

Ambulatory Visits among Members of the Active Component, U.S. Armed Forces, 2010

This report documents frequencies, rates, trends, and characteristics of ambulatory visits of active component members of the U.S. Armed Forces during calendar year 2010. Ambulatory visits of U.S. service members in fixed military and non-military (reimbursed through the Military Health System) medical treatment facilities are documented with standardized, automated records. These records are routinely archived for health surveillance purposes in the Defense Medical Surveillance System which is the source of data for this report. Ambulatory visits that are not routinely and completely documented with standardized electronic records (e.g., during deployments, field training exercises, at sea) are not included.

For this report, all records of ambulatory visits of active component members of the Army, Navy, Air Force, Marine Corps and Coast Guard in 2010 were categorized according to the first three digits of the primary (first-listed) diagnosis code (per International Classification of Diseases, 9th revision, clinical modifications [ICD-9-CM]).

Frequencies, rates, and trends:

During 2010, there were 19,227,110 reported ambulatory visits of active component service members (Table 1). The crude annual rate (all causes) was 13,181 visits per 1,000 service members; thus, on average, each service member had 13 ambulatory encounters during the year (Figure 1). The rate of documented ambulatory visits in 2010 was 9.4 percent higher than in 2009 and 64.1 percent higher than in 2001 (Figure 1).

In 2010, four of every nine (44.3%) ambulatory visits were for “other contact with health services.” This category (indicated by “V codes” of the ICD-9-CM) includes health care not related to a current illness or injury; such care includes counseling, immunizations, deployment-related

health assessments, routine and special medical examinations (e.g., periodic, occupational, retirement) and therapeutic and rehabilitative treatments for previously diagnosed illnesses or injuries (e.g., physical therapy) (Tables 2,3). Three “V-coded” diagnoses accounted for the majority of the visits in this category: general medical examination (including deployment health assessments) (32.5%), care involving use of rehabilitation procedures (15.8%), and special investigations and examinations (including vision, dental and gynecological exams) (7.5%).

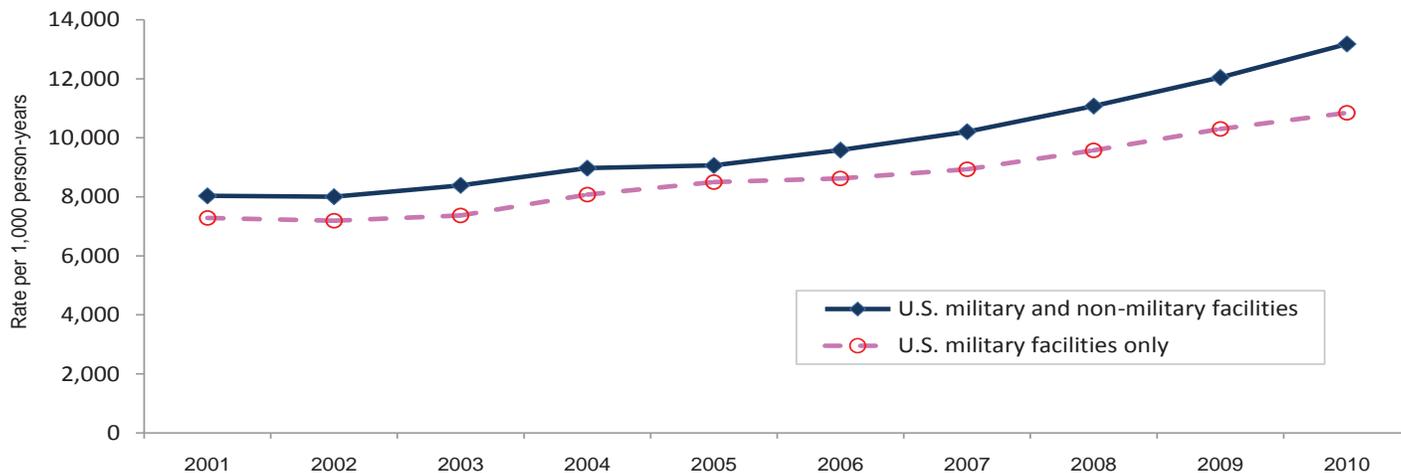
In 2010, there were 10,703,649 documented ambulatory visits for illnesses and injuries (ICD-9-CM: 001-999). The crude annual rate of illness and injury-related visits was 7.3 visits per person per year (p-yr). The rate of ambulatory visits for illnesses and injuries in 2010 was 20.6 percent higher than in 2008 and 40.0 percent higher than in 2006 (Table 1).

Ambulatory visits, by diagnostic categories:

In 2010, three major diagnostic categories accounted for the majority (55.8%) of all illness and injury-related ambulatory visits among active component service members: musculoskeletal and connective tissue disorders (23.7%), “signs, symptoms and ill-defined conditions” (16.5%), and mental disorders (15.6%) (Table 1).

From 2006 to 2010, there were increases in numbers of visits in all major diagnostic categories except infectious and parasitic diseases (Table 1). The largest percentage increases from 2006 to 2010 were for “signs, symptoms and ill-defined conditions” (change in ambulatory visits, 2006-10: +1,019,354; +136.5%), mental disorders (change in ambulatory visits, 2006-10: +889,061; +113.7%), and musculoskeletal and connective tissue disorders (change in ambulatory visits, 2006-10: +878,918; +53.0% (Table 1).

Figure 1. Rate of ambulatory visits by calendar year, active component, U.S. Armed Forces, 1999-2010



Over the past five years, the relative distributions of ambulatory visits by diagnostic categories of the ICD-9-CM remained fairly stable. Between 2006 and 2010, other (V-coded) encounters and musculoskeletal and connective tissue disorders consistently accounted for the most ambulatory visits. During the period, one category increased and one decreased by at least two in rank order based on numbers of attributable visits: “signs, symptoms, and ill-defined conditions” (change in rank order, 2006-10: 5th to 3rd) and injury and poisoning (3rd to 5th) (Table 1).

Ambulatory visits, by gender:

In 2010, males accounted for three-fourths (75.3%) of all illness and injury-related visits; however, the annual crude rate was approximately twice as high among females (12.7 visits/p-yr) than males (6.4 visits/p-yr). Excluding pregnancy-related visits (which accounted for 13.1% of all non-V coded ambulatory visits among females), the ambulatory visit rate among females was 11.0 visits/p-yr. As in the past, rates were higher among females than males for every illness and injury-related category (Figure 2).

The same three illness and injury-specific diagnoses (at the 3-digit level of the ICD-9-CM) accounted for the most ambulatory visits among males and females (Tables 2, 3). For each of the most frequently reported illness or injury-specific diagnoses, the crude rate was approximately 50 percent higher among females than males: other/unspecified disorders of joints (rates [per 1,000 p-yrs], female: 728.6; male: 465.8;

female:male rate ratio [RR]: 1.56); adjustment reaction (rates, female: 537.8; male: 362.8; RR: 1.48); and other/unspecified disorders of the back (rates, female: 534.3; male: 350.2; RR: 1.53). Other specific diagnoses that were among the ten most frequently reported among both males and females were disorders of refraction and accommodation, anxiety disorders, and respiratory symptoms. Four mental disorders among males (adjustment reaction, alcohol dependence syndrome, anxiety disorders, nondependent abuse of drugs) and three among females (adjustment reaction, episodic mood disorders, anxiety disorders) were among the ten most frequently reported illness or injury-specific diagnoses during ambulatory encounters (Tables 2, 3). Of note, “organic sleep disorders” was the eighth most frequent illness or injury-specific primary diagnosis during ambulatory visits of males (Table 2).

Across diagnostic categories, relationships between age and ambulatory visit rates were generally similar among males and females (Figure 2). For example, among both males and females, ambulatory visit rates for neoplasms and circulatory disorders were more than 10 times higher among those 40 or older than those younger than 20 years old; in contrast, clinic visit rates for injuries and poisonings and infectious and parasitic diseases were generally lower among the oldest compared to younger service members. As in the past, clinic visit rates for genitourinary disorders were fairly stable across all age groups among females, but sharply increased with age among males (Figure 2).

Table 1. Ambulatory visits, ICD-9-CM diagnostic categories, active component, U.S. Armed Forces, 2006, 2008 and 2010

Major diagnostic category (ICD-9-CM)	2006			2008			2010		
	No.	No. per person	Rank	No.	No. per person	Rank	No.	No. per person	Rank
Other (V01-V89, except pregnancy-related)	6,088,454	4.35	(1)	7,087,697	4.99	(1)	8,523,461	5.84	(1)
Musculoskeletal system (710-739)	1,658,996	1.18	(2)	2,074,770	1.46	(2)	2,537,914	1.74	(2)
Ill-defined conditions (780-799)	746,854	0.53	(5)	899,525	0.63	(5)	1,766,208	1.21	(3)
Mental disorders (290 - 319)	781,916	0.56	(4)	1,217,155	0.86	(3)	1,670,977	1.15	(4)
Injury and poisoning (800-999)	888,146	0.63	(3)	973,762	0.69	(4)	977,607	0.67	(5)
Nervous system (320-389)	707,770	0.51	(6)	753,304	0.53	(6)	928,563	0.64	(6)
Respiratory system (460-519)	679,421	0.48	(7)	745,260	0.52	(7)	723,437	0.50	(7)
Skin, subcutaneous tissue (680-709)	369,394	0.26	(8)	390,424	0.27	(8)	399,001	0.27	(8)
Pregnancy complications or care (630-679, relevant V codes)	302,123	0.22	(9)	319,170	0.22	(9)	345,704	0.24	(9)
Digestive system (520-579)	271,007	0.19	(10)	282,456	0.20	(10)	301,715	0.21	(10)
Genitourinary system (580-629)	246,896	0.18	(12)	263,266	0.19	(11)	289,032	0.20	(11)
Infectious and parasitic diseases (001-139)	255,344	0.18	(11)	245,405	0.17	(12)	245,586	0.17	(12)
Circulatory system (390 -459)	163,539	0.12	(13)	174,667	0.12	(13)	185,590	0.13	(13)
Endocrine, nutrition, immunity (240-279)	126,676	0.09	(14)	133,762	0.09	(14)	149,567	0.10	(14)
Neoplasms (140-239)	100,586	0.07	(15)	117,724	0.08	(15)	128,938	0.09	(15)
Congenital anomalies (740-759)	25,360	0.02	(16)	27,691	0.02	(16)	28,051	0.02	(16)
Hematologic disorders (280-289)	18,173	0.01	(17)	21,010	0.01	(17)	25,759	0.02	(17)
<i>Total</i>	<i>13,430,655</i>	<i>9.59</i>		<i>15,727,048</i>	<i>11.08</i>		<i>19,227,110</i>	<i>13.18</i>	

Table 2. Most frequent diagnoses during ambulatory visits by major diagnostic category, males, U.S. Armed Forces, 2010

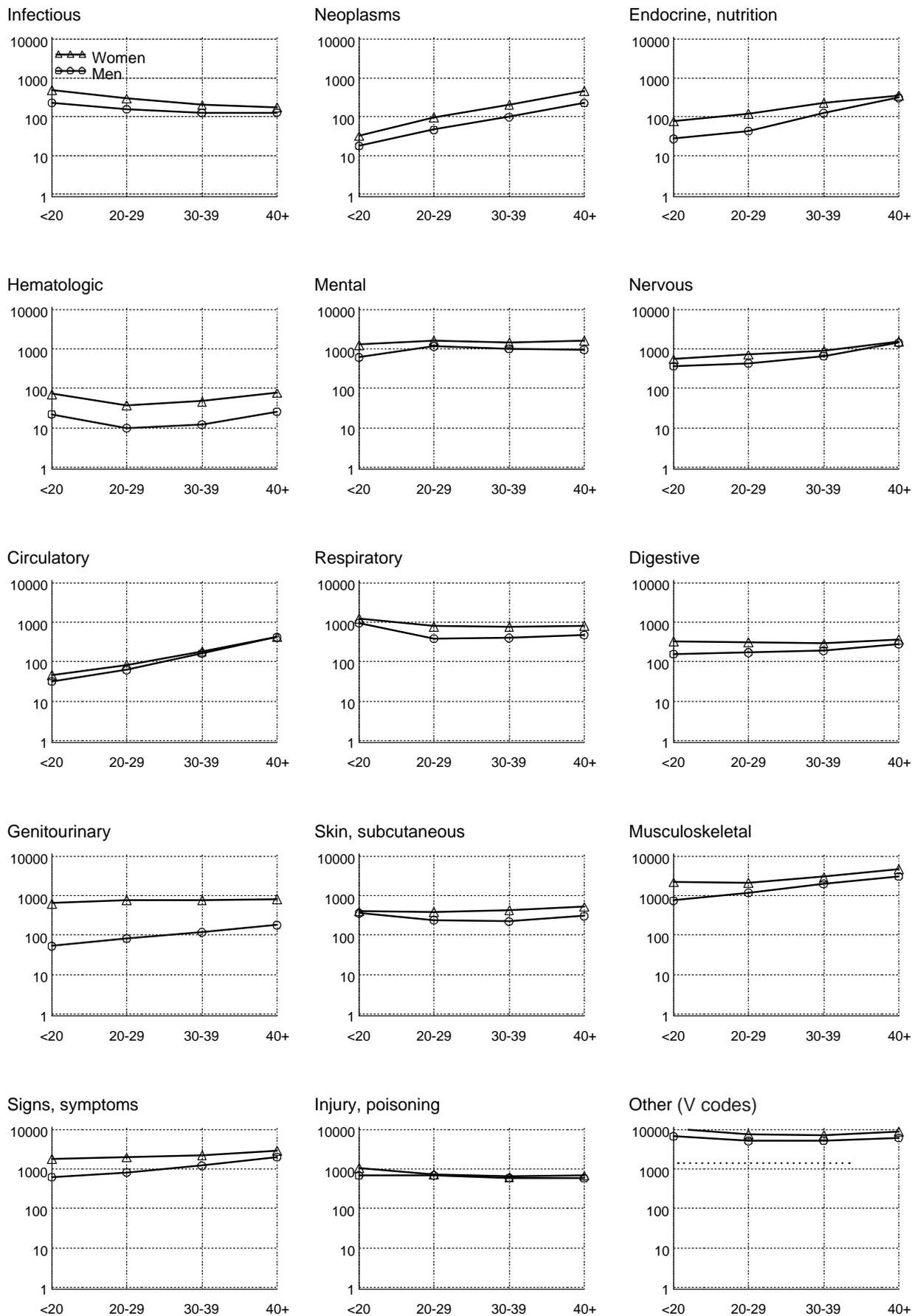
Diagnostic category (ICD-9-CM codes)	No.	%	Diagnostic category (ICD-9-CM codes)	No.	%
Infectious and parasitic diseases (001 - 139)	187,770		Digestive system (520 - 579)	235,535	
Other diseases due to viruses and chlamydiae	40,167	21.4	Other noninfectious gastroenteritis and colitis	62,822	26.7
Viral & chlamydial infection	39,254	20.9	Diseases of esophagus	34,210	14.5
Dermatophytosis	28,917	15.4	Gastrointestinal hemorrhage	14,393	6.1
Intestinal infections due to other organisms	13,295	7.1	Inguinal hernia	13,706	5.8
Streptococcal sore throat and scarlet fever	10,580	5.6	Gastritis and duodenitis	12,633	5.4
Neoplasms (140 - 239)	97,203		Genitourinary system (580 - 629)	126,178	
Benign neoplasm of skin	16,089	16.6	Other disorders of male genital organs	24,164	19.2
Neoplasm of uncertain behavior, oth & unspec site	13,452	13.8	Calculus of kidney and ureter	21,208	16.8
Neoplasms of unspecified nature	9,349	9.6	Other disorders of urethra and urinary tract	13,919	11.0
Lipoma	8,890	9.1	Orchitis and epididymitis	10,370	8.2
Malignant neoplasm of testis	3,536	3.6	Male infertility	8,821	7.0
Endocrine, nutrition, immunity (240 - 279)	115,312		Skin and subcutaneous tissue (680 - 709)	312,380	
Disorders of lipid metabolism	37,231	32.3	Other cellulitis and abscess	54,047	17.3
Diabetes mellitus	19,866	17.2	Contact dermatitis and other eczema	46,063	14.7
Overweight, obesity and other hyperalimentation	15,339	13.3	Diseases of hair and hair follicles	44,808	14.3
Disorders of fluid electrolyte and acid-base balance	7,400	6.4	Diseases of sebaceous glands	38,121	12.2
Acquired hypothyroidism	7,206	6.2	Diseases of nail	16,274	5.2
Hematologic disorders (280 - 289)	16,179		Musculoskeletal system (710 - 739)	1,996,654	
Other and unspecified anemias	3,734	23.1	Other and unspecified disorders of joint	582,071	29.2
Hereditary hemolytic anemias	2,757	17.0	Other and unspecified disorders of back	437,613	21.9
Diseases of white blood cells	2,731	16.9	Intervertebral disc disorders	138,431	6.9
Purpura and other hemorrhagic conditions	2,259	14.0	Peripheral enthesopathies and allied syndromes	132,351	6.6
Other diseases of blood and blood-forming organs	1,662	10.3	Other disorders of soft tissues	120,710	6.0
Mental disorders (290 - 319)	1,343,888		Congenital anomalies (740 - 759)	21,536	
Adjustment reaction	453,454	33.7	Certain congenital musculoskeletal deformities	6,159	28.6
Alcohol dependence syndrome	192,012	14.3	Other congenital musculoskeletal anomalies	3,170	14.7
Anxiety, dissociative and somatoform disorders	156,077	11.6	Congenital anomalies of the integument	3,009	14.0
Nondependent abuse of drugs	150,755	11.2	Other congenital anomalies of limbs	2,466	11.5
Episodic mood disorders	129,093	9.6	Congenital anomalies of urinary system	1,064	4.9
Nervous system (320 - 389)	754,027		Signs, symptoms, and ill-defined conditions (780-799)	1,317,566	
Disorders of refraction and accommodation	178,837	23.7	Other ill-defined, unknown causes of morbidity	591,732	44.9
Organic sleep disorders	177,559	23.5	General symptoms	183,855	14.0
Hearing loss	41,581	5.5	Symptoms involving respiratory system	150,323	11.4
Disorders of conjunctiva	36,868	4.9	Other symptoms involving abdomen and pelvis	87,680	6.7
Pain, not elsewhere classified	33,700	4.5	Symptoms involving digestive system	74,305	5.6
Circulatory system (390 - 459)	156,981		Injury and poisoning (800 - 999)	823,538	
Essential hypertension	71,610	45.6	Sprains and strains of ankle and foot	82,839	10.1
Hemorrhoids	17,354	11.1	Sprains and strains of knee and leg	82,586	10.0
Cardiac dysrhythmias	13,793	8.8	Sprains and strains of shoulder and upper arm	58,218	7.1
Varicose veins of other sites	5,543	3.5	Sprains and strains, other/unspec back	55,017	6.7
Other forms of chronic ischemic heart disease	4,719	3.0	Injury other and unspecified	50,988	6.2
Respiratory system (460 - 519)	551,339		Other (V01-V82, except pregnancy-related)	6,856,800	
Acute upper respiratory infections, unspecified site	127,640	23.2	General medical examination	2,353,814	34.3
Allergic rhinitis	75,096	13.6	Care involving use of rehabilitation procedures	1,085,820	15.8
Acute pharyngitis	65,933	12.0	Encounters for administrative purposes	461,820	6.7
Acute nasopharyngitis (common cold)	46,832	8.5	Special investigations and examinations	438,702	6.4
Pneumonia organism unspecified	32,033	5.8	Prophylactic vaccination and inoculation	437,847	6.0

Table 3. Most frequent diagnoses during ambulatory visits by major diagnostic category, females, U.S. Armed Forces, 2010

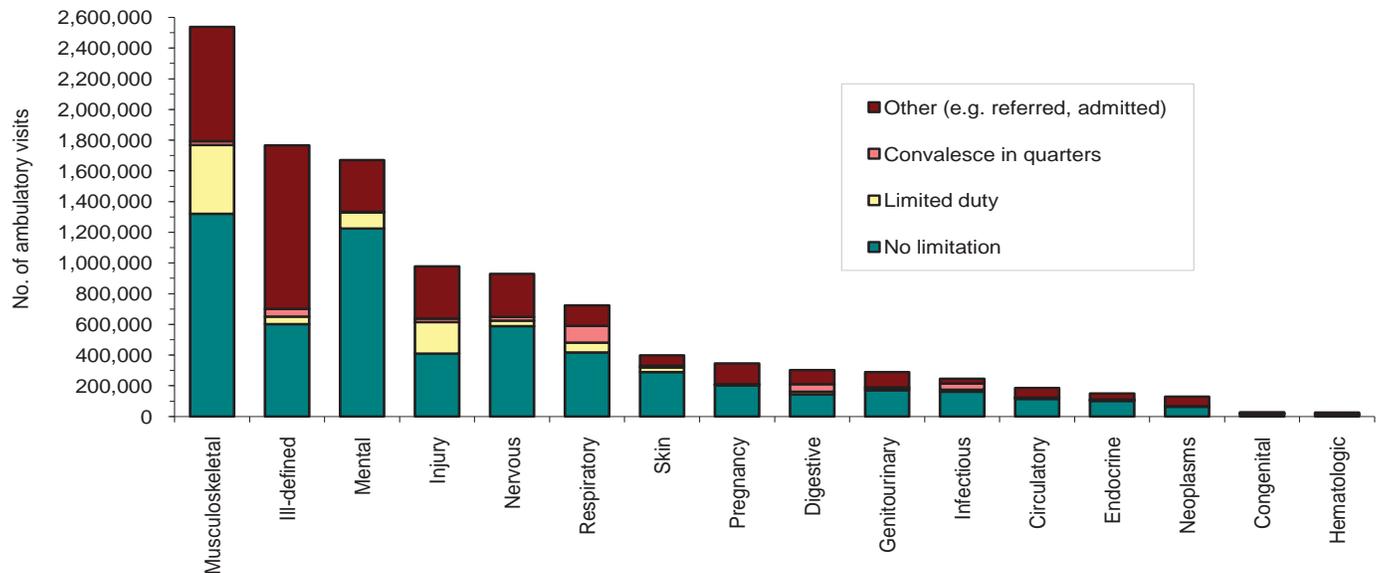
Diagnostic category (ICD-9-CM codes)	♀	No.	%
Infectious and parasitic diseases (001 - 139)		57,816	
Viral & chlamydial infection		15,373	26.6
Candidiasis		7,423	12.8
Other diseases due to viruses and chlamydiae		6,370	11.0
Dermatophytosis		4,822	8.3
Intestinal infections due to other organisms		4,172	7.2
Neoplasms (140 - 239)		31,735	
Benign neoplasm of skin		4,914	15.5
Uterine leiomyoma		4,270	13.5
Malignant neoplasm of female breast		3,387	10.7
Neoplasm of uncertain behavior, other & unspec site		3,295	10.4
Neoplasms of unspecified nature		2,532	8.0
Endocrine, nutrition, immunity (240 - 279)		34,255	
Overweight, obesity and other hyperalimentation		6,427	18.8
Acquired hypothyroidism		6,352	18.5
Ovarian dysfunction		3,009	8.8
Thyrotoxicosis with or without goiter		2,527	7.4
Disorders of fluid electrolyte and acid-base balance		2,488	7.3
Hematologic disorders (280 - 289)		9,580	
Other and unspecified anemias		3,485	36.4
Iron deficiency anemias		2,638	27.5
Purpura and other hemorrhagic conditions		816	8.5
Diseases of white blood cells		784	8.2
Hereditary hemolytic anemias		746	7.8
Mental disorders (290 - 319)		327,089	
Adjustment reaction		112,359	34.4
Episodic mood disorders		54,652	16.7
Anxiety, dissociative and somatoform disorders		49,104	15.0
Depressive disorder not elsewhere classified		34,417	10.5
Alcohol dependence syndrome		22,156	6.8
Nervous system (320 - 389)		174,536	
Disorders of refraction and accommodation		46,577	26.7
Migraine		25,852	14.8
Organic sleep disorders		10,564	6.1
Disorders of conjunctiva		10,430	6.0
Other headache syndromes		8,498	4.9
Circulatory system (390 - 459)		28,609	
Essential hypertension		9,514	33.3
Hemorrhoids		3,651	12.8
Cardiac dysrhythmias		3,095	10.8
Varicose veins of lower extremities		2,118	7.4
Disease of capillaries		965	3.4
Respiratory system (460 - 519)		172,098	
Acute upper respiratory infections, unspecified site		40,463	23.5
Allergic rhinitis		26,840	15.6
Acute pharyngitis		22,271	12.9
Acute nasopharyngitis (common cold)		13,234	7.7
Chronic sinusitis		12,412	7.2

Diagnostic category (ICD-9-CM codes)	♀	No.	%
Digestive system (520 - 579)		66,180	
Other noninfectious gastroenteritis and colitis		20,586	31.1
Functional digestive disorders		8,769	13.3
Diseases of esophagus		6,722	10.2
Gastritis and duodenitis		4,659	7.0
Gastrointestinal hemorrhage		2,637	4.0
Genitourinary system (580 - 629)		162,854	
Pain & other symptoms, female genital organs		26,772	16.4
Menstrual disorders, other abnormal bleeding		22,570	13.9
Other disorders of urethra and urinary tract		20,847	12.8
Inflammatory disease of cervix vagina and vulva		17,934	11.0
Other disorders of breast		12,587	7.7
Pregnancy complications or care (630-679, relevant V codes)		345,704	
Normal pregnancy		113,759	32.9
Other current conditions in the mother		34,044	9.8
Other complications of pregnancy		28,448	8.2
Postpartum care and examination		26,794	7.8
Early or threatened labor		11,932	3.5
Skin and subcutaneous tissue (680 - 709)		86,621	
Diseases of sebaceous glands		18,606	21.5
Contact dermatitis and other eczema		13,989	16.1
Other cellulitis and abscess		8,915	10.3
Diseases of hair and hair follicles		7,649	8.8
Other disorders of skin and subcutaneous tissue		6,039	7.0
Musculoskeletal system (710 - 739)		541,260	
Other and unspecified disorders of joint		152,235	28.1
Other and unspecified disorders of back		111,630	20.6
Other disorders of soft tissues		43,255	8.0
Nonallopathic lesions not elsewhere classified		35,640	6.6
Peripheral enthesopathies and allied syndromes		30,602	5.7
Signs, symptoms, and ill-defined conditions (780-799)		448,642	
Other unknown causes of morbidity		187,873	41.9
Other symptoms involving abdomen and pelvis		48,369	10.8
General symptoms		42,741	9.5
Symptoms involving respiratory system		38,123	8.5
Symptoms involving digestive system		30,772	6.9
Injury and poisoning (800 - 999)		154,069	
Sprains and strains of knee and leg		18,239	11.8
Sprains and strains of ankle and foot		18,218	11.8
Sprains and strains of other, unspec parts of back		13,659	8.9
Injury other and unspecified		8,449	5.5
Sprains and strains of shoulder and upper arm		8,207	5.3
Other (V01-V82, except pregnancy-related)		1,666,661	
General medical examination		415,869	25.0
Care involving use of rehabilitation procedures		261,635	15.7
Special investigations and examinations		204,196	12.3
Encounters for administrative purposes		115,518	6.9
Other persons seeking consultation		109,406	7.0

Figure 2. Rate^a of ambulatory visits, by major diagnostic categories, by age and gender, U.S. Armed Forces, 2010



^aRate expressed as ambulatory visits per 1,000 person-years

Figure 3. Ambulatory visits in relation to reported dispositions, by diagnostic category, active component, U.S. Armed Forces, 2010

Dispositions after ambulatory visits:

Approximately 54.5 percent of all illness and injury-related visits resulted in “duty without limitations” dispositions (**Figure 3**). Only one in 30 (3.3%) illness and injury-related visits resulted in “convalescence in quarters” dispositions. The illness and injury-related diagnostic categories with the highest proportions of “convalescence in quarters” or “limited duty” dispositions were diseases of the respiratory system (24.1%), injuries and poisonings (23.3%), diseases of the digestive system (22.0%), infectious and parasitic diseases (20.9%) and musculoskeletal and connective tissue disorders (18.7%). Musculoskeletal and connective tissue disorders and injuries and poisonings accounted for almost two-thirds (64.7%) of all “limited duty” dispositions; diseases of the respiratory system accounted for nearly one-third (31.3%) of all “convalescence in quarters” dispositions – more than twice as many ($n = 110,068$) as any other disease category (**Figure 3**).

Editorial comment:

In the past five years, the distribution of illness and injury-related ambulatory visits in relation to their reported primary causes has remained fairly stable. Of note, however, from 2006 to 2010, the numbers of visits that were documented with diagnostic codes indicating “ill-defined conditions” or mental disorders more than doubled. Thus, in 2010, ill-defined conditions and mental disorders accounted for nearly one-third (32.1%) of all illness and injury-related diagnoses reported on standardized records of ambulatory encounters.

Between 2006 and 2010, the relative importance of injuries/poisonings as primary causes of ambulatory visits declined. However, the military operational impacts of various conditions cannot be assessed by numbers of attributable ambulatory visits alone. For example, in 2010,

injuries and poisonings accounted for approximately one of every 20 ambulatory visits overall but nearly one-fourth of all ambulatory visits with duty-limiting dispositions. Of particular note in relation to injuries and musculoskeletal conditions, in 2010 as in the past, joint and back injuries/back pain accounted for extraordinarily large numbers of ambulatory visits and lost duty time; resources should be focused on preventing, treating, and rehabilitating back pain/injuries among active component members.

The findings of this report should be interpreted with consideration of several limitations. For example, ambulatory care that is delivered by unit medics and at deployed (including in Afghanistan, Iraq, and at sea) medical treatment facilities may not be documented on standardized, automated records and thus not archived in the Defense Medical Surveillance System (the source of data for this report). In turn, this summary does not reflect the experience of active component military members overall to the extent that the natures and rates of illnesses and injuries vary among those who are deployed and not deployed. Also, this summary is based on first-listed (primary) diagnosis codes reported on ambulatory visit records. As a result, the summary discounts morbidity related to comorbid and complicating conditions. Also, the accuracy of reported diagnoses likely varies across conditions, care providers, treatment facilities, and clinical settings. While specific diagnoses during specific encounters may not be reliable, summaries of the frequencies, natures, and trends of ambulatory encounters among active component members overall are informative and potentially useful. For example, the relatively large and sharply increasing numbers of ambulatory visits for mental disorders in general and organic sleep disorders among men in particular are interesting and perhaps revealing, e.g., responses of the Military Health System to the effects of combat and deployment-related stresses on active force members.