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Hospitalizations among Active Duty Members, US Armed Forces, 2002

This report documents frequencies, rates, trends, and characteristics of hospitalizations among active duty members of the US Armed Forces during calendar year 2002. The data source for the report was the Defense Medical Surveillance System. For the report, records of all hospitalizations of US servicemembers in US military hospitals since 1992 (Standard Inpatient Data Records) and in non-military hospitals since 1995 (Health Care Service Records) were summarized by primary diagnoses (coded using the International Classification of Diseases, 9th revision, clinical modifications).

Overall frequencies, rates, and trends. There were 72,104 hospitalizations of active duty servicemembers during 2002. Of these, 58,040 (80%) were at US military hospitals and 14,064 (20%) were at non-military hospitals. During calendar year 2002, the overall rate of hospitalizations was 52 per 1000 servicemembers (less than half the rate during 1992). Over the past five years, the overall rate of hospitalizations of US servicemembers has been remarkably stable (figure 1).

Hospitalizations, by illness and injury categories. The distributions of illnesses and injuries resulting in hospitalizations has changed over the past ten years (table 1). During 2002, pregnancy-related conditions accounted for more hospitalizations (24%) than any other diagnostic category; mental disorders (14%) were the second leading source of hospitalizations. In 1998, pregnancy-related conditions, musculoskeletal disorders, and mental disorders were the leading causes of hospitalizations, respectively; and in 1994, musculoskeletal and digestive system disorders were the two leading causes of hospitalizations of servicemembers (table 1).

Hospitalization rates, by age and gender. In 2002, hospitalization rates were higher among women than men overall and for most categories of illnesses and injuries. The crude rate among women (137.0 per 1,000 person-years [p-yrs]) was nearly 4-times higher than among men (35.7 per 1,000 p-yrs).

Relationships between hospitalization rates and age markedly varied across illness and injury categories (figure 2). For example, rates of hospitalization for neoplasms increased sharply with age; while rates of hospitalization for mental disorders decreased significantly with age. For most other categories of illnesses and injuries, hospitalization rates tended to increase with age (figure 2).

Most frequent diagnoses. Aside from conditions related to pregnancy, the most frequently reported diagnosis among both men and women was adjustment reaction (hospitalizations, males: 2,778; females: 917). Among men, the diagnoses that accounted for more than 1,000 hospitalizations each in 2002 were acute appendicitis (n=1,554), intervertebral disc disorder (n=1,522), symptoms involving respiratory system and chest (n=1,375), and other cellulitis and abscess (n=1,128). Among females, all diagnoses that accounted for 1,000 or more hospitalizations were related to pregnancy/delivery: trauma to perineum and vulva during delivery (n=4,142), delivery in a completely normal case (n=1,378), abnormality of forces of labor (n=1,137), and early or threatened labor (n=1,090) (table 3).

Days per hospitalization. The median lengths of hospital stays were similar—but the ranges markedly varied—across illness and injury categories (figure 3). Mental disorders accounted for more hospital days, and a wider range of days per hospitalization, than any other illness or injury category (figure 3). Between 1992 and 2002, the median number of days per hospitalization remained relatively constant, however, the ranges of days per hospitalization markedly decreased (figure 4).

Intentions/activities associated with injury and poison-related hospitalizations. In 2002, of all major categories, injuries and poisonings accounted for the third most hospitalizations of servicemembers. More than 90% of all injuries and poisonings that resulted in hospitalizations were considered unintentional, i.e., not related to violence, self-

inflicted, or war related. The specific activities most often reported in association with injury and poisoning-related hospitalizations were falls, land transportation, complications of medical care, and

athletics (table 4). Less than 1 in 10 injuries and poisonings that resulted in hospitalizations were intentionally self-inflicted or related to violence/assault or war (table 4).

Analysis and report by Barbara Nagaraj, MPH, Analysis Group, Army Medical Surveillance Activity.

Figure 1. Rate of hospitalizations by calendar year, US Armed Forces, 1992-2002.

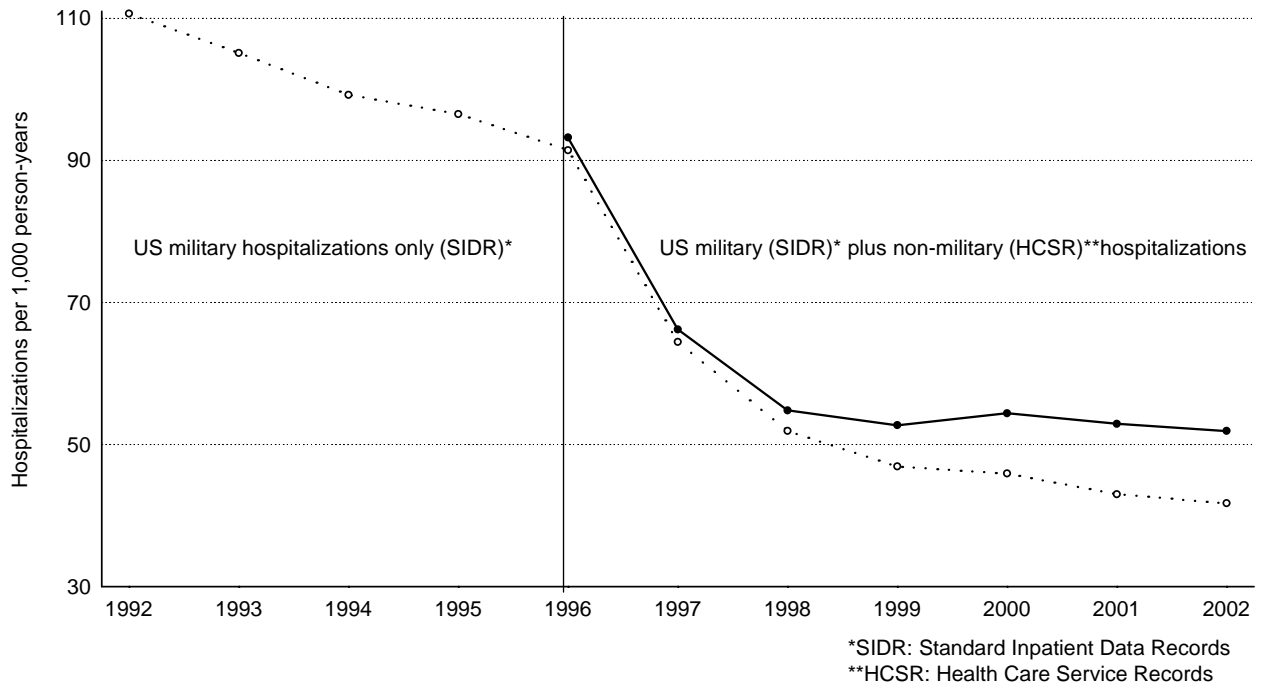
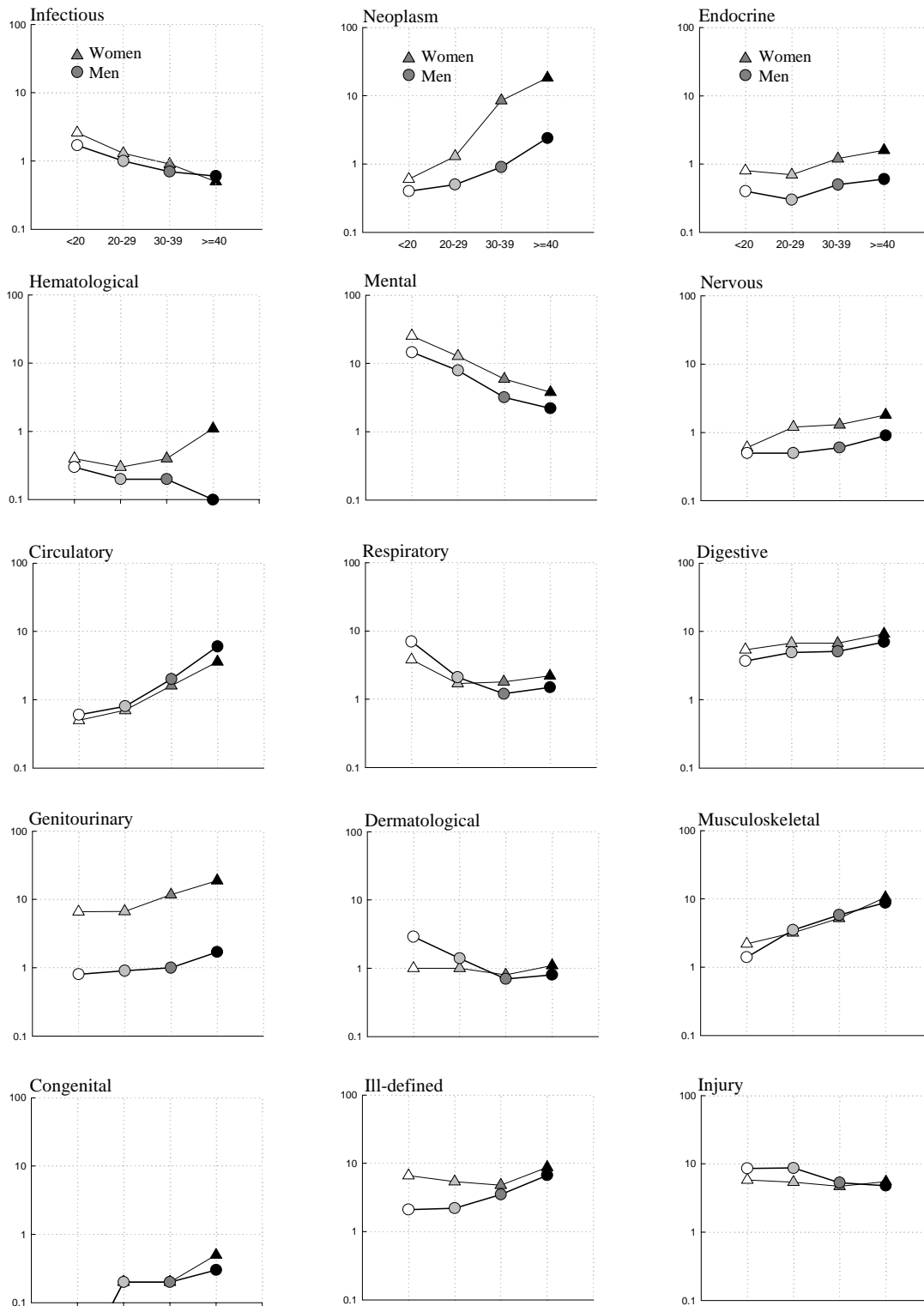


Table 1. Hospitalizations, by major diagnostic categories, US Armed Forces, 1994, 1998, and 2002

Major Diagnostic Category (ICD-9-CM)	1994		1998		2002	
	Number	(Rank)	Number	(Rank)	Number	(Rank)
Pregnancy	18,982	(3)	16,110	(1)	17,355	(1)
Mental	15,553	(5)	10,325	(3)	10,406	(2)
Injury	16,591	(4)	9,150	(4)	9,968	(3)
Digestive	24,364	(2)	7,295	(5)	7,516	(4)
Musculoskeletal	29,788	(1)	11,632	(2)	6,298	(5)
Ill-defined	6,239	(8)	4,075	(6)	4,832	(6)
Respiratory	12,124	(6)	3,636	(7)	3,114	(7)
Genitourinary	9,942	(7)	3,363	(8)	3,050	(8)
Circulatory	4,910	(11)	2,408	(9)	2,223	(9)
Neoplasms	4,499	(12)	1,870	(10)	1,879	(10)
Dermatological	3,795	(13)	1,530	(13)	1,758	(11)
Infectious	5,417	(9)	1,653	(11)	1,402	(12)
Nervous	5,127	(10)	1,538	(12)	959	(13)
Endocrine	1,387	(14)	771	(14)	697	(14)
Hematologic	476	(16)	292	(16)	348	(15)
Congenital	1,320	(15)	452	(15)	299	(16)

Figure 2. Rate* of hospitalizations, by age and gender, US Armed Forces, 2002.



*Rates expressed as hospitalizations per 1,000 person-years

Figure 3. Length of hospital stay, by major diagnostic category, US Armed Forces, 2002.

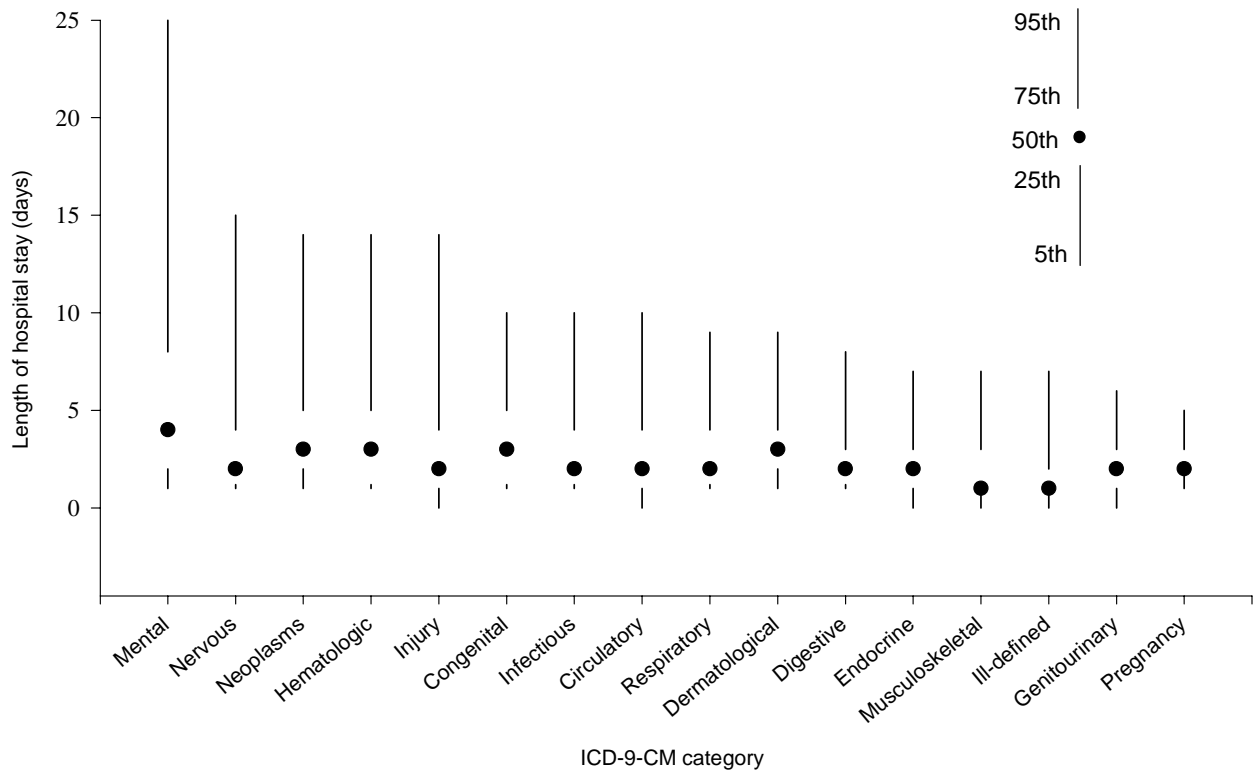


Figure 4. Length of hospital stay, by year, US Armed Forces, 1992-2002.

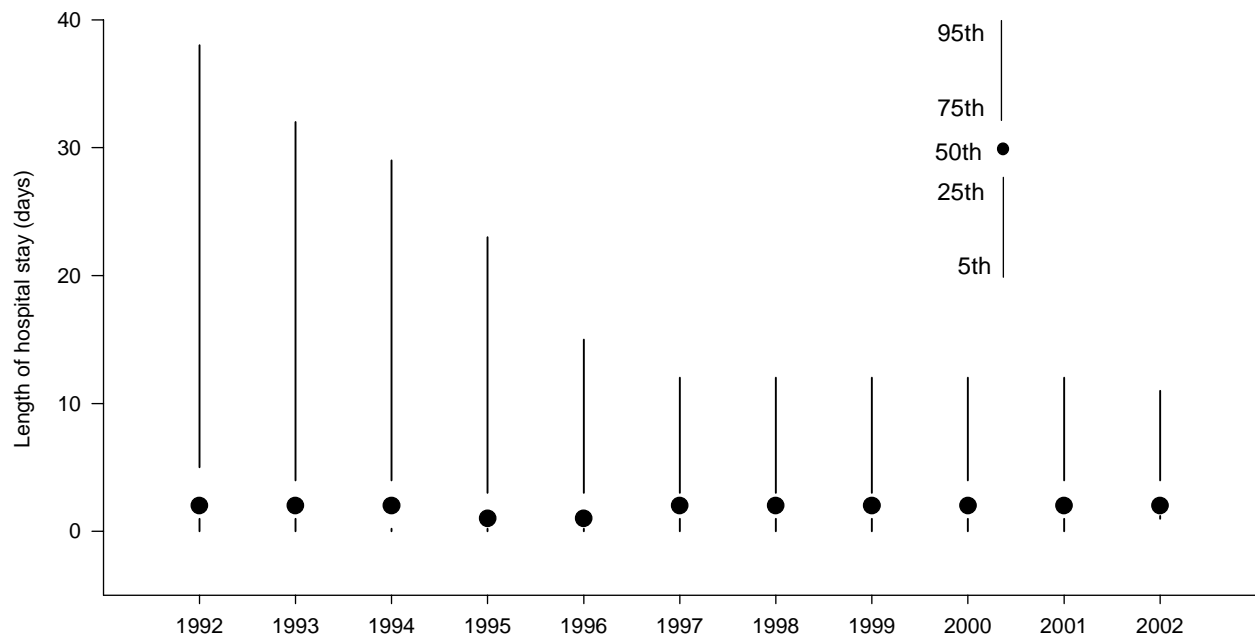


Table 2. Most frequent diagnoses during hospitalization, by major diagnostic category, males, US Armed Forces, 2002

Diagnostic category (ICD-9 codes)	No.	%	Diagnostic category	No.	%
Infectious and parasitic diseases (001-139)	1,105		Digestive system (520 - 579)	5,972	
Meningitis due to enterovirus	235	21.3	Acute appendicitis	1,554	26.0
Viral and chlamydial infection	160	14.5	Dentofacial anomalies, including malocclusion	562	9.4
Intestinal infections due to other organism	134	12.1	Diseases of esophagus	471	7.9
Infectious mononucleosis	71	6.4	Other noninfective gastroenteritis and colitis	418	7.0
Streptococcal sore throat and scarlet fever	59	5.3	Inguinal hernia	348	5.8
Neoplasms (140 - 239)	959		Genitourinary system (580 - 629)	1,147	
Cancer of prostate	95	9.9	Calculus of kidney and ureter	411	35.8
Cancer of testis	76	7.9	Other disorders of male genital organs	135	11.8
Cancer of brain	55	5.7	Urethral stricture	75	6.5
Cancer of thyroid gland	40	4.2	Acute renal failure	70	6.1
Benign neoplasm of bone and articular cartilage	37	3.9	Other disorders of urethra and urinary tract	67	5.8
Endocrine, nutrition, immunity (240 - 279)	493		Pregnancy complications (630 - 679)		
Diabetes mellitus	190	38.5	-	-	-
Disorders of fluid, electrolyte	174	35.3	-	-	-
Nontoxic nodular goiter	23	4.7	-	-	-
Thyrotoxicosis with or without goiter	22	4.5	-	-	-
Obesity and other hyperalimentation	16	3.2	-	-	-
Hematologic disorders (280 - 289)	256		Dermatological diseases (680 - 709)	1,524	
Diseases of white blood cells	72	28.1	Other cellulitis and abscess	1,128	74.0
Other diseases of blood and blood-forming organs	62	24.2	Pilonidal cyst	148	9.7
Purpura and other hemorrhagic conditions	40	15.6	Cellulitis and abscess of finger and toe	81	5.3
Hereditary hemolytic anemias	19	7.4	Other disorders of skin and subcutaneous tissue	23	1.5
Aplastic anemia	19	7.4	Contact dermatitis and other eczema	22	1.4
Mental disorders (290 - 319)	7,772		Musculoskeletal system (710 - 739)	5,335	
Adjustment reaction	2,778	35.7	Intervertebral disc disorders	1,522	28.5
Affective psychoses	1,591	20.5	Internal derangement of knee	806	15.1
Alcohol dependence syndrome	702	9.0	Other derangement of joint	572	10.7
Personality disorders	465	6.0	Other disorders of bone and cartilage	343	6.4
Neurotic disorders	462	5.9	Peripheral enthesopathies and allied syndromes	300	5.6
Nervous system (320 - 389)	692		Congenital anomalies (740 - 759)	252	
Migraine	101	14.6	Other congenital musculoskeletal anomalies	50	19.8
Epilepsy	51	7.4	Other congenital anomalies of circulatory system	37	14.7
Mononeuritis of upper limb and mononeuritis	43	6.2	Bulbus cordis and cardiac septal closure	25	9.9
Other conditions of brain	37	5.3	Other congenital anomalies of digestive system	22	8.7
Other and unspecified disorders	36	5.2	Congenital anomalies of urinary system	22	8.7
Circulatory system (390 - 459)	1,954		Ill-defined conditions (780 - 799)	3,562	
Cardiac dysrhythmias	379	19.4	Symptoms involving respiratory system and chest	1,375	38.6
Other forms of chronic ischemic heart disease	243	12.4	General symptoms	894	25.1
Acute myocardial infarction	240	12.3	Other symptoms involving abdomen and pelvis	493	13.8
Hemorrhoids	122	6.2	Other ill-defined and unknown causes of morbidity	322	9.0
Acute pulmonary heart disease	98	5.0	Symptoms involving head and neck	140	3.9
Respiratory system (460 - 519)	2,640		Injury and poisoning (800 - 999)	8,637	
Pneumonia, organism unspecified	907	34.4	Fracture of ankle	597	6.9
Peritonsillar abscess	248	9.4	Other complications of procedures	571	6.6
Pneumothorax	211	8.0	Fracture of face bones	442	5.1
Asthma	158	6.0	Injury, other and unspecified	410	4.7
Acute tonsillitis	134	5.1	Fracture of tibia and fibula	316	3.7

Table 3. Most frequent diagnoses during hospitalization, by major diagnostic category, females, US Armed Forces, 2002

Diagnostic category (ICD-9 codes)	No.	%	Diagnostic category	No.	%
Infectious and parasitic diseases (001-139)	271		Digestive system (520 - 579)	1,409	
Meningitis due to enterovirus	58	21.4	Acute appendicitis	237	16.8
Intestinal infections due to other organism	56	20.7	Dentofacial anomalies, including malocclusion	227	16.1
Viral and chlamydial infection	39	14.4	Cholelithiasis	142	10.1
Streptococcal sore throat and scarlet fever	17	6.3	Other noninfective gastroenteritis and colitis	129	9.2
Infectious mononucleosis	15	5.5	Diseases of esophagus	65	4.6
Neoplasms (140 - 239)	887		Genitourinary system (580 - 629)	1,837	
Uterine leiomyoma	489	55.1	Pain & other symptoms	232	12.6
Benign neoplasm of ovary	53	6.0	Infections of kidney	226	12.3
Cancer of thyroid gland	39	4.4	Noninflammatory disorder ovary, fallopian tube	212	11.5
Cancer of female breast	36	4.1	Menstrual disorder, other abnormal bleeding	188	10.2
Carcinoma in situ of breast and genitourinary	28	3.2	Inflamtory dis,ovary fallopian tube,pelvic	183	10.0
Endocrine, nutrition, immunity (240 - 279)	194		Pregnancy complications (630 - 679)	17,091	
Disorders of fluid, electrolyte	58	29.9	Trauma to perineum and vulva during delivery	4,142	29.0
Nontoxic nodular goiter	35	18.0	Delivery in a completely normal case	1,378	9.6
Thyrotoxicosis with or without goiter	19	9.8	Abnormality of forces of labor	1,137	8.0
Obesity and other hyperalimentation	16	8.2	Early or threatened labor	1,090	7.6
Diabetes mellitus	15	7.7	Other problems with amniotic cavity/membranes	965	6.7
Hematologic disorders (280 - 289)	86		Dermatological diseases (680 - 709)	201	
Other and unspecified anemias	18	20.9	Other cellulitis and abscess	102	50.7
Iron deficiency anemias	17	19.8	Other hypertrophic and atrophic conditions	26	12.9
Purpura and other hemorrhagic conditions	17	19.8	Pilonidal cyst	20	10.0
Diseases of white blood cells	16	18.6	Other disorders of skin and subcutaneous tissue	13	6.5
Other diseases of blood and blood-forming organs	12	14.0	Disorders of sweat glands	8	4.0
Mental disorders (290 - 319)	2,481		Musculoskeletal system (710 - 739)	853	
Adjustment reaction	917	37.0	Intervertebral disc disorders	183	21.5
Affective psychoses	704	28.4	Other derangement of joint	100	11.7
Personality disorders	194	7.8	Internal derangement of knee	92	10.8
Depressive disorder, not elsewhere classified	174	7.0	Other disorders of bone and cartilage	66	7.7
Neurotic disorders	168	6.8	Other and unspecified disorders of back	62	7.3
Nervous system (320 - 389)	250		Congenital anomalies (740 - 759)	43	
Migraine	96	38.4	Other congenital anomalies of digestive system	7	16.3
Other conditions of brain	17	6.8	Other congenital musculoskeletal anomalies	7	16.3
Other and unspecified disorders	15	6.0	Congenital anomalies of ear, face and neck	5	11.6
Mononeuritis of upper limb and mononeuritis	13	5.2	Other congenital anomalies of limbs	5	11.6
Multiple sclerosis	12	4.8	Congenital anomalies of genital organs	4	9.3
Circulatory system (390 - 459)	232		Ill-defined conditions (780 - 799)	1,181	
Cardiac dysrhythmias	49	21.1	Other symptoms involving abdomen and pelvis	325	27.5
Other venous embolism and thrombosis	23	9.9	Other ill-defined and unknown causes of morbidity	247	20.9
Acute pulmonary heart disease	20	8.6	General symptoms	213	18.0
Hemorrhoids	19	8.2	Symptoms involving respiratory system and chest	201	17.0
Acute myocardial infarction	11	4.7	Symptoms involving digestive system	59	5.0
Respiratory system (460 - 519)	413		Injury and poisoning (800 - 999)	1,100	
Pneumonia, organism unspecified	80	19.4	Other complications of procedures, NEC	162	14.7
Asthma	61	14.8	By analgesics, antipyretics, antirheumatics	71	6.5
Acute pharyngitis	37	9.0	Fracture of ankle	55	5.0
Peritonsillar abscess	36	8.7	Injury, other and unspecified	49	4.5
Acute tonsillitis	24	5.8	Complications to certain specified procedures	49	4.5

**Table 4. Injury hospitalizations, by causal agent,*
US Armed Forces, 2002.**

Cause	Number	Percent
Unintentional		
Unknown	2487	25.5
Falls and miscellaneous	1742	17.9
Land transport	1279	13.1
Complications of medical care	1074	11.0
Athletics	886	9.1
Machinery, tools	387	4.0
Poisons and fire	351	3.6
Environmental factors	320	3.3
Air transport	295	3.0
Guns, explosives, except in war	143	1.5
Water transport	41	0.4
Intentional		
Violence	400	4.1
Self-inflicted	285	2.9
War	47	0.6

* Causal agents were documented by NATO Standardization Agreement (STANAG) codes.

Ambulatory Visits among Active Duty Members, US Armed Forces, 2002

This report documents frequencies, rates, trends, and characteristics of ambulatory visits by active duty US military personnel during 2002. For this summary, ambulatory visits were categorized based on the first three digits of the primary ICD-9-CM code (International Classification of Diseases, 9th revision, clinical modifications). The source of data was the Defense Medical Surveillance System.

Frequencies, rates, and trends. During 2002, there were 10,025,019 ambulatory visits by active duty servicemembers (table 1). There were approximately 4.8% fewer ambulatory visits in 2002 than in 2001 (figure 1). The crude rate in 2002 was 7,210.5 per 1,000 person years; thus, the average number of outpatient visits for each servicemember during 2002 was 7.2.

Frequency and nature of ambulatory visits, by diagnostic categories. The ranking of major diagnostic categories by number of attributable visits was unchanged from 2001. As in previous years, more than 50% of all 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 current illnesses or injuries (e.g., prophylactic immunizations, management of normal pregnancies, routine physical examinations, health promotion counseling). Of all injury/illness-related categories, musculoskeletal disorders, injuries and poisonings, and mental disorders accounted for the most ambulatory visits. From calendar year 2001 to 2002, the largest category-specific increases (proportional) in ambulatory visit diagnoses were for pregnancy-related conditions (+26.5%), congenital disorders (+17.6%), and mental disorders (+12.9%). The largest category-specific decreases (proportional) in reported ambulatory visits were for hematologic (-12.2%), respiratory (-12.1%), and infectious (-10.4%) disorders.

During 2002, the most frequent diagnoses among men were disorders of refraction and accommodation (n= 260,020), unspecified disorders

of the joint (n= 258,260) and of the back (n=226,986), acute upper respiratory infections of multiple/unspecified site(s) (n=173,093), and alcohol dependence syndromes (n=151,754) (table 2). Among women, the most frequent diagnoses were unspecified disorders of the joint (n=76,112) and of the back (n=69,299), disorders of refraction and accommodation (n=66,640), adjustment reactions (n=35,696), and peripheral enthesopathies and allied syndromes (n=34,759) (table 3).

Rates, by gender and age. The crude ambulatory visit rate (all causes) was approximately 2-times higher among women (rate: 12,722 per 1,000 p-yrs) than men (rate: 6,240 per 1,000 person-years). In addition, women had higher rates than men for every category of diagnoses except congenital disorders (figure 2). For most diagnostic categories, relationships between ambulatory visit rates and age were similar among men and women (figure 2). However, for genitourinary disorders, rates increased markedly with age among men but were fairly stable with age among women (figure 2).

Duty restrictions, by diagnosis categories. Dispositions after ambulatory visits provide insights into the relative severities and operational impacts of various conditions. For more than 85% of all ambulatory visits, servicemembers returned to duty without limitations; after approximately 10% of all visits, servicemembers were restricted to light or limited duties; and after approximately 1.7% of all visits, servicemembers were sent to quarters for convalescence. Visits for musculoskeletal disorders, injuries and poisonings, and respiratory disorders were the most likely to result in light or limited duty restrictions (figure 3). Visits for respiratory disorders were the most likely to result in return to quarters dispositions.

Analysis and report by Barbara Nagaraj, MPH, Analysis Group, Army Medical Surveillance Activity.

**Table 1. Ambulatory visits, by major diagnostic categories,
US Armed Forces, 1998, 2000, 2002**

Major diagnostic category	1998		2000		2002	
	Number	(Rank)	Number	(Rank)	Number	(Rank)
Other contact with health services	3,505,326	(1)	4,094,758	(1)	4,132,424	(1)
Musculoskeletal	1,331,146	(2)	1,529,424	(2)	1,429,615	(2)
Injury	795,239	(3)	878,820	(3)	839,102	(3)
Mental	415,464	(6)	569,478	(6)	642,935	(4)
Nervous	496,242	(5)	595,998	(5)	634,688	(5)
Respiratory	566,880	(4)	689,752	(4)	606,481	(6)
Ill-defined	392,382	(7)	478,459	(7)	450,040	(7)
Infectious	280,124	(8)	304,802	(8)	273,223	(8)
Dermatologic	249,892	(9)	275,378	(9)	270,436	(9)
Genitourinary	197,143	(11)	203,195	(10)	195,586	(10)
Digestive	197,165	(10)	201,878	(11)	185,944	(11)
Endocrine	107,819	(12)	122,066	(12)	117,139	(12)
Circulatory	107,682	(13)	115,409	(13)	104,555	(13)
Neoplasms	68,321	(14)	70,685	(14)	64,240	(14)
Pregnancy	32,132	(15)	38,228	(15)	48,344	(15)
Congenital	14,624	(16)	16,034	(16)	18,856	(16)
Hematologic	10,101	(17)	12,992	(17)	11,411	(17)

Figure 1. Rate of ambulatory visits by calendar year, US Armed Forces, 1998-2002.

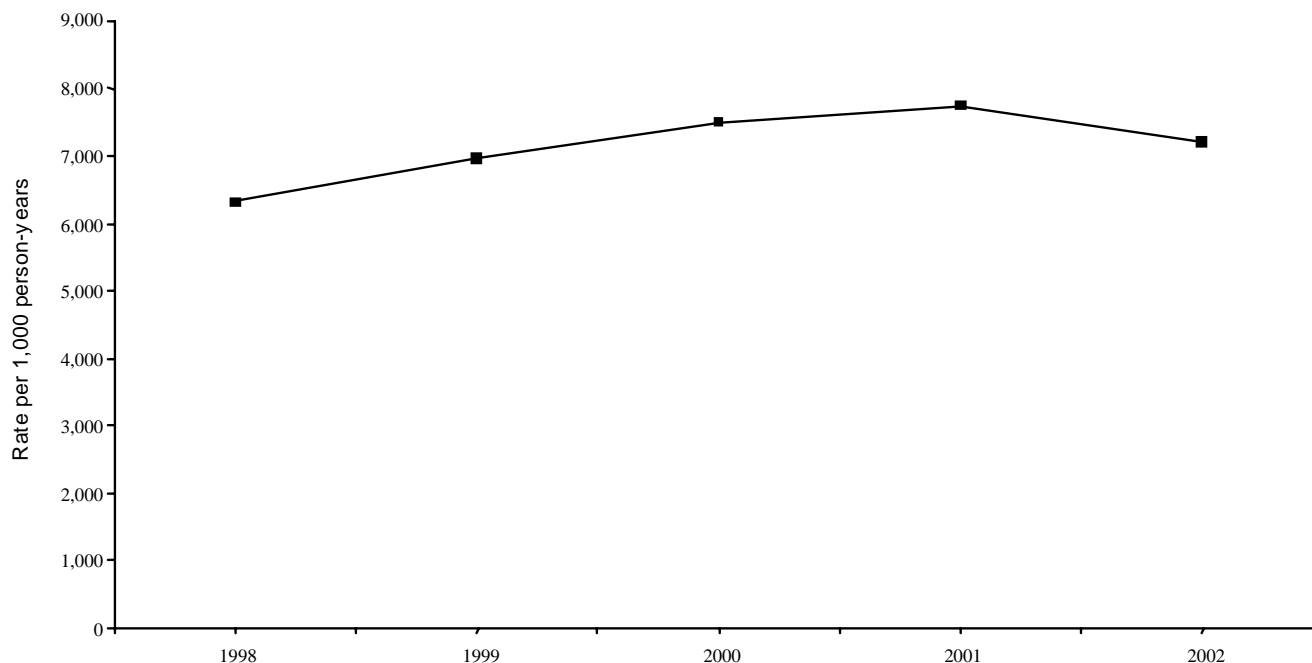
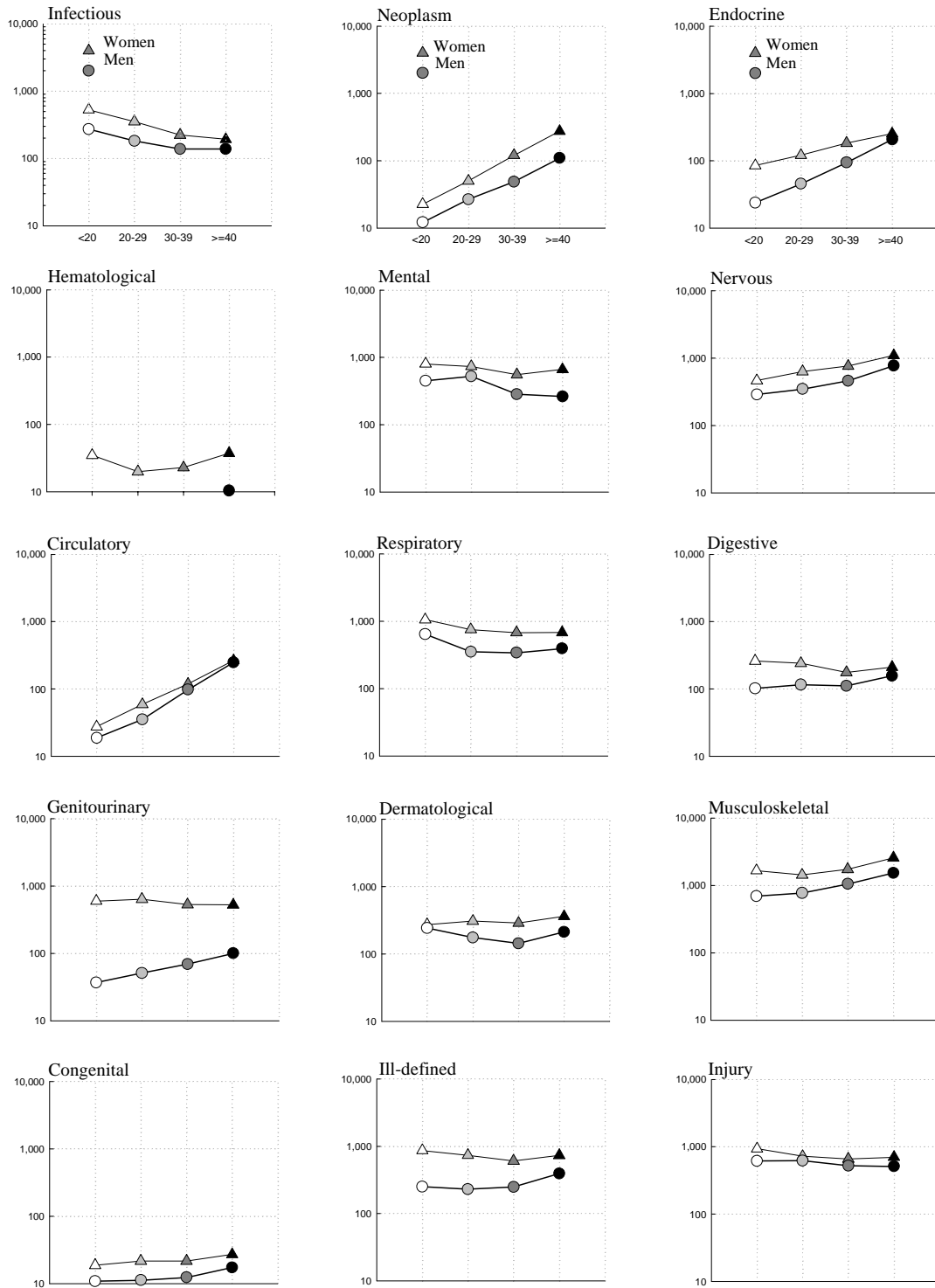


Figure 2. Rate* of ambulatory visits, by age and gender, US Armed Forces, 2002.



*Rates expressed as ambulatory visits per 1,000 person-years

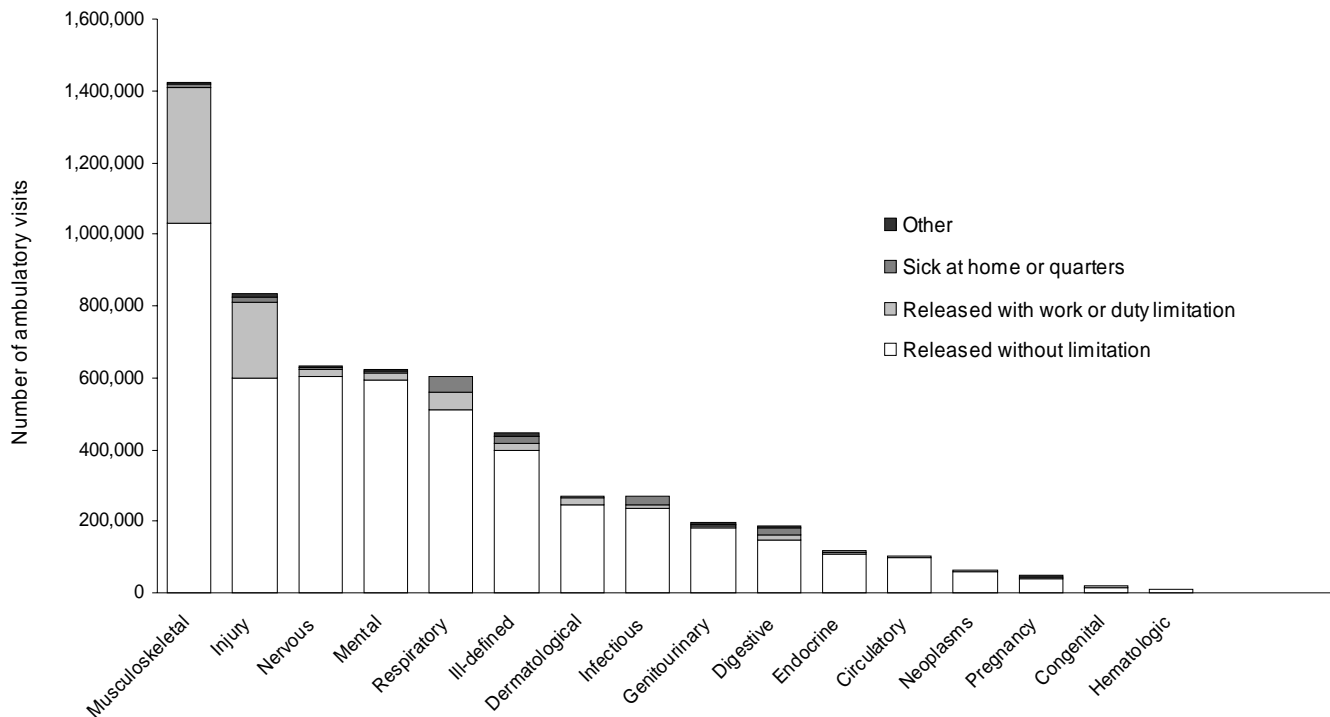
Table 2. Most frequent diagnoses during ambulatory visits by major diagnostic category, males, US Armed Forces, 2002

Diagnostic category	No.	%	Diagnostic category	No.	%
Infectious and parasitic diseases (001-139)	204,431		Digestive system (520 - 579)	139,004	
Viral and chlamydial infections classed elsewhere	60,343	29.5	Other noninfective gastroenteritis and colitis	43,185	31.1
Other diseases due to viruses and chlamydia	40,735	19.9	Diseases of esophagus	22,766	16.4
Dermatophytosis	22,785	11.1	Inguinal hernia	11,211	8.1
Intestinal infections due to other organism	10,051	4.9	Gastritis and duodenitis	8,325	6.0
Htlv-iii/lav infection with specified condition	9,124	4.5	Other hernia of abdominal cavity w/o obstruction	6,318	4.5
Neoplasms (140 - 239)	47,320		Genitourinary system (580 - 629)	70,792	
Benign neoplasm of skin	11,987	25.3	Other disorders of urethra and urinary tract	11,542	16.3
Lipoma	7,364	15.6	Calculus of kidney and ureter	10,460	14.8
Neoplasm of uncertain behavior	3,304	7.0	Other disorders of male genital organs	9,569	13.5
Cancer of testis	2,060	4.4	Orchitis and epididymitis	8,414	11.9
Other cancer of skin	1,854	3.9	Disorders of penis	4,722	6.7
Endocrine, nutrition, immunity (240 - 279)	87,508		Pregnancy complications (630 - 679)		
Disorders of lipid metabolism	26,910	30.8	-	-	-
Obesity and other hyperalimentation	26,198	29.9	-	-	-
Diabetes mellitus	14,144	16.2	-	-	-
Disorders of fluid, electrolyte, acid-base balance	5,595	6.4	-	-	-
Gout	4,942	5.6	-	-	-
Hematologic disorders (280 - 289)	6,476		Skin diseases (680 - 709)	207,336	
Other and unspecified anemias	1,330	20.5	Contact dermatitis and other eczema	36,489	17.6
Hereditary hemolytic anemias	1,193	18.4	Diseases of sebaceous glands	28,950	14.0
Other diseases of blood and blood-forming organs	1,095	16.9	Other cellulitis and abscess	26,812	12.9
Coagulation defects	685	10.6	Diseases of hair and hair follicles	22,476	10.8
Purpura and other hemorrhagic conditions	567	8.8	Other disorders of skin/subcutaneous tissue	15,274	7.4
Mental disorders (290 - 319)	497,938		Musculoskeletal system (710 - 739)	1,091,284	
Alcohol dependence syndrome	151,754	30.5	Other and unspecified disorders of joint	258,260	23.7
Nondependent abuse of drugs	114,096	22.9	Other and unspecified disorders of back	226,986	20.8
Adjustment reaction	70,313	14.1	Peripheral enthesopathies and allied syndromes	126,202	11.6
Neurotic disorders	39,637	8.0	Other disorders of soft tissues	89,407	8.2
Affective psychoses	34,098	6.8	Internal derangement of knee	81,126	7.4
Nervous system (320 - 389)	493,020		Congenital anomalies (740 - 759)	14,331	
Disorders of refraction and accommodation	260,020	52.7	Certain congenital musculoskeletal deformities	5,000	34.9
Hearing loss	32,570	6.6	Other congenital musculoskeletal anomalies	2,848	19.9
Disorders of conjunctiva	28,664	5.8	Other congenital anomalies of limbs	1,620	11.3
Other disorders of ear	15,276	3.1	Congenital anomalies of the integument	1,201	8.4
Suppurative and unspecified otitis media	14,518	2.9	Congenital anomalies of genital organs	765	5.3
Circulatory system (390 - 459)	86,703		Ill-defined conditions (780 - 799)	300,000	
Essential hypertension	45,951	53.0	Symptoms involving respiratory system and chest	59,333	19.8
Hemorrhoids	10,565	12.2	General symptoms	47,876	16.0
Diseases of capillaries	5,994	6.9	Symptoms involving head and neck	35,954	12.0
Cardiac dysrhythmias	4,651	5.4	Other symptoms involving abdomen and pelvis	35,364	11.8
Other forms of chronic ischemic heart disease	3,160	3.6	Symptoms involving skin / integumentary tissue	26,447	8.8
Respiratory system (460 - 519)	447,382		Injury and poisoning (800 - 999)	687,114	
Acute upper respiratory infection of multiple sites	173,093	38.7	Sprains and strains of ankle and foot	86,668	12.6
Allergic rhinitis	58,308	13.0	Sprains and strains of knee and leg	80,135	11.7
Acute pharyngitis	50,635	11.3	Sprains and strains of other and unspecified	54,783	8.0
Acute sinusitis	33,472	7.5	Sprains and strains of shoulder and upper arm	37,736	5.5
Acute bronchitis and bronchiolitis	25,116	5.6	Other and ill-defined sprains and strains	35,929	5.2

Table 3. Most frequent diagnoses during ambulatory visits by major diagnostic category, females, US Armed Forces, 2002

Diagnostic category	No.	%	Diagnostic category	No.	%
Infectious and parasitic diseases (001-139)	68,792		Digestive system (520 - 579)	46,940	
Viral and chlamydial infection classed elsewhere	22,699	33.0	Other noninfective gastroenteritis and colitis	18,205	38.8
Other diseases due to viruses and chlamydia	9,709	14.1	Diseases of esophagus	5,403	11.5
Candidiasis	7,058	10.3	Functional digestive disorders	5,073	10.8
Dermatophytosis	4,368	6.3	Gastritis and duodenitis	3,964	8.4
Intestinal infections due to other organism	4,137	6.0	Disorders of function of stomach	1,696	3.6
Neoplasms (140 - 239)	16,920		Genitourinary system (580 - 629)	124,794	
Benign neoplasm of skin	3,927	23.2	Other disorders of urethra and urinary tract	22,692	18.2
Cancer of female breast	2,457	14.5	Inflammatory disease of cervix, vagina and vulva	19,158	15.4
Uterine leiomyoma	1,759	10.4	Menstrual disorder, other abnormal bleeding	15,810	12.7
Neoplasm of uncertain behavior	1,053	6.2	Pain & other symptoms associated with genitalia	14,022	11.2
Lipoma	995	5.9	Noninflammatory disorders of cervix	13,182	10.6
Endocrine, nutrition, immunity (240 - 279)	29,631		Pregnancy complications (630 - 679)	47,149	
Obesity and other hyperalimentation	13,484	45.5	Early or threatened labor	8,094	56.6
Acquired hypothyroidism	3,442	11.6	Other current conditions in mother complications	5,213	36.5
Disorders of fluid, electrolyte, acid-based balance	2,802	9.5	Hemorrhage in early pregnancy	5,110	35.7
Disorders of lipid metabolism	2,597	8.8	Other complications of pregnancy	4,014	28.1
Diabetes mellitus	1,775	6.0	Hypertension complicating pregnancy, childbirth	2,505	17.5
Hematologic disorders (280 - 289)	4,935		Skin diseases (680 - 709)	63,100	
Other and unspecified anemias	1,429	29.0	Diseases of sebaceous glands	12,683	20.1
Iron deficiency anemias	1,368	27.7	Contact dermatitis and other eczema	11,318	17.9
Other deficiency anemias	706	14.3	Other disorders of skin and subcutaneous tissue	6,452	10.2
Other diseases of blood and blood-forming organs	442	9.0	Other cellulitis and abscess	4,843	7.7
Purpura and other hemorrhagic conditions	335	6.8	Diseases of hair and hair follicles	3,704	5.9
Mental disorders (290 - 319)	144,997		Musculoskeletal system (710 - 739)	338,331	
Adjustment reaction	35,696	24.6	Other and unspecified disorders of joint	76,112	22.5
Affective psychoses	22,038	15.2	Other and unspecified disorders of back	69,299	20.5
Neurotic disorders	19,102	13.2	Peripheral enthesopathies and allied syndrome	34,759	10.3
Alcohol dependence syndrome	17,811	12.3	Other disorders of soft tissues	33,415	9.9
Depressive disorder, not elsewhere classified	16,055	11.1	Internal derangement of knee	19,980	5.9
Nervous system (320 - 389)	141,668		Congenital anomalies (740 - 759)	4,525	
Disorders of refraction and accommodation	66,640	47.0	Certain congenital musculoskeletal deformities	1,535	33.9
Migraine	15,534	11.0	Congenital anomalies of the integument	787	17.4
Disorders of conjunctiva	9,223	6.5	Other congenital anomalies of limbs	579	12.8
Mononeuritis of upper limb and mononeuritis	6,387	4.5	Other congenital musculoskeletal anomalies	524	11.6
Suppurative and unspecified otitis media	4,414	3.1	Congenital anomalies of urinary system	162	3.6
Circulatory system (390 - 459)	17,852		Ill-defined conditions (780 - 799)	150,040	
Essential hypertension	6,564	36.8	Other symptoms involving abdomen and pelvis	31,671	21.1
Hemorrhoids	2,578	14.4	Symptoms involving head and neck	20,956	14.0
Diseases of capillaries	2,473	13.9	Symptoms involving respiratory system	18,454	12.3
Varicose veins of lower extremities	1,217	6.8	Nonspecific abnormal histological and immunity	17,461	11.6
Cardiac dysrhythmias	1,187	6.6	General symptoms	16,803	11.2
Respiratory system (460 - 519)	159,099		Injury and poisoning (800 - 999)	151,988	
Acute upper respiratory infection of multiple sites	57,453	36.1	Sprains and strains of ankle and foot	19,180	12.6
Allergic rhinitis	23,163	14.6	Sprains and strains of other and unspecified	17,601	11.6
Acute pharyngitis	18,299	11.5	Sprains and strains of knee and leg	15,801	10.4
Acute sinusitis	15,103	9.5	Other and ill-defined sprains and strains	9,230	6.1
Asthma	10,220	6.4	Certain adverse effects, not elsewhere classified	6,588	4.3

Figure 3. Dispositions after ambulatory visits, by major categories, US Armed Forces, 2002.



Estimates of Absolute and Relative Morbidity Burdens Attributable to Various Illnesses and Injuries, US Armed Forces, 2002

Priorities and resources to counter specific illnesses and injuries depend on perceptions regarding their relative importance. This report is the third in a series of MSMR articles that estimate morbidity burdens attributable to various illnesses and injuries among members of the US Armed Forces.

Several classification systems/measures have been developed to quantify public health burdens attributable to various illnesses and injuries in defined populations and settings. Not surprisingly, different classification systems/measures lead to different rankings of illness and injury-specific morbidity burdens. For example, in a given population or setting, the illnesses and injuries that account for the most hospitalizations may differ from those that account for the most outpatient encounters; furthermore, the illnesses and injuries that account for the most medical encounters overall may differ from those that affect the most individuals. Thus, in a given population or setting, the classification system or measure that is used to quantify illness and injury-specific morbidity burdens determines, to some extent, conclusions regarding their relative importance.

Methods. For this report (as for previous MSMR reports regarding the same subject), we modified the classification system used for the Global Burden of Disease Study.¹ In general, the system groups ICD-9-CM coded diagnoses that have common pathophysiologic or etiologic bases and/or significant international health policymaking importance. Our modifications included breaking out injuries (as for the monthly installation-specific injury reports that are produced by AMSA²) and other diagnoses (e.g., mental disorders) that have particular military importance. For our analysis, we combined servicemembers' inpatient and outpatient experiences for 2002 to estimate the numbers of medical encounters for, and the numbers of servicemembers affected by, each illness and injury-specific subgroup. We also quantified hospital bed-days associated with diagnostic subgroups to indicate their relative severities and associated health care costs.

Medical encounters, overall. Upper respiratory infections and injuries of the back/abdomen were the leading sources of medical encounters among active duty servicemembers in 2002. Knee injuries, disorders of refraction/accommodation, and "all other musculoskeletal disorders" were the next leading sources of medical encounters. More than half (52.3%) of all medical encounters during the year were attributable to the ten illnesses and injuries that accounted for the most encounters. In relation to broad categories, injuries and poisonings, mental disorders, and diseases of sense organs (e.g., vision abnormalities) accounted for the most medical encounters.

Individuals affected. More servicemembers received medical care for upper respiratory infections than any other condition. Disorders of refraction and accommodation, "all other signs and symptoms," unspecified injuries, and injuries involving the back/abdomen affected the next highest numbers of servicemembers. In relation to broad categories, injuries and poisonings, diseases of sense organs (e.g., vision abnormalities), and respiratory infections affected the largest numbers of servicemembers.

Hospital bed-days. During 2002, deliveries of newborn infants and complications of pregnancy accounted for the first and third most hospital bed-days, respectively. Mood, adjustment, and substance abuse disorders accounted for the second, fourth, and fifth most hospital bed-days, respectively. More than half (53.5%) of all hospital bed-days during the year were attributable to the ten illnesses and injuries that accounted for the most bed-days. In relation to broad categories, mental disorders, pregnancies and deliveries, and injuries and poisonings accounted for the most hospital bed-days.

Relationships of morbidity burden indicators. In general, the number of individuals affected by a particular condition is strongly correlated with the number of medical encounters attributable to that

condition (linear regression, total medical encounters = 1.74 x individuals affected, $R^2=0.84$). However, the number of hospital bed-days attributable to a condition is not strongly correlated with either the number of individuals affected by or the number of medical encounters attributable to the condition (figure 1). Thus, in the US military, relatively unique insights into morbidity burdens may be gained by assessing (1) hospital bed-days attributable to particular conditions; and (2) either the number of individuals affected by or the total number of medical encounters attributable to particular conditions.

Editorial comment: Illnesses and injuries are “burdens” to the US Armed Forces to the extent that they degrade the health, fitness, and operational capabilities of servicemembers and consume resources for diagnosis, treatment, rehabilitation, and disability compensation. Arguably, prevention priorities (and associated resources) should target illnesses and injuries that account for the largest morbidity burdens.

The summaries presented here document that estimates of “morbidity burdens” attributable to various illnesses and injuries among US servicemembers vary based on the criteria used for grouping diagnoses and the methods used for quantifying burdens. For example, in this summary, mental disorders and pregnancy-related conditions accounted for relatively large numbers of hospital bed days but relatively few total medical encounters. Based on hospital usage alone, these categories would be considered the major sources of morbidity among US servicemembers. On the other hand, upper respiratory infections and disorders of refraction/accommodation (e.g., vision disorders) affected very large numbers of servicemembers but accounted for very few hospital bed-days.

During calendar year 2002, the ten leading causes of medical encounters accounted for more than half of all medical encounters and the ten conditions that required the most hospital bed-days accounted for more than half of all hospital bed-days. Of note,

only substance abuse disorders and injuries of the back/abdomen were among the ten leading sources of both medical encounters and hospital bed-days. In addition, there were 13 illnesses and injuries among the top 25 in all three morbidity burden-related rankings summarized for this report: of these, 6 were injuries (to the back/abdomen; knee; foot/ankle; arm/shoulder; head/neck; and unspecified); one was a mental disorder (adjustment); and the others were non-specific groupings (e.g., “unspecified,” “all others”).

In summary, this analysis documents that relative rankings of morbidity burdens among active duty servicemembers vary significantly depending on methods used to classify illnesses and injuries and on metrics used to quantify burdens. This summary also documents that, regardless of methods used to quantify burdens, a relatively small number of illnesses and injuries account for a majority of all morbidity among US servicemembers. We suggest that illnesses and injuries that account for disproportionately large morbidity burdens should be targeted for prevention efforts and given high priorities for prevention resources.

Data analysis and report by Karen E. Campbell, MS, Analysis Group, Army Medical Surveillance Activity.

References

1. Army Medical Surveillance Activity. Relative burdens of selected illnesses and injuries: US Armed Forces, 2000, MSMR 2001, 7(4), 20-23.
2. Army Medical Surveillance Activity. Relative burdens of selected illnesses and injuries: US Armed Forces, 2001, MSMR 2002, 8(2), 24-28.
3. The global burden of disease: A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020. Murray, CJ and Lopez, AD, eds. Harvard School of Public Health (on behalf of the World Health Organization and The World Bank), 1996, 120-2.
4. Army Medical Surveillance Activity. Monthly installation injury surveillance reports: surveillance of injuries and their impacts at the installation level, US Armed Forces. MSMR 2001, 7(8), 7-9.

Figure 1. Medical encounters, individuals affected, and hospital bed days, by burden of disease categories, US Armed Forces, 2002.

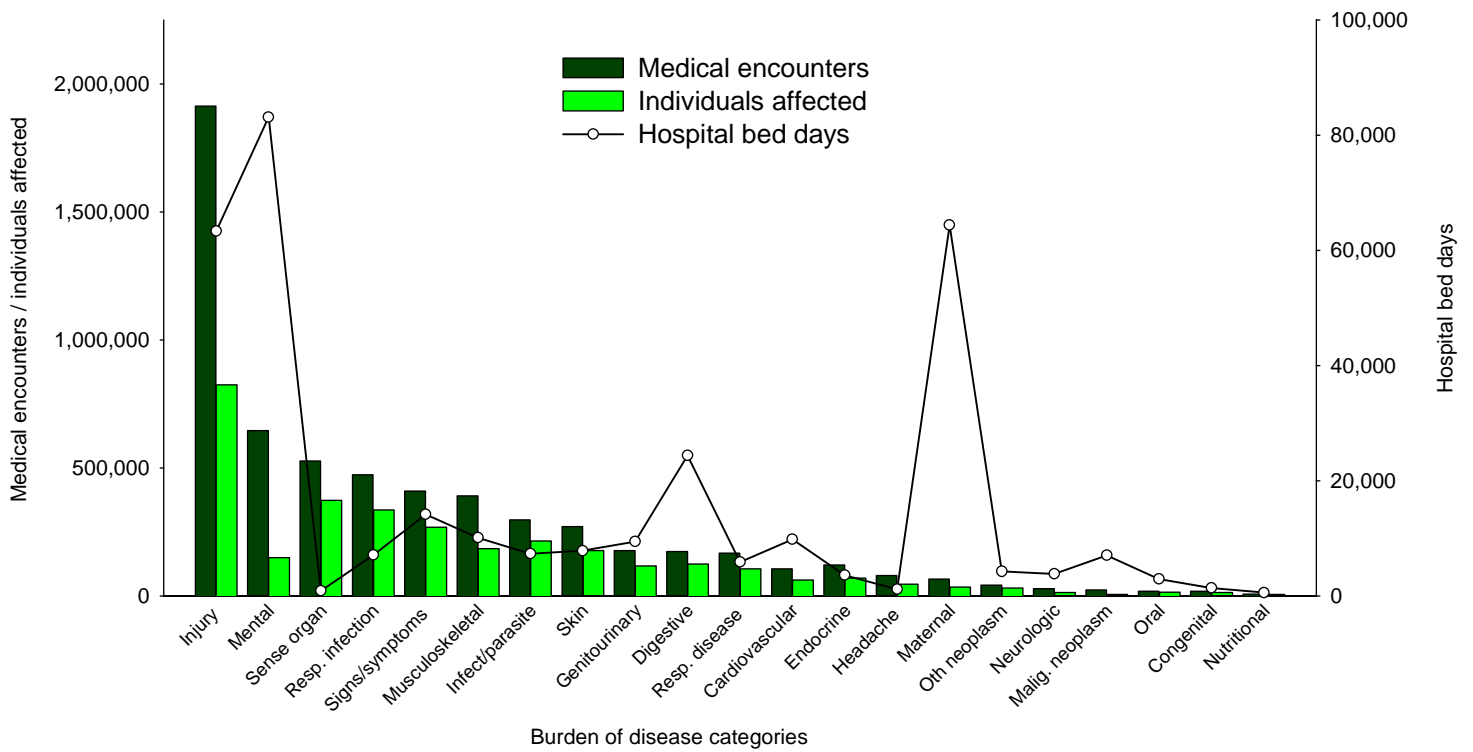


Table 1. Morbidity burdens attributable to selected diseases and injuries, US Armed Forces, 2002

Category	Medical encounters ¹		Individuals affected ²		Hospital bed days	
	No.	Rank	No.	Rank	No.	Rank
Injury and poisoning						
Back and abdomen	381,934	(2)	149,081	(5)	11,262	(8)
Knee	357,268	(3)	113,713	(9)	4,267	(23)
Foot and ankle	293,611	(7)	127,872	(7)	5,495	(17)
Arm and shoulder	260,481	(9)	81,906	(12)	5,043	(18)
Unspecified injury	246,094	(10)	152,885	(4)	4,397	(22)
Hand and wrist	129,822	(14)	65,572	(13)	2,885	(31)
Head and neck	117,572	(15)	60,768	(15)	12,349	(7)
Leg	69,422	(23)	29,118	(28)	6,331	(14)
Environmental	20,872	(48)	16,734	(43)	1,155	(48)
Other injury from external causes	16,651	(52)	12,114	(52)	352	(77)
Other complications, not otherwise specified	7,813	(69)	6,060	(62)	6,500	(13)
Poisoning, nondrug	2,692	(86)	1,969	(78)	344	(78)
Poisoning, drugs	1,685	(94)	1,469	(80)	2,276	(37)
Other dislocations and sprains (excl. ankle/foot)	9	(126)	9	(126)	0	(125)
Other superficial injury	1	(127)	1	(127)	0	(125)
All other injury	7,367	(70)	5,224	(68)	658	(60)
Mental disorders						
Substance abuse disorders	295,077	(6)	31,267	(26)	15,324	(5)
Mood	116,591	(16)	30,477	(27)	28,205	(2)
Adjustment	96,175	(17)	32,592	(25)	19,660	(4)
Anxiety	47,117	(30)	16,156	(45)	2,952	(29)
Tobacco dependence	22,059	(47)	11,171	(55)	4	(123)
Personality	16,521	(53)	6,530	(61)	4,134	(24)
Psychotic	7,315	(71)	1,170	(87)	8,482	(9)
Somatoform	4,236	(79)	1,452	(81)	584	(65)
All other mental disorders	40,586	(34)	19,024	(42)	3,772	(27)
Musculoskeletal disease						
Other back problems	53,548	(28)	23,159	(37)	2,582	(35)
Osteoarthritis	9,157	(65)	5,769	(64)	573	(66)
Other knee disorders	8,950	(66)	5,002	(69)	787	(55)
Other shoulder disorders	7,835	(68)	4,378	(71)	288	(82)
Rheumatoid arthritis	2,048	(91)	962	(93)	97	(99)
All other musculoskeletal disease	309,529	(5)	145,304	(6)	5,764	(15)
Sense organ diseases						
Refraction/accommodation	326,647	(4)	239,779	(2)	0	(125)
Glaucoma	11,740	(63)	7,891	(60)	10	(117)
Cataracts	1,601	(95)	1,086	(89)	10	(117)
All other sense organ diseases	187,497	(11)	125,187	(8)	855	(53)
Respiratory infections						
Upper respiratory	385,114	(1)	266,963	(1)	1,461	(43)
Lower respiratory	56,490	(27)	42,738	(22)	5,570	(16)
Otitis media	32,370	(39)	25,998	(32)	64	(102)
Signs and symptoms						
Respiratory and chest	79,363	(21)	54,126	(16)	3,798	(26)
Abdomen and pelvis	67,850	(24)	47,231	(20)	2,762	(32)
All other signs and symptoms	262,265	(8)	166,718	(3)	7,590	(11)

1. Medical encounters: hospitalizations and ambulatory visits.

2. Individuals affected: individuals with a hospitalization or ambulatory visit.

Table 1. (Continued) Morbidity burdens attributable to selected diseases and injuries, US Armed Forces, 2002

Category	Medical encounters ¹		Individuals affected ²		Hospital bed days	
	No.	Rank	No.	Rank	No.	Rank
Infectious and parasitic disease						
Unspecified viral infection	79,080	(22)	62,249	(14)	614	(63)
STDs	30,543	(41)	23,462	(35)	1,182	(47)
Diarrhoeal disease	26,885	(45)	23,596	(34)	755	(56)
Chlamydia	6,480	(73)	5,693	(65)	21	(111)
Tuberculosis	3,645	(80)	2,716	(76)	167	(92)
Hep B and C	2,949	(84)	1,450	(82)	121	(94)
Bacterial meningitis	420	(111)	273	(107)	274	(83)
Malaria	288	(114)	171	(110)	183	(88)
Intestinal nematode infection	173	(116)	159	(111)	7	(121)
Tropical	157	(117)	94	(114)	10	(117)
All other infectious and parasitic diseases	145,921	(13)	94,218	(11)	3,975	(25)
Skin disease						
Contact dermatitis	46,353	(31)	37,608	(24)	93	(100)
Sebaceous gland diseases	41,645	(33)	28,573	(30)	34	(109)
All other skin disease	182,680	(12)	111,168	(10)	7,714	(10)
Genitourinary disease						
Other urethra/urinary tract disorders	34,358	(37)	25,491	(33)	616	(62)
Menstrual disorders	16,108	(55)	12,341	(51)	549	(67)
Female genital pain	14,479	(58)	10,585	(56)	734	(58)
Other breast disorders	14,387	(59)	8,267	(59)	544	(68)
Kidney stones	12,390	(61)	5,647	(66)	1,493	(42)
Nephritis and nephosis	3,218	(82)	1,205	(86)	743	(57)
Benign prostatic hypertrophy	1,343	(99)	1,044	(90)	57	(106)
All other genitourinary disease	80,932	(19)	52,517	(17)	4,686	(20)
Digestive disease						
Other gastroenteritis and colitis	61,936	(26)	51,861	(18)	1,531	(41)
Esophagus disease	28,705	(44)	19,573	(40)	1,700	(40)
Inguinal hernia	11,931	(62)	5,944	(63)	963	(51)
Appendicitis	4,287	(78)	2,579	(77)	7,027	(12)
Peptic ulcer	1,311	(100)	985	(92)	620	(61)
Cirrhosis	1,297	(101)	643	(98)	121	(94)
All other digestive disease	64,313	(25)	42,402	(23)	12,424	(6)
Respiratory disease						
Allergic rhinitis	81,473	(18)	50,115	(19)	7	(121)
Asthma	31,559	(40)	16,374	(44)	716	(59)
COPD	13,539	(60)	11,969	(53)	301	(81)
Chronic sinusitis	11,384	(64)	8,545	(58)	239	(85)
All other respiratory disease	29,954	(42)	19,295	(41)	4,636	(21)
Endocrine disorders						
Obesity	39,714	(35)	20,755	(39)	125	(93)
Lipoid metabolism disorders	29,515	(43)	20,997	(38)	19	(112)
Diabetes mellitus	16,124	(54)	4,518	(70)	820	(54)
All other endocrine disorders	35,988	(36)	23,169	(36)	2,637	(33)
Cardiovascular disease						
Essential hypertension	52,587	(29)	28,259	(31)	210	(87)
Ischemic	5,906	(75)	3,155	(75)	2,610	(34)
Cerebrovascular	2,171	(89)	762	(95)	1,715	(39)
Inflammatory	1,196	(104)	588	(100)	459	(71)
Rheumatic	496	(110)	429	(102)	59	(105)
All other cardiovascular disease	44,091	(32)	28,807	(29)	4,755	(19)
Headache	79,874	(20)	46,441	(21)	1,198	(46)

1. Medical encounters: hospitalizations and ambulatory visits.

2. Individuals affected: individuals with a hospitalization or ambulatory visit.

Table 1. (Continued) Morbidity burdens attributable to selected diseases and injuries, US Armed Forces, 2002

Category	Medical encounters ¹		Individuals affected ²		Hospital bed days	
	No.	Rank	No.	Rank	No.	Rank
Maternal conditions						
Pregnancy complications	34,259	(38)	15,260	(46)	20,380	(3)
Delivery	23,155	(46)	14,104	(47)	42,130	(1)
Ectopic/miscarriage/abortion	6,655	(72)	4,189	(73)	1,329	(45)
Puerperium complications	1,285	(102)	1,021	(91)	530	(69)
Other neoplasms						
Benign skin neoplasm	15,919	(56)	12,760	(49)	15	(113)
Lipoma	8,397	(67)	5,614	(67)	108	(98)
Uterine leiomyoma	2,260	(88)	1,375	(84)	1,724	(38)
All other neoplasms	15,516	(57)	11,613	(54)	2,390	(36)
Neurologic conditions						
Other mononeuritis - upper and lower limbs	5,744	(76)	3,231	(74)	113	(97)
Epilepsy	2,847	(85)	1,393	(83)	314	(80)
Multiple sclerosis	1,752	(93)	433	(101)	324	(79)
Parkinson disease	93	(120)	47	(119)	4	(123)
All other neurologic conditions	17,342	(50)	8,978	(57)	3,060	(28)
Malignant neoplasms						
Lymphomas and multiple myeloma	4,486	(77)	743	(96)	1,049	(49)
Melanoma and skin cancer	3,163	(83)	1,793	(79)	180	(89)
Breast	2,532	(87)	361	(104)	173	(90)
Testicular	2,136	(90)	428	(103)	443	(73)
Leukaemia	1,479	(97)	131	(113)	959	(52)
Colon and rectum	1,478	(98)	291	(106)	416	(74)
Mouth and oropharynx	1,240	(103)	261	(108)	173	(90)
Brain	1,161	(105)	136	(112)	585	(64)
Prostate	1,005	(106)	307	(105)	385	(75)
Thyroid	647	(109)	247	(109)	243	(84)
Trachea, bronchus, and lung	341	(112)	73	(117)	487	(70)
Stomach	303	(113)	33	(121)	216	(86)
Cervical	211	(115)	43	(120)	88	(101)
Bladder	151	(118)	78	(115)	14	(115)
Ovarian	124	(119)	76	(116)	36	(108)
Esophagus	88	(121)	15	(123)	31	(110)
Uterine	65	(123)	24	(122)	42	(107)
Liver	40	(124)	12	(125)	60	(104)
Pancreas	38	(125)	15	(123)	62	(103)
All other malignant neoplasms	3,304	(81)	885	(94)	1,422	(44)
Oral conditions						
Dental caries	1,585	(96)	1,138	(88)	10	(117)
Periodontal disease	780	(108)	690	(97)	15	(113)
All other oral conditions	17,130	(51)	13,886	(48)	2,918	(30)
Congenital anomalies						
Congenital heart disease	852	(107)	613	(99)	371	(76)
All other congenital anomalies	18,298	(49)	12,627	(50)	996	(50)
Nutritional deficiencies						
Iron-deficiency anaemia	1,876	(92)	1,334	(85)	116	(96)
Protein energy malnutrition	69	(122)	57	(118)	14	(115)
All other nutritional deficiencies	6,259	(74)	4,355	(72)	455	(72)

1. Medical encounters: hospitalizations and ambulatory visits.

2. Individuals affected: individuals with a hospitalization or ambulatory visit.

Reportable Medical Events, US Armed Forces, 2002

In the US Armed Forces, data regarding medical events of special surveillance interest are collected and reported using service-specific electronic reporting programs. The Army uses the Reportable Medical Events System (RMES), the Air Force uses the Air Force Reportable Event Surveillance System (AFRESS), and the Navy uses the Navy Reportable Disease System (NDRS). Currently, 34 Army, 80 Air Force, and 27 fixed (e.g., not including ships) Navy preventive medicine/public health activities throughout the world electronically transmit reportable medical events data to their respective service surveillance centers. From these centers, the data are forwarded to the Army Medical Surveillance Activity (AMSA) in Washington, DC. At AMSA, the data are integrated with personnel and other medical event data in the Defense Medical Surveillance System (DMSS) to enable routine and special summaries, analyses, and reports.

Since 1998, 70 medical conditions¹ have been designated as “reportable” throughout the Department of Defense. The Army started reporting these conditions in 1994. During calendar year 2000, the medical surveillance centers of the Navy and Air Force began to forward their reportable medical event case reports to AMSA for integration into the DMSS. The integration of data from all of the services enables summaries and analyses across the entire US Armed Forces. This report summarizes frequencies, rates, and trends (through calendar year 2002) of reportable medical events among active duty military personnel.

During calendar year 2002, there were a total of 19,818 reports of notifiable medical events among active duty personnel—more than in any previous year—from U.S. military medical treatment facilities (MTFs). During the year, there were an average of 29, 15, and 10 case reports per day from Army, Air Force, and Navy MTFs, respectively. The number of reports increased by 9% in Army MTFs, 25% in Air Force MTFs, and 37% in Navy MTFs since 2001 (tables 2, 3, 4). Reports of notifiable conditions from MTFs have increased each year since automated reporting began.

Sexually-transmitted infections. In 2002, as in previous years, genital infections (due to chlamydia, gonorrhea, syphilis, and non-gonococcal urethritis) accounted for more than 93% of all notifiable case reports among active duty personnel. Genital infections caused by *Chlamydia trachomatis* remained the most frequently reported notifiable condition.

Environmental. In 2002, U.S. military MTFs reported 634 heat and cold-related injuries. During the year, compared to 2001, there were approximately 26% more heat injury, but approximately 13% fewer cold injury, reports (tables 2, 3, 4). In Army MTFs, compared to the average of the prior 3 years, there were approximately 15% more heat injury, but approximately 16% fewer cold injury, reports (figure 1). The finding may reflect a relatively mild winter season and/or effects of increased cold injury prevention training.

Vaccine preventable illnesses. In 2002, among active duty servicemembers, there were few or no reports of mumps, measles, rubella, diphtheria, rabies, or tetanus (tables 2, 3, 4). Overall, there were 302 reports of varicella, influenza, and hepatitis B combined among active duty servicemembers—approximately 18% more than in 2001. This increase may be due, at least in part, to improved ascertainment and/or reporting of cases from Air Force and Navy MTFs in 2002 compared to 2001. From Army MTFs, compared to the average of the prior 3 years, there were approximately 57% fewer reports of varicella, influenza, and hepatitis B combined (figure 1). Undoubtedly, the Army trends reflect the continuing impacts of vaccination programs against these viruses.²

Arthropod-transmitted diseases. In 2002, there were few or no reports of Rocky Mountain spotted fever, dengue, typhus, yellow fever, Rift Valley fever, or other hemorrhagic fevers among active duty servicemembers. During the year, there were 68 reports of malaria and 39 reports of Lyme disease

among active duty servicemembers—42% and 30% more than in 2001, respectively (tables 2, 3, 4). Compared to the prior 3 years, in 2002, there were increases in reports of malaria attributable to *Plasmodium vivax*³ (+12%) and *P. falciparum*⁴ (+43%) from Army MTFs (figure 1).

Food/water-transmitted infections. There was no clear trend in reports of food and water-transmitted illnesses overall among active duty servicemembers. For example, in 2002 compared to 2001, there were fewer reports of salmonellosis and giardiasis, yet more reports of shigellosis and campylobacter. As in previous years, there were few or no reports of cholera, amebiasis, or typhoid fever (tables 2, 3, 4). Finally, in 2002, there was a notable decrease in

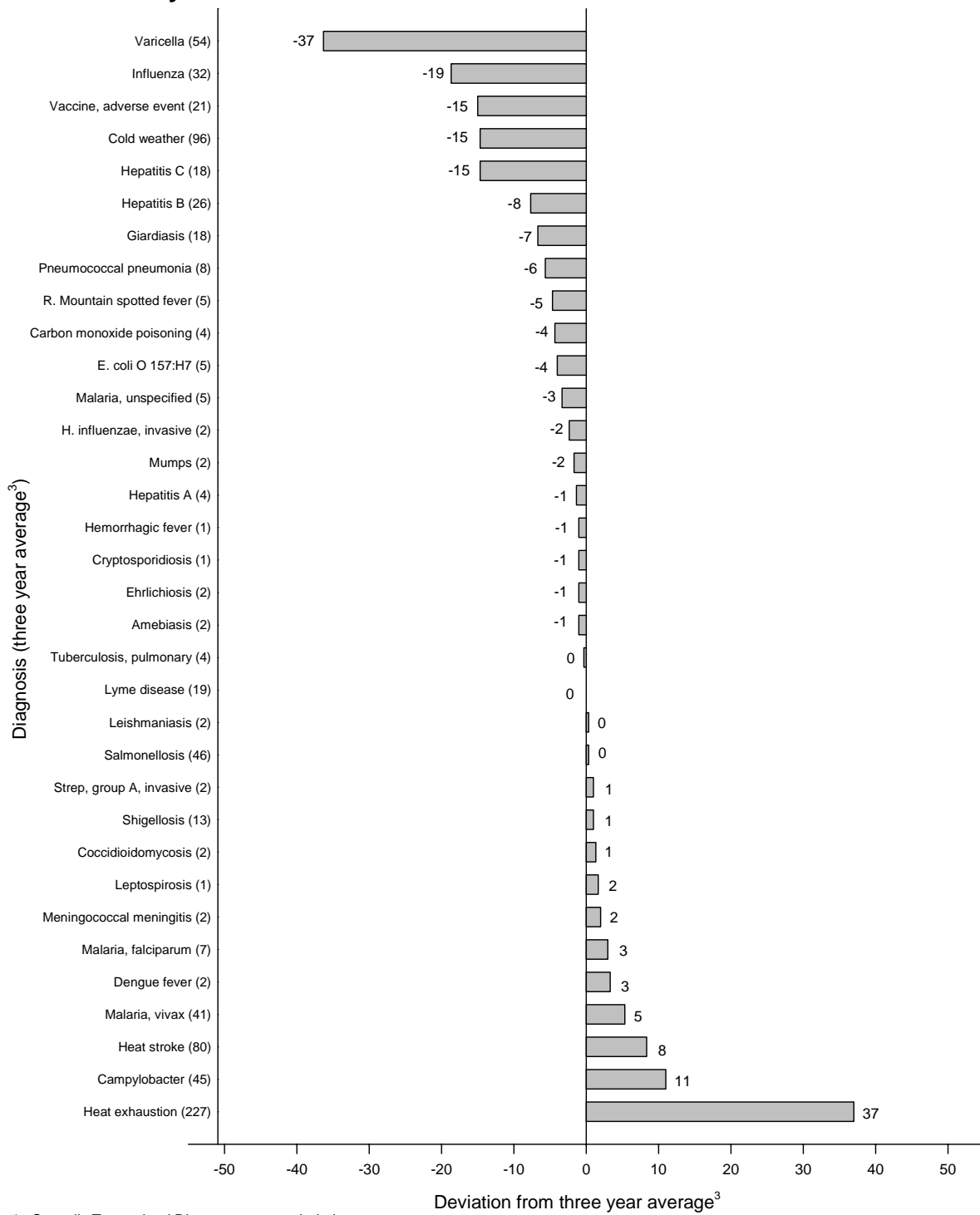
reports of *E. coli* O157:H7 among servicemembers (figure 1, tables 2, 3, 4).

Analysis and report by Abigail Wilson, MPH, Analysis Group, Army Medical Surveillance Activity

References

1. Tri-Service consensus list of reportable medical events: Completeness and timeliness of reporting in the Army, January-June 1998. *MSMR*, 1998;4(8):2-11. www.amsa.army.mil
2. Niebuhr, DW. Varicella primary prevention program, Fort Knox, Kentucky. *MSMR*, 1999;5(4): 9-10.
3. *P. vivax* malaria acquired by US soldiers in Korea: acquisition trends and incubation period characteristics, 1994-2000. *MSMR*, 2001;6(1):7-9.
4. Malaria among active duty soldiers, US Army, 2001. *MSMR*, 2002;7(2):2-4.

Figure 1. Number of reportable events¹ among active duty personnel during 2002² compared to the three year average³ of 1999-2001, Army medical treatment facilities.



1. Sexually Transmitted Diseases were excluded.

2. Reported by April 7, 2003.

3. Comparisons given for diseases that had a total three year incidence of at least 3 cases. All averages are rounded to the nearest integer.

Source: Army Reportable Medical Events System

Table 1. Sentinel reportable events for all beneficiaries¹ at US Army medical facilities, cumulative numbers², calendar years 2001 and 2002

Reporting location	Number of reports all events ³		Food-borne								Vaccine Preventable					
			Campylo-bacter		Giardia		Salmonella		Shigella		Hepatitis A		Hepatitis B		Varicella	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
NORTH ATLANTIC																
Washington, DC Area	198	239	1	6	8	6	8	7	3	7	.	2	.	1	2	1
Aberdeen, MD	63	57	.	1	.	1	.	.	.	1	.	.	1	1	.	.
FT Belvoir, VA	206	230	11	9	11	5	10	8	.	3	1	.	.	.	.	.
FT Bragg, NC	1,736	2,270	6	11	.	.	36	46	1	62	.	.	6	1	3	.
FT Drum, NY	199	170	2	1	3	.	2	.	.	.	.	.	.	.	.	.
FT Eustis, VA	276	287	1	3	.	.	2	3	.	9	.	.	.	1	1	2
FT Knox, KY	278	236	1	5	5	4	2	5	.	.	.	.	.	1	.	.
FT Lee, VA	226	233	.	.	.	.	.	1	.	.	.	.	.	.	.	.
FT Meade, MD	70	122	.	.	.	1	1	1	.	.	.	.	.	.	.	1
West Point, NY	87	118	1	.	.	.	1	3	.	.	3	2	.	1	.	2
GREAT PLAINS																
FT Sam Houston, TX	399	337	.	.	2	.	4	3	1	.	.	.	.	.	.	.
FT Bliss, TX	282	262	3	.	7	5	1	5	6	2	.	.	2	2	1	.
FT Carson, CO	722	652	3	8	8	8	5	4	2	4	.	.	2	3	.	.
FT Hood, TX	2,282	2,547	4	6	2	.	16	17	16	12	.	.	10	.	2	.
FT Huachuca, AZ	47	70	1	.	.	.	1	1	1	.	.	.	.	.	1	.
FT Leavenworth, KS	43	55	1	.	.	3	2	.	.	1	.	1	.	.	.	.
FT Leonard Wood, MO	233	248	1	.	.	.	.	3	.	.	1	.	.	.	6	4
FT Polk, LA	257	237	.	.	.	.	3	6	.	1	.	.	.	.	.	.
FT Riley, KS	268	301	.	.	1	.	2	1	.	.	.	1	1	1	.	1
FT Sill, OK	443	357	.	1	.	.	1	.	7	5	.	.	1	.	2	.
SOUTHEAST																
FT Gordon, GA	282	261	.	.	.	.	2	.	.	3	3	1	2	2	.	.
FT Benning, GA	522	562	1	.	3	3	6	31	12	2	.	.	.	.	5	3
FT Campbell, KY	911	768	6	4	6	2	7	4	1	2	1	.	.	.	.	3
FT Jackson, SC	294	267	.	.	.	.	.	.	.	.	1	.	5	1	2	1
FT Rucker, AL	91	84	.	1	.	.	4	3	.	2	.	.	.	.	.	.
FT Stewart, GA	492	591	.	1	.	4	17	12	.	3	.	.	3	.	.	1
WESTERN																
FT Lewis, WA	754	793	5	3	3	2	9	6	1	1	.	.	2	.	.	.
FT Irwin, CA	86	70	.	.	.	.	.	.	.	.	2	.	3	1	2	.
FT Wainwright, AK	190	161	.	1	3	1	.	1	.	.	.	.	.	.	.	.
OTHER LOCATIONS																
Hawaii	969	967	42	43	14	12	27	14	7	1	1	.	1	10	.	.
Europe	1,928	2,273	42	35	5	.	57	46	1	3	3	1	13	9	9	5
Korea	131	676	.	3	.	.	5	8	.	.	1	1	.	1	2	1
Total	14,965	16,501	132	142	81	57	231	239	59	124	17	9	52	35	39	25

1. Includes active duty servicemembers, dependents, and retirees.

2. Events reported by April 7, 2003.

3. Seventy events specified by Tri-Service Reportable Events, Version 1.0, July 2000.

Note: Completeness and timeliness of reporting vary by facility.

Source: Army Reportable Medical Events System.

Table 1. (Cont'd) Sentinel reportable events among all beneficiaries¹ at US Army medical facilities, cumulative numbers², calendar years 2001 and 2002

Reporting location	Arthropod-borne				Sexually Transmitted								Environmental				
	Lyme Disease		Malaria		Chlamydia		Gonorrhea		Syphilis ³		Urethritis ⁴		Cold		Heat		
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	
NORTH ATLANTIC																	
Washington, DC Area	3	5	1	2	89	100	24	23	10	6	.	.	.	.	.	.	2
Aberdeen, MD	.	2	.	.	42	48	12	3	.	.	.	2	.	.	3	.	.
FT Belvoir, VA	.	3	.	.	130	157	30	34	2	1	.	.	.	.	3	.	2
FT Bragg, NC	.	.	15	5	866	1,589	353	302	.	1	238	128	7	1	194	110	
FT Drum, NY	.	.	.	2	146	113	40	29	1	.	.	.	2	11	.	.	14
FT Eustis, VA	.	1	.	.	187	212	72	51	.	1	.	.	.	.	10	.	3
FT Knox, KY	.	.	1	.	215	167	47	48	2	.	.	.	.	.	2	.	3
FT Lee, VA	.	2	.	.	173	192	53	36	.	.	.	.	.	.	.	.	2
FT Meade, MD	.	5	.	.	53	96	14	15	1	.	1	2	.	.	.	.	.
West Point, NY	50	42	.	.	26	20	3	9	.	1	1	.	.	.	1	.	37
GREAT PLAINS																	
FT Sam Houston, TX	.	.	1	.	325	259	48	48	.	1	3	.	1	.	8	.	2
FT Bliss, TX	1	.	4	.	153	163	55	28	1	1	.	.	.	.	5	.	1
FT Carson, CO	.	.	.	3	545	454	66	54	1	1	85	64	.	1	.	.	.
FT Hood, TX	1	.	4	5	1,307	1,396	445	491	5	4	390	445	.	2	62	.	40
FT Huachuca, AZ	.	.	.	.	37	57	5	10	.	.	.	.	.	.	.	.	2
FT Leavenworth, KS	.	.	.	1	28	36	9	11	.	.	.	.	.	.	.	.	.
FT Leonard Wood, MO	.	.	.	1	146	175	41	40	.	.	8	2	9	3	15	.	12
FT Polk, LA	.	.	1	1	195	156	52	63	.	3	.	.	.	.	2	.	1
FT Riley, KS	.	.	1	2	184	226	46	52	.	.	.	.	5	12	27	.	3
FT Sill, OK	1	.	1	2	238	201	103	67	.	.	71	59	1	1	12	.	19
SOUTHEAST																	
FT Gordon, GA	.	2	10	1	227	205	27	32	.	1	.	.	.	.	2	.	1
FT Benning, GA	2	.	1	1	312	286	99	135	.	1	1	.	.	.	45	.	94
FT Campbell, KY	2	1	1	3	716	544	157	168	1	1	.	.	.	1	8	.	24
FT Jackson, SC	.	.	.	.	192	216	60	42	3	1	.	.	.	4	27	.	2
FT Rucker, AL	.	.	.	1	65	53	15	19	.	.	.	.	.	.	4	.	5
FT Stewart, GA	.	3	1	1	178	358	140	150	1	2	138	11	.	.	11	.	42
WESTERN																	
FT Lewis, WA	.	.	.	3	508	561	92	86	1	2	121	112	4	.	.	.	.
FT Irwin, CA	.	.	.	.	50	53	14	12	.	.	.	.	.	.	13	.	2
FT Wainwright, AK	.	1	.	.	131	123	5	8	.	.	.	.	46	19	.	.	.
OTHER LOCATIONS																	
Hawaii	.	.	.	3	689	666	85	106	1	1	1	.	1	.	7	.	19
Europe	7	11	7	11	1,478	1,652	247	458	2	6	2	3	17	14	5	.	8
Korea	.	.	12	20	63	476	36	124	1	1	1	1	1	18	4	.	14
Total	67	78	61	68	9,694	11,010	2,495	2,754	33	36	1,063	827	97	87	467	464	

3. Primary and secondary.

4. Urethritis, non-gonococcal (NGU).

Note: Completeness and timeliness of reporting vary by facility.

Source: Army Reportable Medical Events System.

**Table 2. Number of reportable events¹ at Army medical treatment facilities²
among active duty personnel, 1998-2002**

Diagnosis ³	1998	1999	2000	2001	2002	Diagnosis ³	1998	1999	2000	2001	2002
All reportable events	7,478	8,437	9,505	9,898	10,742	Listeriosis	.	.	.	.	.
Amebiasis	2	1	1	4	1	Lyme disease	13	18	25	14	19
Anthrax	.	.	.	.	.	Malaria, falciparum	.	5	3	13	10
Biological warfare agent exposure	.	.	.	.	.	Malaria, malariae	.	.	.	1	.
Botulism	.	.	.	.	.	Malaria, ovale	1	.	.	1	1
Brucellosis	.	.	.	.	.	Malaria, unspecified	7	4	6	6	2
Campylobacter	45	46	35	54	56	Malaria, vivax	34	53	47	22	46
Carbon monoxide poisoning	5	2	6	5	.	Measles	.	.	.	.	.
Chemical agent exposure	.	.	.	.	.	Meningococcal meningitis	.	3	2	1	4
Chlamydia	4,243	5,032	5,767	6,263	7,189	Meningococcal septicemia	.	.	.	.	.
Cholera	1	.	.	.	.	Mumps	1	2	2	1	.
Coccidioidomycosis	3	1	2	2	3	Pertussis	.	.	2	.	1
Cold weather, frostbite	57	80	41	59	49	Plague	.	.	.	.	.
Cold weather, hypothermia	4	10	1	.	.	Pneumococcal pneumonia	1	17	2	4	2
Cold weather, immersion type	10	25	13	13	19	Poliomyelitis	.	.	.	.	.
Cold weather, unspecified	4	2	24	19	13	Q fever	.	.	.	.	1
Cryptosporidiosis	1	.	2	1	.	Rabies, human	.	.	.	.	.
Cyclospora	.	.	.	.	.	Relapsing fever	.	.	.	.	.
Dengue fever	6	3	1	1	5	Rheumatic fever, acute	1	.	.	.	.
Diphtheria	.	.	.	.	.	Rift Valley fever	.	.	.	.	.
E. coli O157:H7	3	3	9	3	1	Rocky Mountain spotted fever	2	.	12	2	.
Ehrlichiosis	2	1	2	3	1	Rubella	.	.	.	.	.
Encephalitis	.	.	.	2	.	Salmonellosis	75	37	40	60	46
Filariasis	.	1	1	.	.	Schistosomiasis	.	.	1	.	.
Giardiasis	29	17	16	20	11	Shigellosis	16	24	7	8	14
Gonorrhea	1,536	1,536	1,710	1,801	2,030	Smallpox	.	.	.	.	.
H. influenzae, invasive	.	4	1	2	.	Streptococcus, group A, invasive	1	1	.	5	3
Hantavirus infection	4	1	.	.	.	Syphilis, congenital	.	3	1	1	.
Heat exhaustion	179	179	240	262	264	Syphilis, latent	22	19	17	8	14
Heat stroke	77	69	54	116	88	Syphilis, primary/secondary	39	38	29	19	19
Hemorrhagic fever	.	.	2	1	.	Syphilis, tertiary	2	7	3	7	.
Hepatitis A	10	3	3	7	3	Tetanus	1	.	.	.	.
Hepatitis B	56	28	21	28	18	Toxic shock syndrome	2	.	1	.	.
Hepatitis C	29	14	16	23	3	Trichinosis	.	.	.	.	1
Influenza	65	64	7	24	13	Trypanosomiasis	1	.	.	.	.
Lead poisoning	.	.	.	.	.	Tuberculosis, pulmonary	5	7	3	3	4
Legionellosis	.	1	.	1	1	Tularemia	.	.	1	.	.
Leishmaniasis, cutaneous	5	4	.	.	2	Typhoid fever	.	.	.	1	.
Leishmaniasis, mucocutaneous	.	.	.	.	.	Typhus fever	.	.	.	.	.
Leishmaniasis, unspecified	.	.	.	.	.	Urethritis, non-gonococcal	758	981	1,224	969	754
Leishmaniasis, visceral	.	.	.	1	.	Vaccine, adverse event	15	24	35	4	6
Leprosy	.	.	.	.	4	Varicella, active duty only	101	67	65	31	18
Leptospirosis	4	.	2	2	3	Yellow fever	.	.	.	.	.

1. Events reported by April 7, 2003

2. Main and satellite clinics.

3. Tri-Service Reportable Events, Version 1.0, July 1998

Note: Completeness and timeliness of reporting varies by facility.

Source: Reportable Events Surveillance System

Table 3. Number of reportable events¹ at Air Force medical treatment facilities² among active duty personnel, 1998-2002

Diagnosis ³	1998	1999	2000	2001	2002	Diagnosis ³	1998	1999	2000	2001	2002
All reportable events	427	779	4,018	4,379	5,468	Listeriosis	.	.	.	.	.
Amebiasis	1	.	1	.	1	Lyme disease	2	2	8	11	5
Anthrax	.	.	.	.	.	Malaria, falciparum	1	.	2	.	5
Biological warfare agent exposure	.	.	.	.	.	Malaria, malariae	.	.	1	.	.
Botulism	.	.	.	.	.	Malaria, ovale	.	.	.	1	.
Brucellosis	.	.	.	.	.	Malaria, unspecified	1	.	1	.	.
Campylobacter	1	1	38	25	28	Malaria, vivax	1	1	2	3	2
Carbon monoxide poisoning	.	.	.	.	.	Measles	.	.	.	.	.
Chemical agent exposure	.	.	.	.	.	Meningococcal meningitis	.	.	1	.	.
Chlamydia	330	543	3,072	3,641	4,638	Meningococcal septicemia	.	.	.	.	.
Cholera	.	.	.	.	.	Mumps	.	.	1	2	1
Coccidioidomycosis	.	6	4	6	2	Pertussis	.	.	4	2	.
Cold weather, frostbite	.	.	2	1	.	Plague	.	.	.	.	.
Cold weather, hypothermia	.	.	1	.	.	Pneumococcal pneumonia	.	.	1	.	.
Cold weather, immersion type	.	.	.	.	.	Poliomyelitis	.	.	.	.	.
Cold weather, unspecified	.	.	.	1	.	Q fever	.	.	.	.	.
Cryptosporidiosis	1	.	1	2	.	Rabies, human	.	.	.	.	.
Cyclospora	.	.	.	.	.	Relapsing fever	.	.	.	.	.
Dengue fever	.	.	.	1	.	Rheumatic fever, acute	.	.	1	.	.
Diphtheria	.	.	.	.	.	Rift Valley fever	.	.	.	.	.
E. coli O157:H7	.	1	1	1	.	Rocky Mountain spotted fever	.	.	.	.	1
Ehrlichiosis	.	.	.	.	.	Rubella	.	.	.	.	.
Encephalitis	1	.	.	.	.	Salmonellosis	9	4	25	17	14
Filariasis	.	.	.	.	.	Schistosomiasis	.	.	.	.	.
Giardiasis	3	10	18	16	13	Shigellosis	2	5	5	11	23
Gonorrhea	39	94	427	407	409	Smallpox	.	.	.	.	.
H. influenzae, invasive	.	1	1	.	.	Streptococcus, group A, invasive	1	.	9	.	1
Hantavirus infection	.	.	.	1	.	Syphilis, congenital	.	.	1	1	.
Heat exhaustion	.	2	76	24	18	Syphilis, latent	1	3	3	5	4
Heat stroke	.	.	1	1	.	Syphilis, primary/secondary	1	3	10	8	11
Hemorrhagic fever	.	.	.	.	.	Syphilis, tertiary	.	.	.	.	.
Hepatitis A	.	.	3	6	7	Tetanus	.	.	.	.	.
Hepatitis B	5	13	48	29	56	Toxic shock syndrome	.	.	.	.	1
Hepatitis C	4	7	45	20	31	Trichinosis	1	1	2	1	1
Influenza	20	70	155	104	168	Trypanosomiasis	.	.	.	.	.
Lead poisoning	.	.	.	.	.	Tuberculosis, pulmonary	1	2	1	.	2
Legionellosis	.	.	1	.	2	Tularemia	.	.	.	.	.
Leishmaniasis, cutaneous	.	.	.	.	.	Typhoid fever	.	.	.	1	.
Leishmaniasis, mucocutaneous	.	.	.	.	.	Typhus fever	.	.	.	.	.
Leishmaniasis, unspecified	.	.	.	.	.	Urethritis, non-gonococcal	1	7	34	20	16
Leishmaniasis, visceral	.	.	.	.	.	Vaccine, adverse event	.	.	.	.	.
Leprosy	.	.	.	.	.	Varicella, active duty only	.	3	11	10	8
Leptospirosis	.	.	.	.	.	Yellow fever	.	.	.	.	.

1. Events reported by April 7, 2003

2. Main and satellite clinics.

3. Tri-Service Reportable Events, Version 1.0, July 1998

Note: Completeness and timeliness of reporting varies by facility.

Source: Reportable Events Surveillance System

**Table 4. Number of reportable events¹ at Navy medical treatment facilities²
among active duty personnel, 1998-2002**

Diagnosis ³	1998	1999	2000	2001	2002	Diagnosis ³	1998	1999	2000	2001	2002
All reportable events	402	266	2,494	2,639	3,608	Listeriosis	.	.	.	1	.
Amebiasis	.	.	2	2	.	Lyme disease	.	.	4	5	15
Anthrax	.	.	5	.	.	Malaria, falciparum	.	1	4	1	.
Biological warfare agent exposure	Malaria, malariae	.	.	.	.	.
Botulism	Malaria, ovale	.	.	.	.	.
Brucellosis	.	.	.	1	.	Malaria, unspecified	.	.	4	.	2
Campylobacter	.	3	29	8	10	Malaria, vivax	.	2	1	.	.
Carbon monoxide poisoning	Measles	.	.	.	.	.
Chemical agent exposure	1	Meningococcal meningitis	.	.	2	2	2
Chlamydia	164	58	1,617	1,841	1,949	Meningococcal septicemia	.	.	4	1	1
Cholera	1	Mumps	.	.	.	1	.
Coccidioidomycosis	.	.	2	12	8	Pertussis	.	.	.	.	.
Cold weather, frostbite	Plague	.	.	.	.	.
Cold weather, hypothermia	.	.	.	1	.	Pneumococcal pneumonia	1	.	3	.	3
Cold weather, immersion type	Poliomyelitis	.	.	.	.	.
Cold weather, unspecified	1	Q fever	.	.	.	.	.
Cryptosporidiosis	1	.	.	2	.	Rabies, human	.	.	.	.	.
Cyclospora	Relapsing fever	.	.	.	.	.
Dengue fever	.	.	2	.	.	Rheumatic fever, acute	.	.	.	1	1
Diphtheria	Rift Valley fever	.	.	.	.	.
E. coli O157:H7	.	.	2	.	.	Rocky Mountain spotted fever	.	.	4	.	.
Ehrlichiosis	.	.	.	1	.	Rubella	.	.	.	.	.
Encephalitis	.	.	4	.	.	Salmonellosis	4	4	7	10	10
Filariasis	Schistosomiasis	.	.	.	.	1
Giardiasis	3	2	9	8	8	Shigellosis	2	.	2	2	4
Gonorrhea	56	22	568	480	475	Smallpox	.	.	.	.	.
H. influenzae, invasive	Streptococcus, group A, invasive	.	.	3	8	15
Hantavirus infection	Syphilis, congenital	.	.	.	.	1
Heat exhaustion	.	2	11	28	156	Syphilis, latent	.	3	5	3	2
Heat stroke	.	1	4	8	26	Syphilis, primary/secondary	1	1	11	8	7
Hemorrhagic fever	Syphilis, tertiary	.	.	.	.	.
Hepatitis A	1	.	1	.	.	Tetanus	.	.	.	.	.
Hepatitis B	1	.	15	7	10	Toxic shock syndrome	.	.	.	.	.
Hepatitis C	1	.	9	5	5	Trichinosis	.	.	.	.	1
Influenza	.	.	.	11	3	Trypanosomiasis	.	.	.	.	.
Lead poisoning	Tuberculosis, pulmonary	.	.	8	4	3
Legionellosis	1	Tularemia	.	.	.	.	.
Leishmaniasis, cutaneous	Typhoid fever	.	.	.	1	.
Leishmaniasis, mucocutaneous	Typhus fever	.	.	.	3	.
Leishmaniasis, unspecified	Urethritis, non-gonococcal	165	166	141	158	876
Leishmaniasis, visceral	Vaccine, adverse event	.	.	2	2	2
Leprosy	Varicella, active duty only	2	1	9	13	8
Leptospirosis	Yellow fever	.	.	.	.	.

1. Events reported by April 7, 2003

2. Main and satellite clinics.

3. Tri-Service Reportable Events, Version 1.0, July 1998

Note: Completeness and timeliness of reporting varies by facility.

Source: Reportable Events Surveillance System

**Table 1. Demographic characteristics of active duty members,
US Armed Forces, 2002**

Characteristic	Army		Navy		Air Force		Marine Corps	
	No.	%	No.	%	No.	%	No.	%
Total	479,782	100.0	377,892	100.0	360,887	100.0	171,791	100.0
Gender								
Men	406,096	84.6	323,487	85.6	290,922	80.6	161,696	94.1
Women	73,687	15.4	54,405	14.4	69,964	19.4	10,094	5.9
Age (years)								
< 20	42,255	8.8	33,904	9.0	26,368	7.3	27,401	16.0
20-24	158,962	33.1	125,679	33.3	103,336	28.6	80,190	46.7
25-29	97,857	20.4	71,443	18.9	69,274	19.2	27,850	16.2
30-34	75,239	15.7	55,380	14.7	54,599	15.1	16,123	9.4
35-39	61,695	12.9	52,719	14.0	61,657	17.1	12,459	7.3
40-44	29,324	6.1	26,119	6.9	33,553	9.3	5,583	3.2
45-49	10,633	2.2	9,625	2.5	9,489	2.6	1,756	1.0
50-54	3,136	0.7	2,445	0.6	2,224	0.6	376	0.2
55-59	601	0.1	483	0.1	351	0.1	51	0.0
> 59	80	0.0	95	0.0	36	0.0	2	0.0
Race/ethnicity								
White non-hispanic	281,419	58.7	233,158	61.7	262,123	72.6	115,560	67.3
Black non-hispanic	121,962	25.4	71,668	19.0	57,436	15.9	24,818	14.4
Hispanic	44,996	9.4	37,582	9.9	19,594	5.4	22,963	13.4
Asian/Pacific Islander	15,893	3.3	23,920	6.3	11,014	3.1	4,491	2.6
Native American/Alaskan	4,117	0.9	7,721	2.0	2,116	0.6	1,604	0.9
Other	11,395	2.4	3,843	1.0	8,603	2.4	2,355	1.4
Marital status								
Single	206,252	43.0	199,914	52.9	121,808	33.8	91,232	53.1
Married	253,003	52.7	177,978	47.1	212,589	58.9	74,922	43.6
Other	20,527	4.3	-	-	26,489	7.3	5,637	3.3
Education								
High school or less	361,895	75.4	312,522	82.7	239,405	66.3	150,082	87.4
Some college	31,523	6.6	17,215	4.6	40,197	11.1	3,934	2.3
Bachelors	57,447	12.0	38,015	10.1	42,253	11.7	14,578	8.5
Masters	19,620	4.1	6,260	1.7	30,834	8.5	2,769	1.6
Doctorate	9,297	1.9	3,880	1.0	8,198	2.3	428	0.2
Grade								
Enlisted								
E1-E4	222,168	46.3	162,384	43.0	133,747	37.1	103,055	60.0
E5-E9	180,178	37.6	160,979	42.6	156,640	43.4	50,466	29.4
Officer								
O1-O3 (W1-W3)	48,575	10.1	33,026	8.7	40,514	11.2	12,125	7.1
O4-O9 (W4-W5)	28,861	6.0	21,504	5.7	29,985	8.3	6,145	3.6

Table 2. Military occupations* of active duty members, US Armed Forces, 2002

Characteristic	Army		Navy		Air Force		Marine Corps	
	No.	%	No.	%	No.	%	No.	%
Total	479,782	100.0	377,892	100.0	360,887	100.0	171,791	100.0
Enlisted								
Infantry, seamen, gun crews	101,191	21.1	30,357	8.0	27,392	7.6	33,706	19.6
Electronic equip repair	26,103	5.4	47,905	12.7	27,020	7.5	10,497	6.1
Communications, intelligence	44,287	9.2	29,546	7.8	23,659	6.6	10,811	6.3
Health care	21,892	4.6	26,422	7.0	21,892	6.1	0	0.0
Technical and allied support	13,686	2.9	4,299	1.1	11,045	3.1	3,855	2.2
Funct support, admin	66,196	13.8	34,705	9.2	61,945	17.2	25,365	14.8
Electric/mech equip repair	57,952	12.1	89,403	23.7	69,016	19.1	24,651	14.3
Craftworkers	7,756	1.6	19,141	5.1	13,180	3.7	3,906	2.3
Service, supply handlers	51,452	10.7	16,019	4.2	14,742	4.1	19,914	11.6
Non-occupational	2,254	0.5	25,477	6.7	19,636	5.4	20,795	12.1
Officers								
General officers and executives	305	0.1	210	0.1	684	0.2	670	0.4
Tactical operations	28,240	5.9	20,348	5.4	22,355	6.2	8,355	4.9
Intelligence	4,880	1.0	2,236	0.6	3,580	1.0	831	0.5
Engineering and maintenance	10,415	2.2	6,748	1.8	10,012	2.8	2,072	1.2
Scientists, professionals	3,956	0.8	2,054	0.5	4,337	1.2	510	0.3
Health care	14,183	3.0	11,128	2.9	11,799	3.3	0	0.0
Administrators	4,950	1.0	2,599	0.7	4,915	1.4	1,482	0.9
Supply, allied specialists	7,884	1.6	3,272	0.9	6,154	1.7	2,425	1.4
Non-occupational	1,664	0.3	5,933	1.6	3,985	1.1	1,913	1.1

*based on DoD occupational area codes

**Table 1. Demographic characteristics of Reserves,
US Armed Forces, 2002**

Characteristic	Army		Navy		Air Force		Marine Corps	
	No.	%	No.	%	No.	%	No.	%
Total	206,290	100.0	88,067	100.0	75,990	100.0	40,009	100.0
Gender								
Men	155,273	75.3	70,372	79.9	58,907	77.5	38,093	95.2
Women	51,017	24.7	17,695	20.1	17,083	22.5	1,916	4.8
Age (years)								
< 20	21,657	10.5	649	0.7	1,325	1.7	4,914	12.3
20-24	41,228	20.0	5,577	6.3	5,825	7.7	19,103	47.7
25-29	26,917	13.0	12,647	14.4	8,157	10.7	6,857	17.1
30-34	28,671	13.9	20,984	23.8	12,349	16.3	3,742	9.4
35-39	31,545	15.3	22,469	25.5	16,914	22.3	2,773	6.9
40-44	24,451	11.9	13,909	15.8	13,665	18.0	1,591	4.0
45-49	15,833	7.7	7,058	8.0	8,740	11.5	715	1.8
50-54	10,850	5.3	3,357	3.8	6,355	8.4	240	0.6
55-59	4,897	2.4	1,343	1.5	2,595	3.4	75	0.2
> 59	241	0.1	74	0.1	67	0.1	0	0.0
Race/ethnicity								
White non-hispanic	120,809	58.6	58,467	66.4	55,205	72.6	27,461	68.6
Black non-hispanic	52,478	25.4	12,447	14.1	12,182	16.0	4,309	10.8
Hispanic	20,909	10.1	6,583	7.5	4,304	5.7	5,722	14.3
Asian/Pacific Islander	7,289	3.5	2,985	3.4	2,182	2.9	1,559	3.9
Native American/Alaskan	1,629	0.8	1,130	1.3	589	0.8	235	0.6
Other	3,175	1.5	6,456	7.3	1,528	2.0	723	1.8
Marital status								
Single	93,425	45.3	31,721	36.0	18,913	24.9	26,858	67.1
Married	96,368	46.7	50,695	57.6	48,204	63.4	11,826	29.6
Other	16,497	8.0	5,651	6.4	8,873	11.7	1,325	3.3
Education								
High school or less	136,924	66.4	55,766	63.3	44,679	58.8	33,634	84.1
Some college	22,282	10.8	11,173	12.7	8,010	10.5	1,314	3.3
Bachelors	31,662	15.3	15,437	17.5	13,835	18.2	3,831	9.6
Masters	10,582	5.1	4,254	4.8	6,870	9.0	862	2.2
Doctorate	4,841	2.3	1,437	1.6	2,595	3.4	368	0.9
Grade								
Enlisted								
E1-E4	90,309	43.8	24,738	28.1	13,800	18.2	27,570	68.9
E5-E9	75,571	36.6	44,948	51.0	44,965	59.2	8,641	21.6
Officer								
O1-O3 (W1-W3)	18,080	8.8	4,164	4.7	5,188	6.8	863	2.2
O4-O9 (W4-W5)	22,331	10.8	14,217	16.1	12,037	15.8	2,935	7.3

Table 2. Military occupations* of Reserves, US Armed Forces, 2002

Characteristic	Army		Navy		Air Force		Marine Corps	
	No.	%	No.	%	No.	%	No.	%
Total	206,290	100.0	88,067	100.0	75,990	100.0	40,009	100.0
Enlisted								
Infantry, seamen, gun crews	13,645	6.6	7,851	8.9	6,274	8.3	10,533	26.3
Electronic equip repair	3,613	1.8	7,749	8.8	2,909	3.8	1,220	3.0
Communications, intelligence	6,848	3.3	4,486	5.1	1,813	2.4	2,798	7.0
Health care	18,961	9.2	6,641	7.5	5,798	7.6	0	0.0
Technical and allied support	6,729	3.3	498	0.6	1,988	2.6	415	1.0
Funct support, admin	43,881	21.3	14,438	16.4	14,709	19.4	4,745	11.9
Electric/mech equip repair	19,674	9.5	12,668	14.4	12,917	17.0	4,622	11.6
Craftworkers	10,164	4.9	9,697	11.0	3,458	4.6	1,100	2.8
Service, supply handlers	31,464	15.3	3,747	4.3	2,901	3.8	5,300	13.2
Non-occupational	10,355	5.0	638	0.7	3,848	5.1	5,373	13.4
Officers								
General officers and executives	95	0.0	23	0.0	213	0.3	288	0.7
Tactical operations	7,100	3.4	6,940	7.9	3,675	4.8	1,873	4.7
Intelligence	2,128	1.0	1,991	2.3	1,167	1.5	200	0.5
Engineering and maintenance	3,943	1.9	1,986	2.3	1,885	2.5	377	0.9
Scientists, professionals	4,055	2.0	724	0.8	1,472	1.9	187	0.5
Health care	12,326	6.0	3,223	3.7	4,078	5.4	0	0.0
Administrators	3,693	1.8	760	0.9	977	1.3	287	0.7
Supply, allied specialists	5,494	2.7	1,185	1.3	1,187	1.6	523	1.3
Non-occupational	586	0.3	220	0.2	145	0.2	44	0.1

*based on DoD occupational area codes

**Table 1. Demographic characteristics, National Guard,
US Armed Forces, 2002**

Characteristic	Army		Navy		Air Force		Marine Corps	
	No.	%	No.	%	No.	%	No.	%
Total	348,298	100.0	-	-	111,283	100.0	-	-
Gender								
Men	305,602	87.7	-	-	92,002	82.7	-	-
Women	42,696	12.3	-	-	19,281	17.3	-	-
Age (years)								
< 20	36,127	10.4	-	-	4,594	4.1	-	-
20-24	76,297	21.9	-	-	14,569	13.1	-	-
25-29	51,228	14.7	-	-	14,130	12.7	-	-
30-34	53,124	15.3	-	-	18,195	16.4	-	-
35-39	50,800	14.6	-	-	21,823	19.6	-	-
40-44	34,226	9.8	-	-	16,142	14.5	-	-
45-49	20,062	5.8	-	-	9,870	8.9	-	-
50-54	17,750	5.1	-	-	8,362	7.5	-	-
55-59	8,522	2.4	-	-	3,541	3.2	-	-
> 59	161	0.0	-	-	58	0.1	-	-
Race/ethnicity								
White non-hispanic	255,822	73.4	-	-	88,461	79.5	-	-
Black non-hispanic	52,908	15.2	-	-	9,897	8.9	-	-
Hispanic	25,632	7.4	-	-	6,172	5.5	-	-
Asian/Pacific Islander	7,280	2.1	-	-	3,667	3.3	-	-
Native American/Alaskan	2,861	0.8	-	-	1,738	1.6	-	-
Other	3,796	1.1	-	-	1,347	1.2	-	-
Marital status								
Single	151,869	43.6	-	-	34,495	31.0	-	-
Married	174,607	50.1	-	-	66,051	59.4	-	-
Other	21,822	6.3	-	-	10,738	9.6	-	-
Education								
High school or less	280,906	80.7	-	-	18,857	16.9	-	-
Some college	13,556	3.9	-	-	72,375	65.0	-	-
Bachelors	41,165	11.8	-	-	15,042	13.5	-	-
Masters	5,827	1.7	-	-	3,508	3.2	-	-
Doctorate	6,844	2.0	-	-	1,501	1.3	-	-
Grade								
Enlisted			-	-			-	-
E1-E4	180,169	51.7	-	-	27,556	24.8	-	-
E5-E9	132,193	38.0	-	-	69,926	62.8	-	-
Officer			-	-			-	-
O1-O3 (W1-W3)	21,570	6.2	-	-	4,583	4.1	-	-
O4-O9 (W4-W5)	14,366	4.1	-	-	9,217	8.3	-	-

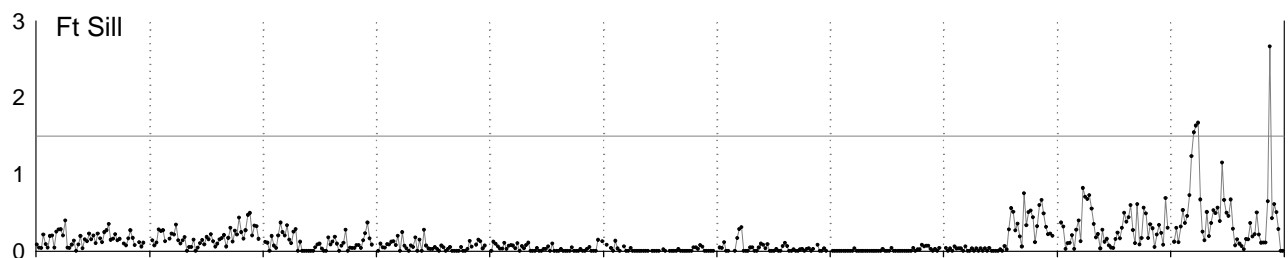
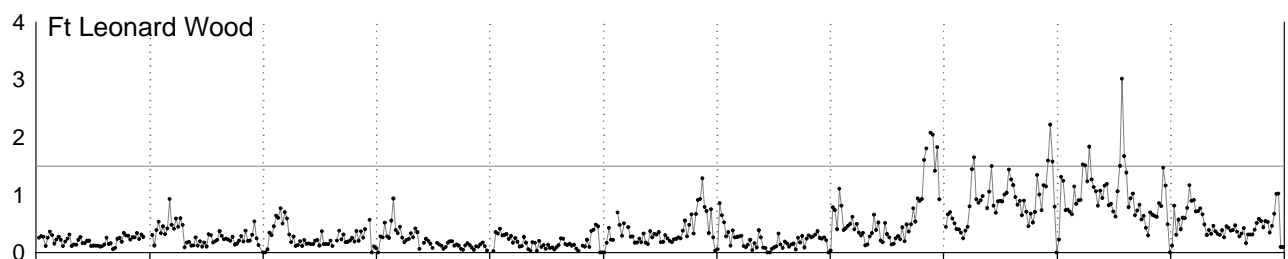
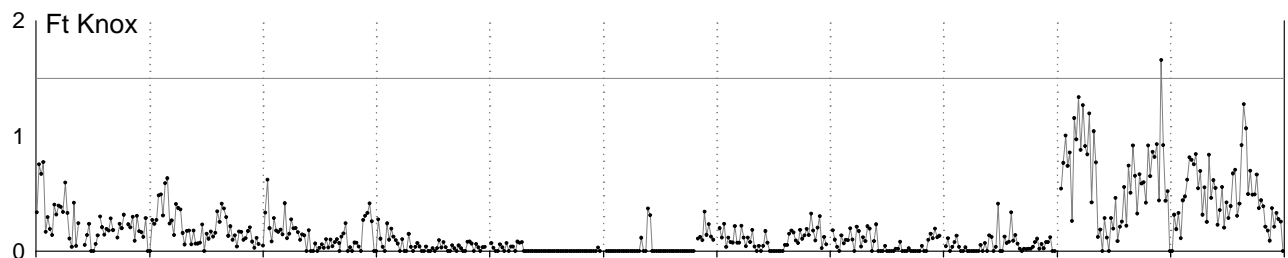
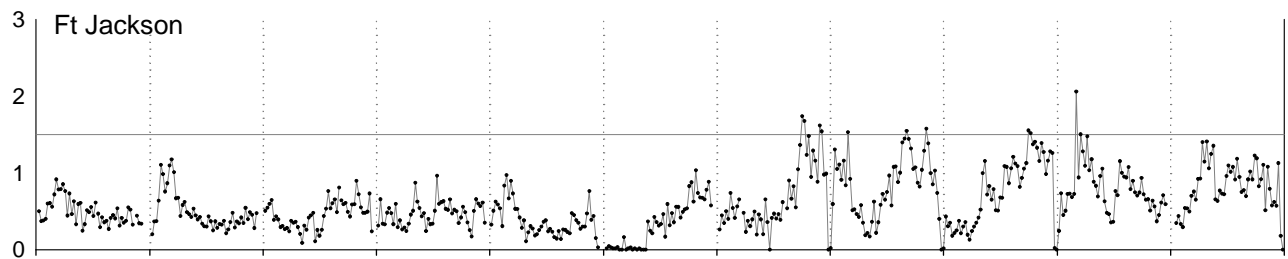
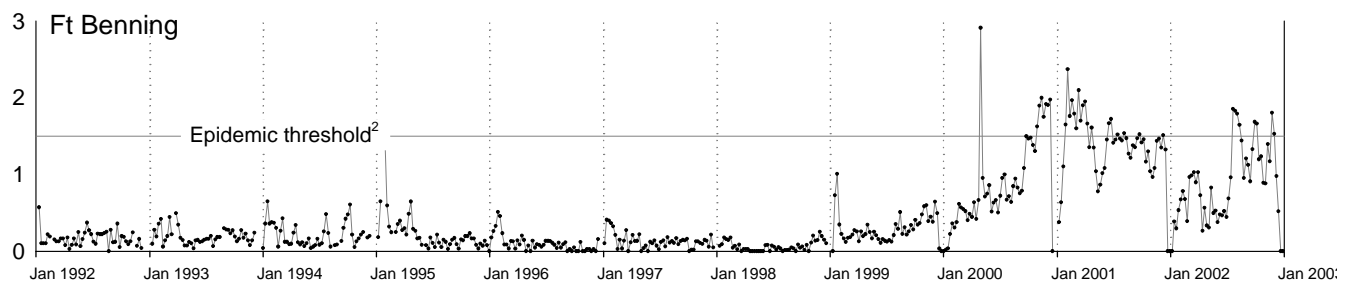
Table 2. Military occupations*, National Guard, US Armed Forces, 2002

Characteristic	Army		Navy		Air Force		Marine Corps	
	No.	%	No.	%	No.	%	No.	%
Total	348,298	100.0	-	-	111,283	100.0	-	-
Enlisted								
Infantry, seamen, gun crews	80,705	23.2	-	-	8,222	7.4	-	-
Electronic equip repair	11,955	3.4	-	-	8,927	8.0	-	-
Communications, intelligence	19,805	5.7	-	-	3,499	3.1	-	-
Health care	14,203	4.1	-	-	4,297	3.9	-	-
Technical and allied support	8,992	2.6	-	-	4,504	4.0	-	-
Funct support, admin	47,784	13.7	-	-	20,612	18.5	-	-
Electric/mech equip repair	47,287	13.6	-	-	25,645	23.0	-	-
Craftworkers	14,092	4.0	-	-	6,261	5.6	-	-
Service, supply handlers	41,127	11.8	-	-	5,969	5.4	-	-
Non-occupational	26,394	7.6	-	-	8,336	7.5	-	-
Officers								
General officers and executives	95	0.0	-	-	361	0.3	-	-
Tactical operations	16,857	4.8	-	-	4,037	3.6	-	-
Intelligence	1,038	0.3	-	-	347	0.3	-	-
Engineering and maintenance	3,870	1.1	-	-	1,688	1.5	-	-
Scientists, professionals	1,085	0.3	-	-	619	0.6	-	-
Health care	2,982	0.9	-	-	2,103	1.9	-	-
Administrators	2,582	0.7	-	-	1,162	1.0	-	-
Supply, allied specialists	3,674	1.1	-	-	748	0.7	-	-
Non-occupational	3,191	0.9	-	-	382	0.3	-	-

*based on DoD occupational area codes

Acute respiratory disease (ARD), by week, Army basic training centers, 1992-2002.

ARD Rate¹



¹ARD rate = cases per 100 trainees per week

²ARD rate ≥ 1.5 for 2 weeks defines epidemic

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