonsillitis | | 26 | 6.0 |
| Other diseases of lung | | 24 | 5.5 |

| Diagnostic category (ICD-9-CM codes) | ♀ | No. | % |
|---|---|--------|------|
| Digestive system (520 - 579) | | 1,547 | |
| Acute appendicitis | | 324 | 20.9 |
| Cholelithiasis | | 224 | 14.5 |
| Dentofacial anomalies including malocclusion | | 213 | 13.8 |
| Other and unspecified noninfectious gastroenteritis and colitis | | 77 | 5.0 |
| Diseases of pancreas | | 71 | 4.6 |
| Genitourinary system (580 - 629) | | 1,560 | |
| Disorders of menstruation and other abnormal bleeding | | 283 | 18.1 |
| Infections of kidney | | 192 | 12.3 |
| Pain, other symptoms associated with female genital organs | | 178 | 11.4 |
| Noninflammatory disorders of ovary fallopian tube | | 155 | 9.9 |
| Other disorders of breast | | 135 | 8.7 |
| Pregnancy and delivery (630 - 679, relevant V-codes) | | 19,722 | |
| Trauma to perineum and vulva during delivery | | 4,984 | 25.3 |
| Other indications for care or intervention related to labor | | 1,624 | 8.2 |
| Other conditions complicating pregnancy | | 1,468 | 7.4 |
| Abnormality of organs and soft tissues of pelvis | | 1,400 | 7.1 |
| Hypertension complicating pregnancy, childbirth | | 1,360 | 6.9 |
| Skin and subcutaneous tissue (680 - 709) | | 204 | |
| Other cellulitis and abscess | | 116 | 56.9 |
| Pilonidal cyst | | 18 | 8.8 |
| Other hypertrophic and atrophic conditions of skin | | 11 | 5.4 |
| Erythematous conditions | | 10 | 4.9 |
| Other disorders of skin and subcutaneous tissue | | 10 | 4.9 |
| Musculoskeletal system/connective tissue (710 - 739) | | 1,028 | |
| Intervertebral disc disorders | | 295 | 28.7 |
| Other derangement of joint | | 87 | 8.5 |
| Other and unspecified disorders of back | | 81 | 7.9 |
| Other disorders of bone and cartilage | | 70 | 6.8 |
| Spondylosis and allied disorders | | 59 | 5.7 |
| Signs, symptoms, ill-defined conditions (780 - 799) | | 1,001 | |
| General symptoms | | 286 | 28.6 |
| Other symptoms involving abdomen and pelvis | | 263 | 26.3 |
| Symptoms involving respiratory system | | 239 | 23.9 |
| Symptoms involving head and neck | | 60 | 6.0 |
| Symptoms involving digestive system | | 48 | 4.8 |
| Injury and poisoning (800 - 999) | | 1,331 | |
| Other complications of procedures not elsewhere classified | | 198 | 14.9 |
| Complications peculiar to certain specified procedures | | 104 | 7.8 |
| Poisoning by analgesics antipyretics and antirheumatics | | 93 | 7.0 |
| Poisoning by psychotropic agents | | 86 | 6.5 |
| Fracture of ankle | | 75 | 5.6 |
| Other (V01-V82, except pregnancy-related) | | 795 | |
| Observation and evaluation for suspected conditions not found | | 267 | 33.6 |
| Encounter for other and unspecified procedures and aftercare | | 185 | 23.3 |
| Convalescence and palliative care | | 101 | 12.7 |
| Care involving use of rehabilitation procedures | | 54 | 6.8 |
| Other orthopedic aftercare | | 51 | 6.4 |

TABLE 4. Injury and poisoning hospitalizations^a by causal agent^b, active component, U.S. Armed Forces, 2011

| Cause | No. | % |
|--|-------|------|
| Unintentional | 7,885 | 84.9 |
| Fall and miscellaneous | 2,011 | 21.7 |
| Complications of medical/surgical care | 1,626 | 17.5 |
| Guns, explosives (includes accidents during war) | 1,350 | 14.5 |
| Land transport | 959 | 10.3 |
| Poisons and fire | 649 | 7.0 |
| Athletics | 436 | 4.7 |
| Environmental | 320 | 3.4 |
| Machinery, tools | 262 | 2.8 |
| Air transport | 245 | 2.6 |
| Water transport | 27 | 0.3 |
| Intentional | 1,367 | 14.7 |
| Battle casualty | 851 | 9.2 |
| Self-inflicted | 416 | 4.5 |
| Non-battle, inflicted by other | 100 | 1.1 |
| Missing/invalid code | 34 | 0.4 |

^aHospitalizations in U.S. military medical facilities only
^bCausal agents were determined by codes IAW STANAG 2050

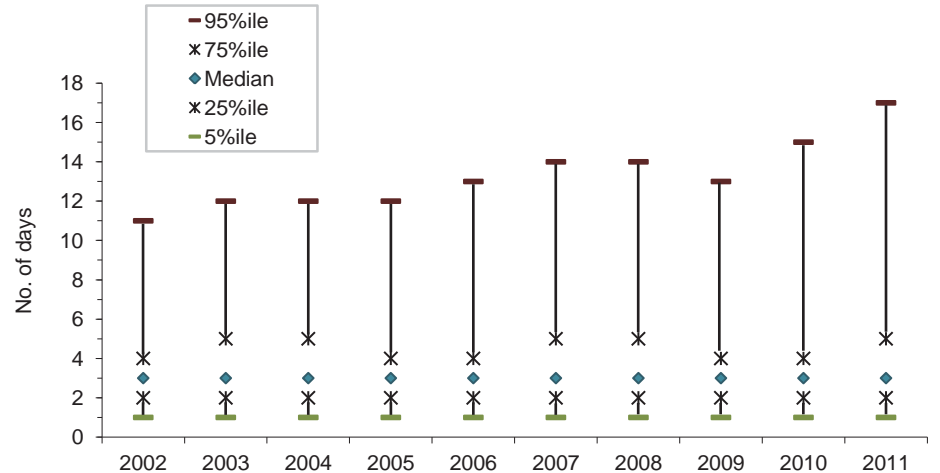
Injuries and poisonings were the second leading cause of hospitalizations in the Marine Corps, the third leading cause in the Army and Navy, and the fifth leading cause in the Air Force and Coast Guard. The hospitalization rate for injuries and poisonings was slightly higher among soldiers (12.6 per 1,000 p-yrs) than Marines (12.2 per 1,000 p-yrs) and more than twice as high among

soldiers and Marines than among members of the other Services (Table 5).

EDITORIAL COMMENT

In 2011, for every 15 active component service members, there was one hospitalization for any cause; for every

FIGURE 3. Length of hospital stay, by year, active component, U.S. Armed Forces, 2002-2011



disorders; signs, symptoms, and ill-defined conditions) to five days (i.e., mental disorders). For most diagnostic categories, fewer than five percent of hospitalizations exceeded 9 days, but approximately five percent of mental disorder-related hospitalizations exceeded 31 days and five percent of “other” or V-coded hospitalizations (primarily orthopedic aftercare and rehabilitation following a previous illness or injury) exceeded 35 days (Figure 4).

Hospitalizations by service:

Among members of the Navy, Air Force, and Coast Guard, pregnancy and delivery-related conditions accounted for more hospitalizations than any other category of illnesses or injuries; however, among members of the Army and Marine Corps, mental disorders were the leading cause of hospitalizations. The crude hospitalization rate for mental disorders in the Army was approximately 70% higher than in the Marine Corps and more than twice as high than in the other Services (Table 5).

FIGURE 4. Length of hospital stay by major diagnostic category, active component, U.S. Armed Forces, 2011

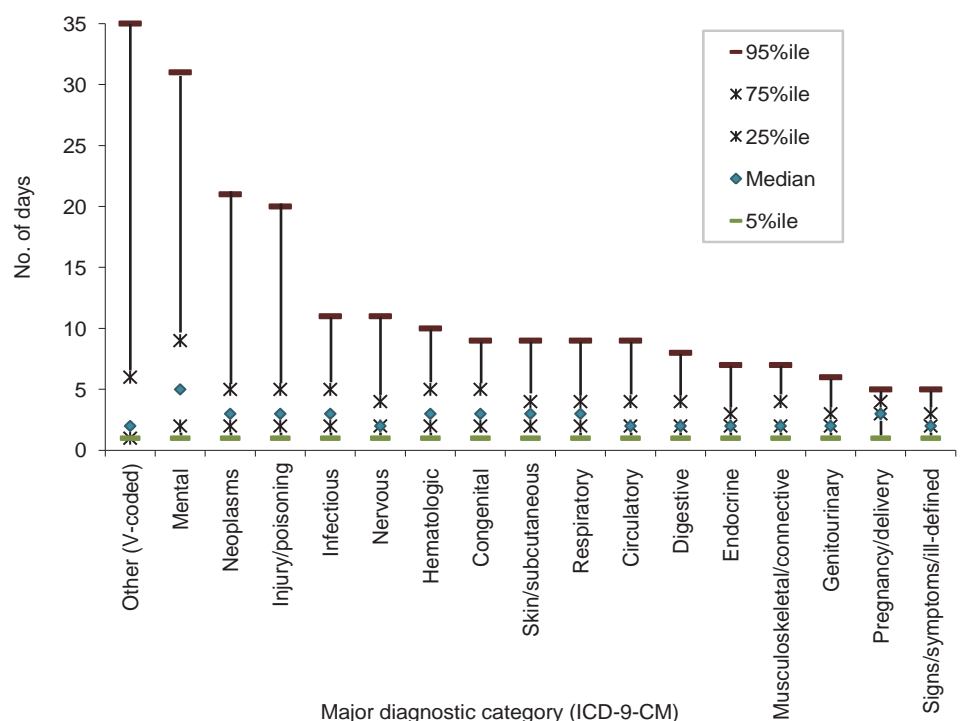


TABLE 5. Hospitalizations by service and ICD-9-CM diagnostic category, active component, U.S. Armed Forces, 2011

| Major diagnostic category (ICD-9-CM) | Army | | Navy | | Air Force | | Marine Corps | | Coast Guard | |
|---|--------|-------------------|--------|-------------------|-----------|-------------------|--------------|-------------------|-------------|-------------------|
| | No. | Rate ^a | No. | Rate ^a | No. | Rate ^a | No. | Rate ^a | No. | Rate ^a |
| Mental disorders (290 - 319) | 13,003 | 23.1 | 3,066 | 9.5 | 2,797 | 8.5 | 2,606 | 13.0 | 263 | 6.3 |
| Pregnancy and delivery (630-679, relevant V-codes) ^b | 7,452 | 13.2(97.8) | 4,786 | 14.9(91.6) | 5,358 | 16.3(85.4) | 1,749 | 8.7(128.0) | 377 | 9.0(65.5) |
| Injury and poisoning (800 - 999) | 7,075 | 12.6 | 1,626 | 5.1 | 1,467 | 4.5 | 2,454 | 12.2 | 119 | 2.8 |
| Digestive system (520 - 579) | 4,264 | 7.6 | 1,622 | 5.1 | 1,854 | 5.6 | 1,115 | 5.5 | 194 | 4.6 |
| Musculoskeletal system/connective tissue (710 - 739) | 3,951 | 7.0 | 1,122 | 3.5 | 1,778 | 5.4 | 887 | 4.4 | 147 | 3.5 |
| Signs, symptoms, ill-defined conditions (780 - 799) | 2,625 | 4.7 | 870 | 2.7 | 973 | 3.0 | 409 | 2.0 | 39 | 0.9 |
| Other (V01-V82, except pregnancy-related) | 2,156 | 3.8 | 689 | 2.1 | 497 | 1.5 | 587 | 2.9 | 65 | 1.6 |
| Circulatory system (390 - 459) | 1,590 | 2.8 | 515 | 1.6 | 602 | 1.8 | 257 | 1.3 | 63 | 1.5 |
| Respiratory system (460 - 519) | 1,568 | 2.8 | 414 | 1.3 | 515 | 1.6 | 552 | 2.7 | 41 | 1.0 |
| Genitourinary system (580 - 629) | 1,501 | 2.7 | 537 | 1.7 | 635 | 1.9 | 279 | 1.4 | 50 | 1.2 |
| Nervous system (320 - 389) | 1,296 | 2.3 | 399 | 1.2 | 445 | 1.4 | 256 | 1.3 | 33 | 0.8 |
| Neoplasms (140 - 239) | 1,026 | 1.8 | 483 | 1.5 | 516 | 1.6 | 166 | 0.8 | 47 | 1.1 |
| Skin and subcutaneous tissue (680 - 709) | 959 | 1.7 | 363 | 1.1 | 332 | 1.0 | 497 | 2.5 | 31 | 0.7 |
| Infectious and parasitic diseases (001 - 139) | 708 | 1.3 | 268 | 0.8 | 267 | 0.8 | 265 | 1.3 | 38 | 0.9 |
| Endocrine, nutrition, immunity (240 - 279) | 573 | 1.0 | 148 | 0.5 | 183 | 0.6 | 93 | 0.5 | 8 | 0.2 |
| Congenital anomalies (740 - 759) | 207 | 0.4 | 93 | 0.3 | 111 | 0.3 | 55 | 0.3 | 3 | 0.1 |
| Hematologic disorders (280 - 289) | 174 | 0.3 | 64 | 0.2 | 74 | 0.2 | 66 | 0.3 | 4 | 0.1 |
| Total | 50,128 | 88.9 | 17,065 | 53.1 | 18,404 | 51.9 | 12,293 | 61.1 | 1,522 | 36.4 |

^aRate expressed as hospitalizations per 1,000 p-yrs of service

^bRate of pregnancy and delivery-related hospitalizations among females only (in parentheses)

18 members, there was one hospitalization for a condition not related to pregnancy and delivery. Hospitalization rates for all causes among active component members increased in 2011 compared to the past decade. As in the past, in 2011, mental disorders, pregnancy and delivery-related conditions, and injuries and poisonings accounted for more than one-half of all hospitalizations of active component members. Since 2007, hospitalizations for mental disorders increased by more than 50 percent; during the same period, hospitalizations for injuries and poisonings slightly decreased.

The recent sharp increase in hospitalizations for mental disorders likely reflects the effects of many factors including repeated deployments and prolonged exposures to combat stresses; increased awareness and concern regarding threats to mental health among unit commanders and other front line supervisors, service members and their families, and medical care providers; increased screening for and detection of mental disorders after combat-related service and other traumatizing experiences; and decreasing stigmas and

removal of barriers to seeking and receiving mental disorder diagnoses and care.

There are limitations to this summary that should be considered when interpreting the results. For example, the scope of this report is limited to members of the active components of the Services. Many reserve component members were hospitalized for illnesses and injuries while serving on active duty in 2011; these hospitalizations are not accounted for in this report. Also, many injury and poisoning-related hospitalizations occur in non-military hospitals; in most cases, the “external causes” of such injuries and poisonings are not reported on standardized records. If there are significant differences in the causes of injuries and poisonings that resulted in hospitalizations in U.S. military and non-military hospitals, the summary of external causes of injuries requiring hospital treatment reported here (Table 4) could be misleading. Also, this summary is based on primary (first-listed) discharge diagnoses only; in many hospitalized cases, there are multiple underlying conditions. For example, military members who are wounded in combat or injured in motor vehicle accidents may have multiple

injuries and complex medical and psychological complications. In such cases, only the first-listed discharge diagnosis would be accounted for in this report. Even with these and other limitations, this report provides useful and informative insights regarding the natures, rates, and distributions of the most serious illnesses and injuries that affect active component military members.

In 2011, adjustment reactions (including post-traumatic stress disorder), mood disorders, and intervertebral disc disorders were among the leading causes of hospitalizations of both male and female service members. In recent years, attention at the highest levels of the U.S. military and significant resources have been focused on detecting, diagnosing, and treating mental disorders – especially those related to long and repeated deployments and combat stresses. In addition, the findings of this and other surveillance reports suggest that military medical research, force health protection, and clinical practice efforts should focus on improving the prevention, treatment, and rehabilitation of back disorders among U.S. military members.