



MSMR



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Data in the MSMR are provisional, based on reports and other sources of data available to the Army Medical Surveillance Activity (AMSA). Notifiable events are reported by date of onset (or date of notification when date of onset is absent). Only cases submitted as confirmed are included.

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Surveillance Trends

Breast Cancer among Female Soldiers, US Army, 1998-1999

Breast cancer is the second leading cause of cancer deaths among women.¹ During the year 2000 in the United States, it is estimated that 183,000 new cases of breast cancer will be diagnosed and nearly 41,000 women will die from the disease.¹ Early detection is the best weapon in the fight against breast cancer since early detection leads to early diagnosis.¹ Ninety percent of women whose breast cancers are detected and treated early can expect to be disease free after 5 years.¹

The American Cancer Society recommends that women younger than 40 perform breast self examinations (BSE) every month and have breast examinations by a physician every 3 years. Recent surveys among nonmilitary women in the US have found discordances between their knowledge and practices regarding the early detection of breast cancer. For example, while their knowledge of BSE is high, as high as 92% in some surveys,² their practice of BSE is low, ranging from 20% to 40%.³⁻⁶

This study was designed to document rates of malignant breast cancer diagnoses among female active duty soldiers, more than 90% of whom are younger than 40 years old, and to assess practices of female soldiers in regard to self- and physician-conducted breast examinations.

Methods. The study period was January 1998 to December 1999. A breast cancer case was defined as a woman on active duty in the US Army who had a primary diagnosis of "malignant neoplasm of the female breast" (ICD-9-CM 174.xx) during an outpatient visit or hospital admission during the study period. All females who served in the US Army during the study period were included in denominators for rate calculations.

The Health Risk Appraisal (HRA) is a self-administered questionnaire that is completed during in processing to the military, as part of physical examinations, during changes of duty stations, and for a variety of other reasons. For this study, behaviors related to the early detection of breast cancer were estimated from the responses of female soldiers who completed a Health Risk Appraisal (HRA) during the study period. If a female soldier completed more than one HRA during the study period, only the first was used for analyses.

Results. In 1998 and 1999, there were 119 cases of breast cancer reported among active duty US Army women. The overall incidence rate was 0.85 per 1,000 person-years. As expected, rates of breast cancer increased with age. For example, the rate was

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Views and opinions expressed are not necessarily those of the Department of the Army.

Table 1. Malignant neoplasm of the breast, US Army women, 1998-1999

Characteristics	17-24 years old		25-34 years old		35 and older		Total	
	Cases	Rate per 1,000 person-years	Cases	Rate per 1,000 person-years	Cases	Rate per 1,000 person-years	Cases	Rate per 1,000 person-years
Total	16	0.27	33	0.61	70	2.66	119	0.85
Race								
White	9	0.30	16	0.71	28	2.56	53	0.83
Black	4	0.18	13	0.50	36	2.84	53	0.87
Other	3	0.43	4	0.67	6	2.30	13	0.83
Rank								
Enlisted	14	0.25	26	0.59	44	2.43	84	0.70
Officer	2	0.73	7	0.70	26	3.20	35	1.68

Figure 1. Frequency of breast self examinations, by age, US Army women, 1998-1999

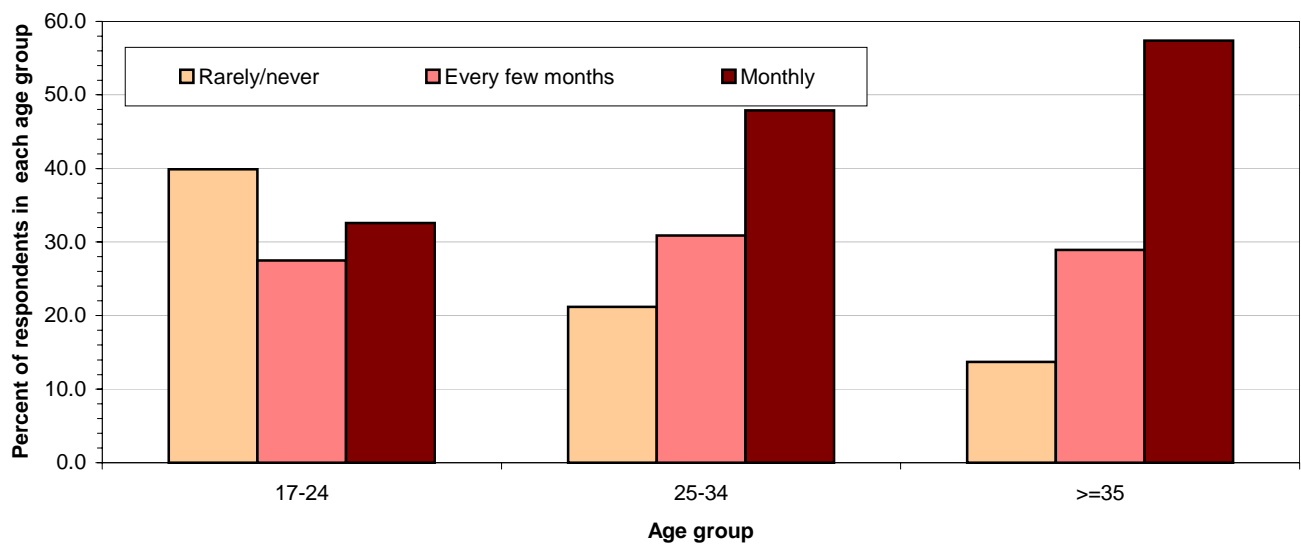


Figure 2. Percent of female soldiers who reported monthly breast self examinations, by family history of breast cancer and age, US Army, 1998-1999

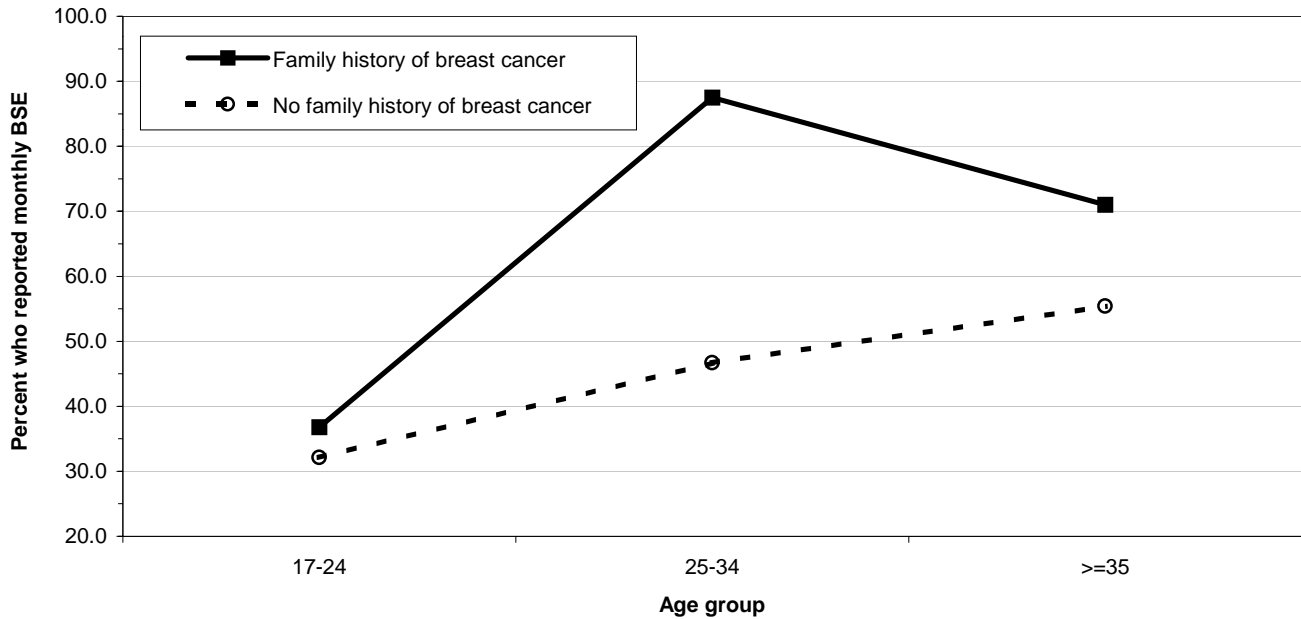
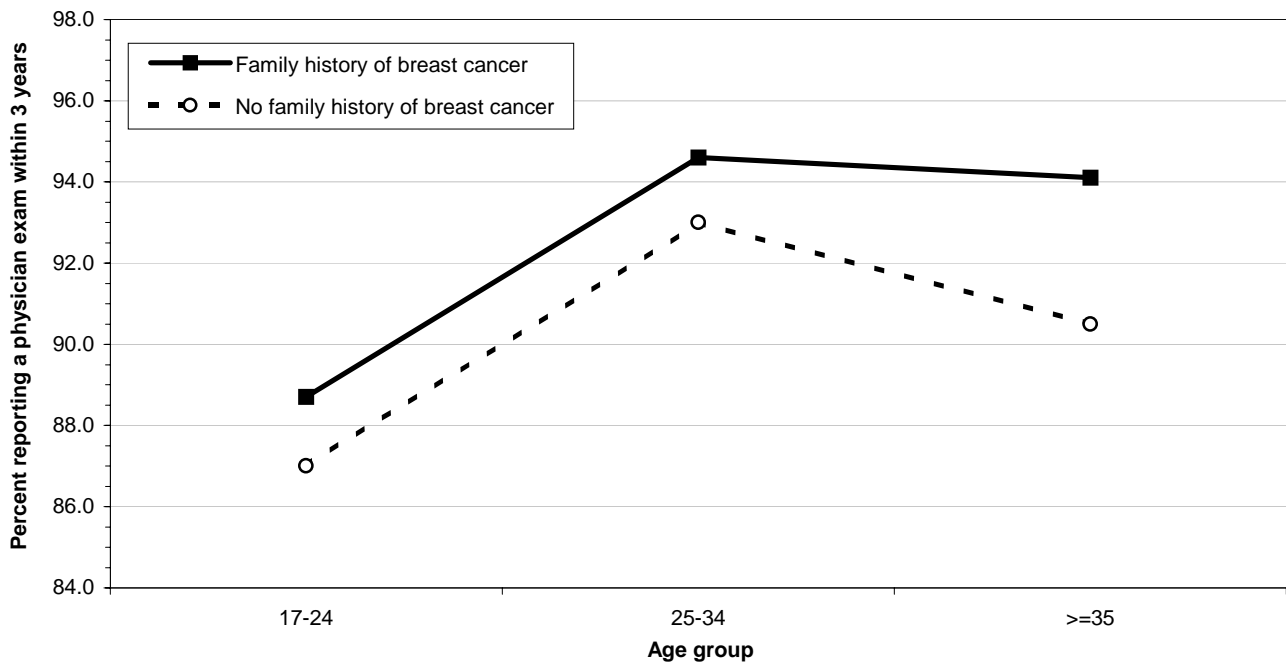


Figure 3. Percent of female soldiers who reported a physician-conducted breast examination within 3 years, by family history of breast cancer and age, US Army, 1998-1999



approximately 10-times higher among women older than 35 than among those younger than 25 (table 1, page 3). There were minimal differences in relation to race (table 1).

During the study period, 4,637 female soldiers responded to all of the breast cancer screening questions on the HRA. The average age of respondents was 27.1 years old, approximately half (51%) represented black or "other" non-white racial groups, and 28% had less than 1 year of military service and 40% less than 2 years. Approximately 11% (n=496) of respondents reported that one or more of their family members had had breast cancer.

Overall, fewer than half (42.4%) of all respondents reported monthly breast self-examinations. The proportions that reported monthly breast self-examinations increased sharply with age (figure 1, page 3). Women older than 35 were 1.8-times more likely than those younger than 25 to report monthly breast self-examinations (figure 1). Female soldiers over 25 with family histories of breast cancer were much more likely than those without family histories to report monthly breast self examinations (figure 2).

Overall, 90% of respondents reported physician-conducted breast examinations within 3 years (figure 3). There was relatively little variation in relation to age or family history; for example, 86% to 95% of all age- and family history-defined subgroups reported physician-conducted examinations within 3 years.

Editorial comment: Breast cancer occurs relatively infrequently among the generally healthy young women who serve in the US Army. As expected, breast cancer rates among female soldiers increased significantly with age; in fact, nearly 60% of cases occurred among the less than 20% of female soldiers who were older than 35. Still, since breast cancers in their early stages are so amenable to treatment and cure, behaviors directed at its early detection should

be encouraged among female soldiers of all ages.

The results of this survey document that most female soldiers, regardless of their ages or family histories, were examined by a physician within three years. This is not surprising since soldiers undergo mandatory periodic physical examinations and have free access to medical care. In contrast, the behaviors of female soldiers regarding breast self-examinations vary significantly with age and family history. For example, women older than 25 and those with family histories of breast cancer were more likely than their counterparts to report monthly breast self-examinations. Even then, however, more than 40% of all women over 35 and nearly 30% of those with positive family histories reported that they did not do monthly breast self-examinations. To the extent that these results reflect the current knowledge, attitudes, and behaviors of female soldiers in general, they call for renewed and innovative efforts directed at enhancing early breast cancer detection practices.

Analysis and report by Scott Barnett, PhD, Data Analysis Group, AMSA.

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Surveillance Trends

Acquired Hallux Valgus (“Bunions”) in the US Armed Forces, 1998-1999

Injuries among military personnel are a significant source of morbidity, mortality, disability, and lost duty time.¹⁻⁴ Many activities unique to the military involve marching (often with heavy loads), running, jumping, and standing for long periods. In addition, many military members participate in recreational activities that involve running, jumping, hiking, and physical contact. As a result, servicemembers are a high risk group for overuse and acute traumatic injuries of the foot.⁵ Many foot-related injuries if not treated immediately and allowed to heal thoroughly can result in chronic or recurrent injuries and major prolonged disabilities.⁶

Acquired hallux valgus is a disorder characterized by deviation of the great toe towards the midline of the foot due to a deformity of the joint at the base of the great toe. The condition is often accompanied by a bony outgrowth (bunion) at the base of the great toe. Because bunions often are pressure points, they are susceptible to irritation and inflammation, particularly from constrictive footwear and prolonged stressful, high impact, or traumatic activities.

The causes of acquired hallux valgus and bunions are unclear. Most cases probably manifest interactions between genetic susceptibilities (e.g., foot structure) and environmental stresses (e.g., footwear). The extreme excess of cases in women versus men in the US and the virtual absence of cases in locations where shoes are not worn⁶ suggest that tight fitting shoes are a significant etiologic factor.

Acquired hallux valgus and bunions are among the most common foot-related disorders of military servicemembers. The purpose of this report is to describe rates and correlates of risk of acquired hallux valgus among active duty members of the US Armed Forces.

Methods. Standard ambulatory data records and standard inpatient data records, maintained in the Defense Medical Surveillance System, were searched to identify all medical encounters among active duty military personnel from January 1998 through December 1999 with a primary diagnosis of acquired hallux valgus (ICD-9-CM code 735.0). An incident case was defined as the first inpatient or outpatient

visit during the study period. Incidence rates for ambulatory visits (per 1,000 person-years) and for hospitalizations (per 100,000 person-years) were calculated by gender, age, service, grade, race, and occupation.

Results. During the period, there were 167 hospitalizations (of 142 individuals) and 15,387 ambulatory clinic visits (by 5,639 individuals) with primary diagnoses of acquired hallux valgus. Overall, the rate of incident ambulatory visits was 2.1 per 1,000 person-years, and the rate of hospitalizations was 5.2 per 100,000 person-years (table 1).

Relative rates in demographic subgroups were remarkably similar in the inpatient and outpatient settings (table 1). For example, rates of ambulatory visits and hospitalizations for acquired hallux valgus were approximately 5 times higher among females than males and generally increased with age. Rates of inpatient and outpatient encounters were more than twice as high among Black (compared to White and “other”) servicemembers.

Soldiers had higher rates of hospitalizations and ambulatory visits than their Navy, Air Force, or Marine counterparts. With control for age (data not shown), rates of ambulatory visits and hospitalizations were higher among enlisted members than officers and among those in lower grades than in higher grades. Among enlisted persons, “health care specialists” had higher rates of ambulatory visits and hospitalizations for acquired hallux valgus than any other occupational group. Among officers, “health care officers” had the second highest rate of ambulatory visits (table 1). Officers (“tactical operations officers”) and enlisted members (“infantry, gun crews, and seamanship”) in combat-specific occupational groups had relatively low rates of both ambulatory visits and hospitalizations for acquired hallux valgus (table 1).

Editorial comment. Acquired hallux valgus is often attributed to the wear of tight-fitting shoes. It may also be a sequela of chronic or recurrent injuries to the metatarsophalangeal joint of the great toe. Prevention measures include the wear of shoes and

Table 1. Inpatient and ambulatory clinic visits for acquired hallux valgus (ICD-9-CM code 735.0), active duty US Armed Forces, 1998-1999

Characteristics	Hospitalizations				Ambulatory Visits			
	Number		Incidence rate/100,000	Rate ratios	Number		Incidence rate/1,000	Rate ratios
	Hosps	Persons			Visits	Persons		
Total	167	142	5.2	-	15,387	5,639	2.1	-
Gender								
Female	81	66	17.1	5.3	7,390	2,531	6.5	5.0
Male	86	76	3.2	1.0	7,997	3,108	1.3	1.0
Age Group								
<20	8	6	2.6	1.0	547	300	1.3	1.0
20-24	46	38	4.6	1.7	3,838	1,365	1.6	1.3
25-29	38	32	5.6	2.1	3,167	1,093	1.9	1.5
30-34	25	23	5.2	2.0	2,554	908	2.0	1.6
35-39	24	20	4.9	1.9	2,799	990	2.4	1.9
>39	26	23	8.9	3.4	2,482	983	3.8	2.9
Service								
Army	106	91	9.6	5.5	7,836	2,705	2.9	1.8
Navy	22	19	2.6	1.5	3,495	1,279	1.7	1.1
Air Force	33	26	3.6	2.1	2,702	1,123	1.6	1.0
Marines	6	6	1.8	1.0	1,354	532	1.6	1.0
Grade								
Junior enlisted	73	61	5.0	1.7	6,433	2,257	1.8	1.2
Senior enlisted	73	63	5.8	2.0	7,140	2,579	2.4	1.6
Junior officer	9	8	3.0	1.0	960	409	1.5	1.0
Senior officer	12	10	5.8	1.9	854	398	2.3	1.5
Race								
White	87	69	3.6	1.0	7,738	3,042	1.6	1.0
Black	66	59	10.6	3.0	6,519	2,158	3.9	2.4
Other	14	14	5.4	1.5	1,119	435	1.7	1.1
Occupations								
Enlisted								
Health care specialists	24	19	11.7	10.4	2,033	653	4.0	2.9
Functional support and admin	34	33	8.6	7.6	3,265	1,167	3.0	2.2
Service and supply handlers	16	13	6.7	6.0	1,511	449	2.3	1.7
Craftworkers	4	4	4.9	4.4	445	155	1.9	1.4
Communications & intelligence specialists	16	11	5.2	4.6	1,021	387	1.8	1.3
Other technical & allied specialists	6	5	7.1	6.3	359	131	1.9	1.4
Infantry, gun crews, & seamanship	25	21	4.6	4.1	1,815	714	1.6	1.1
Electrical/mech equipment repairers	10	9	2.0	1.7	1,973	706	1.5	1.1
Electronic equipment repair	10	8	3.9	3.4	867	302	1.5	1.1
Non-occupational (includes trainees)	1	1	1.1	1.0	200	122	1.4	1.0
Unknown	-	-	-	-	84	50	1.9	1.4
Officer								
General officers & executives, NEC	1	1	14.5	-	50	25	3.6	3.9
Health care officers	7	5	7.0	-	494	222	3.1	3.3
Administrators	1	1	3.4	-	235	86	2.9	3.1
Supply, procurement, & allied officers	3	3	8.3	-	199	92	2.6	2.7
Intelligence officers	1	1	4.8	-	106	41	2.0	2.1
Scientists and professionals	1	1	3.9	-	106	46	1.8	1.9
Engineering and maintenance officers	6	5	9.1	-	248	86	1.6	1.7
Non-occupational or unknown	-	-	-	-	72	41	1.4	1.5
Unknown	-	-	-	-	53	28	1.3	1.3
Tactical operations officers	1	1	0.7	-	251	136	0.9	1.0

boots that provide proper room and support to the forefoot and toes. Proper footwear is particularly important during activities that require rapid starting (e.g., soccer, racquetball), stopping (e.g., parachute landings), and quick lateral movements (e.g., basketball). The relatively high rates among health care workers in this survey may reflect the relative overrepresentation of females in medical occupations and perhaps better access to medical care by health care workers. Still, proper footwear for health care workers (particularly those who are on their feet for long periods) is a potentially important preventive measure.

Finally, if the joint at the base of the great toe is acutely injured, it should be allowed to heal thoroughly before stressful activities are resumed. After a turf-toe injury, for example, the joint at the base of the great toe may stiffen, its mobility and range of motion may decrease, and its susceptibility to reinjury may increase.⁷ If the toe is injured chronically or

recurrently, joint instability, bone spurs, chronic pain, and occupational disabilities may occur.

Data analysis and report by Sandra Lesikar, PhD, Data Analysis Group, AMSA.

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Reportable Events, US Army, Third Quarter, 2000

In the US Army, medical surveillance of infectious diseases and other conditions of particular military operational and/or public health importance is conducted through the Army's Reportable Medical Events System (RMES). Automated reporting of notifiable medical events has been conducted Armywide since 1995. Currently, 34 preventive medicine activities in the United States, Korea, and Europe electronically transmit reportable medical events data to the Army Medical Surveillance Activity (AMSA) in Washington, DC. AMSA compiles, summarizes, and disseminates reports of frequencies, rates, trends, and correlates of risk of reportable conditions. A Department of Defense consensus list prescribes 70 conditions that are reportable in the Army and other Services.¹

Between October 1999 and September 2000, 14,561 cases of reportable medical events—an average of 40 per day—were reported to AMSA (table S1). There were approximately 14% more reports during the period than during the preceding 12 months. Between October 1999 and September 2000, sexually transmitted diseases accounted for approximately 88% of all reportable events—the proportion was similar to that of the prior year. “*Chlamydia trachomatis* genital infection” was the most frequently reported notifiable condition (table S2).

In relation to the average of the prior three years, there were approximately three-times as many reports of influenza and twice as many reports of heat injuries (figure S1). The increase in reports of influenza reflects enhanced efforts at some installations to monitor influenza-like illness activity in high-risk populations and settings (e.g., basic training).² Reports of heat injuries have increased each year since automated reporting began. The trend undoubtedly reflects continuing improvements in

the ascertainment and reporting of notifiable heat injury cases.² It is noteworthy, however, that in the past year, there were significantly more heat exhaustion case reports but fewer heat stroke reports. The finding may reflect improvements in the detection and clinical management of soldiers in the early stages of heat injury pathogenesis.

In contrast, relative to the average of the prior three years, there were approximately 38% fewer frostbite cases, 38% fewer hepatitis B cases, and 19% fewer varicella cases reported. The decline in frostbite cases reflects the fact that in the continental United States the winter of 1999–2000 was the warmest since 1900.³ The decreases in hepatitis B and varicella case reports may reflect the effects of expanded uses of vaccines against these viruses in high risk populations and settings.⁴⁻⁷

Report submitted by Abigail Wilson, MPH, Data Analysis Group, AMSA.

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**Table SI. Reportable events, US Army medical treatment facilities,¹
cumulative events for all beneficiaries, October 1999-September 2000²**

Diagnosis ³	Oct-Dec 1999	Jan-Mar 2000	Apr-Jun 2000	Jul-Sep 2000	Diagnosis ³	Oct-Dec 1999	Jan-Mar 2000	Apr-Jun 2000	Jul-Sep 2000
All reportable events	3120	4305	4085	3028	Listeriosis	-	-	-	-
Amebiasis	-	2	1	-	Lyme disease	16	5	19	35
Anthrax	-	-	-	-	Malaria, falciparum	2	2	2	3
Biological warfare agent exposure	-	-	-	-	Malaria, malariae	-	-	-	-
Botulism	-	-	-	-	Malaria, ovale	-	-	-	-
Brucellosis	-	-	-	-	Malaria, unspecified	1	-	8	2
Campylobacter	21	20	37	40	Malaria, vivax	6	2	9	35
Carbon monoxide poisoning	4	1	2	1	Measles	-	1	-	-
Chemical agent exposure	-	-	-	-	Meningococcal meningitis	1	4	-	1
Chlamydia genital infection	1975	2767	2618	1772	Meningococcal septicemia	-	-	-	-
Cholera	-	-	-	-	Mumps	-	3	1	-
Coccidioidomycosis	-	1	1	1	Pertussis	-	1	8	4
Cold weather, frostbite	19	18	1	-	Plague	-	-	-	-
Cold weather, hypothermia	1	3	-	-	Pneumococcal pneumonia	1	1	3	1
Cold weather, immersion type	19	8	1	-	Poliomyelitis	-	-	-	-
Cold weather, unspecified	-	21	-	-	Q fever	-	-	-	-
Cryptosporidiosis	-	-	-	2	Rabies, human	-	-	-	-
Cyclospora	-	-	1	-	Relapsing fever	-	-	-	-
Dengue fever	-	-	1	1	Rheumatic fever, acute	-	1	-	-
Diphtheria	-	-	-	-	Rift valley fever	-	-	-	-
E. coli O157:H7	6	2	4	8	Rocky mountain spotted fever	-	-	-	-
Ehrlichiosis	-	-	2	1	Rubella	1	-	-	-
Encephalitis	1	-	1	-	Salmonellosis	38	27	52	76
Filariasis	-	-	-	-	Schistosomiasis	-	-	1	-
Giardiasis	18	17	10	20	Shigellosis	24	13	18	12
Gonorrhoea	529	669	671	502	Smallpox	-	-	-	-
H. influenzae, invasive	4	2	1	3	Streptococcus, group A, invasive	3	1	3	1
Hantavirus infection	1	-	-	-	Syphilis, congenital	1	1	1	-
Heat exhaustion	4	3	142	157	Syphilis, latent	11	7	18	4
Heat stroke	3	1	23	25	Syphilis, primary/secondary	17	20	8	9
Hemorrhagic fever	-	-	-	-	Syphilis, tertiary	4	3	2	5
Hepatitis A	2	4	3	3	Tetanus	-	-	-	-
Hepatitis B	2	14	12	8	Toxic shock syndrome	-	1	-	-
Hepatitis C	13	22	13	4	Trichinosis	-	-	-	-
Influenza	93	201	3	-	Trypanosomiasis	-	-	-	-
Lead poisoning	3	3	-	1	Tuberculosis, pulmonary	8	7	3	4
Legionellosis	1	1	-	-	Tularemia	-	-	1	1
Leishmaniasis, cutaneous	-	-	-	-	Typhoid fever	-	-	-	-
Leishmaniasis, mucocutaneous	-	-	-	-	Typhus fever	-	-	-	-
Leishmaniasis, unspecified	-	-	-	-	Urethritis, non-gonococcal	251	357	345	273
Leishmaniasis, visceral	-	-	-	-	Vaccine, adverse event	7	21	9	4
Leprosy	-	-	-	-	Varicella, active duty only	9	47	25	7
Leptospirosis	-	-	1	2	Yellow fever	-	-	-	-

1. Main and satellite clinics.

2. Events reported by October 7, 2000.

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

Note: Completeness and timeliness of reporting varies by facility.

Source: Army Reportable Medical Events System.

Table S2. Reportable events, US Army medical treatment facilities,¹ cumulative events for all beneficiaries, October 1998-September 1999 and October 1999-September 2000²

Diagnosis ³	1998-1999		1999-2000		Diagnosis ³	1998-1999		1999-2000	
	AD ⁴	Other	AD ⁴	Other		AD ⁴	Other	AD ⁴	Other
All reportable events	7397	3362	8054	6484	Listeriosis	-	2	-	-
Amebiasis	1	1	1	2	Lyme disease	12	17	17	58
Anthrax	-	-	-	-	Malaria, falciparum	4	3	1	8
Biological warfare agent exposure	-	-	-	-	Malaria, malariae	-	-	-	-
Botulism	-	-	-	-	Malaria, ovale	-	1	-	-
Brucellosis	-	-	-	-	Malaria, unspecified	4	1	8	3
Campylobacter	51	50	21	97	Malaria, vivax	54	5	45	7
Carbon monoxide poisoning	-	-	2	6	Measles	-	3	-	1
Chemical agent exposure	-	-	-	-	Meningococcal meningitis	6	1	3	3
Chlamydia genital infection	4296	2202	4969	4163	Meningococcal septicemia	6	14	-	-
Cholera	-	-	-	-	Mumps	1	1	2	2
Coccidioidomycosis	2	2	-	3	Pertussis	-	5	1	12
Cold weather, frostbite	86	1	33	5	Plague	-	1	-	-
Cold weather, hypothermia	12	-	3	1	Pneumococcal pneumonia	17	3	2	4
Cold weather, immersion type	8	-	27	1	Poliomyelitis	-	-	-	-
Cold weather, unspecified	2	-	21	-	Q fever	-	-	-	-
Cryptosporidiosis	-	1	1	1	Rabies, human	-	-	-	-
Cyclospora	-	-	-	1	Relapsing fever	-	-	-	-
Dengue fever	2	3	1	1	Rheumatic fever, acute	-	1	-	1
Diphtheria	-	-	-	-	Rift valley fever	-	-	-	-
E. coli O157:H7	1	9	9	11	Rocky mountain spotted fever	-	3	-	-
Ehrlichiosis	-	1	1	2	Rubella	1	4	-	1
Encephalitis	-	-	1	1	Salmonellosis	48	129	34	159
Filariasis	-	1	-	-	Schistosomiasis	-	-	1	-
Giardiasis	20	44	15	50	Shigellosis	22	27	7	60
Gonorrhea	1347	486	1464	907	Smallpox	-	-	-	-
H. influenzae, invasive	3	-	2	8	Streptococcus, group A, invasive	1	-	-	8
Hantavirus infection	2	-	-	1	Syphilis, congenital	1	1	2	1
Heat exhaustion	205	30	215	91	Syphilis, latent	19	13	15	25
Heat stroke	67	4	33	19	Syphilis, primary/secondary	42	16	29	25
Hemorrhagic fever	-	-	-	-	Syphilis, tertiary	7	6	2	12
Hepatitis A	5	10	1	11	Tetanus	-	-	-	-
Hepatitis B	37	23	14	22	Toxic shock syndrome	-	-	-	1
Hepatitis C	14	23	5	47	Trichinosis	-	-	-	-
Influenza	74	128	15	282	Trypanosomiasis	-	-	-	-
Lead poisoning	-	-	-	7	Tuberculosis, pulmonary	6	16	6	16
Legionellosis	1	3	-	2	Tularemia	-	-	1	1
Leishmaniasis, cutaneous	3	-	-	-	Typhoid fever	-	-	-	-
Leishmaniasis, mucocutaneous	-	-	-	-	Typhus fever	-	-	-	-
Leishmaniasis, unspecified	-	-	-	-	Urethritis, non-gonococcal	823	44	923	303
Leishmaniasis, visceral	-	-	-	-	Vaccine, adverse event	20	4	34	7
Leprosy	-	-	-	-	Varicella, active duty only	64	15	67	21
Leptospirosis	-	4	-	3	Yellow fever	-	-	-	-

1. Main and satellite clinics.

2. Events reported by October 7, 2000.

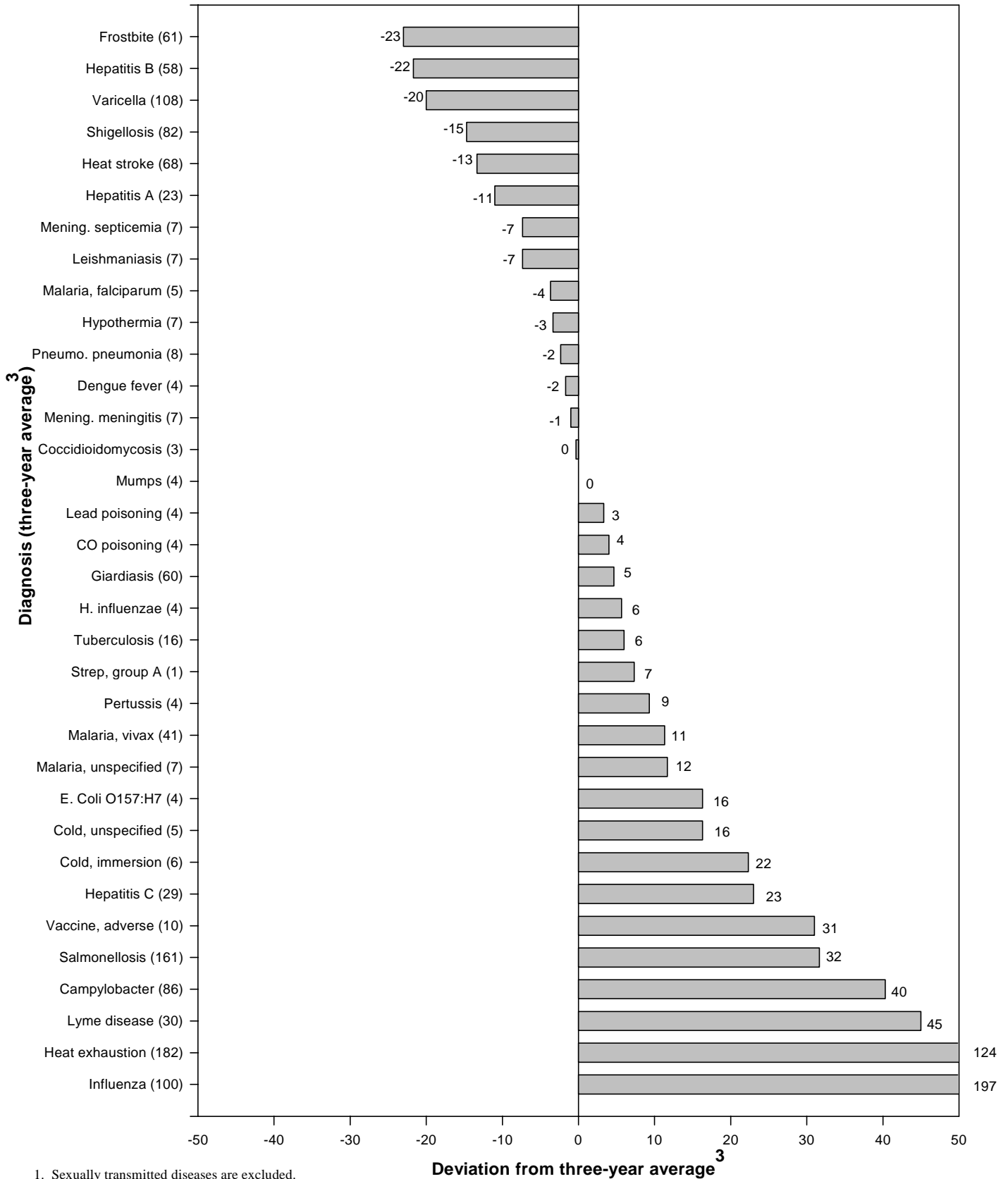
3. Tri-Service Reportable Events, Version 1.0, July 1998.

4. Active duty personnel.

Note: Completeness and timeliness of reporting varies by facility.

Source: Army Reportable Medical Events System.

Figure S1. Reportable events,¹ US Army medical treatment facilities, October 1999-September 2000² compared to the three-year average,³ 1996-1999



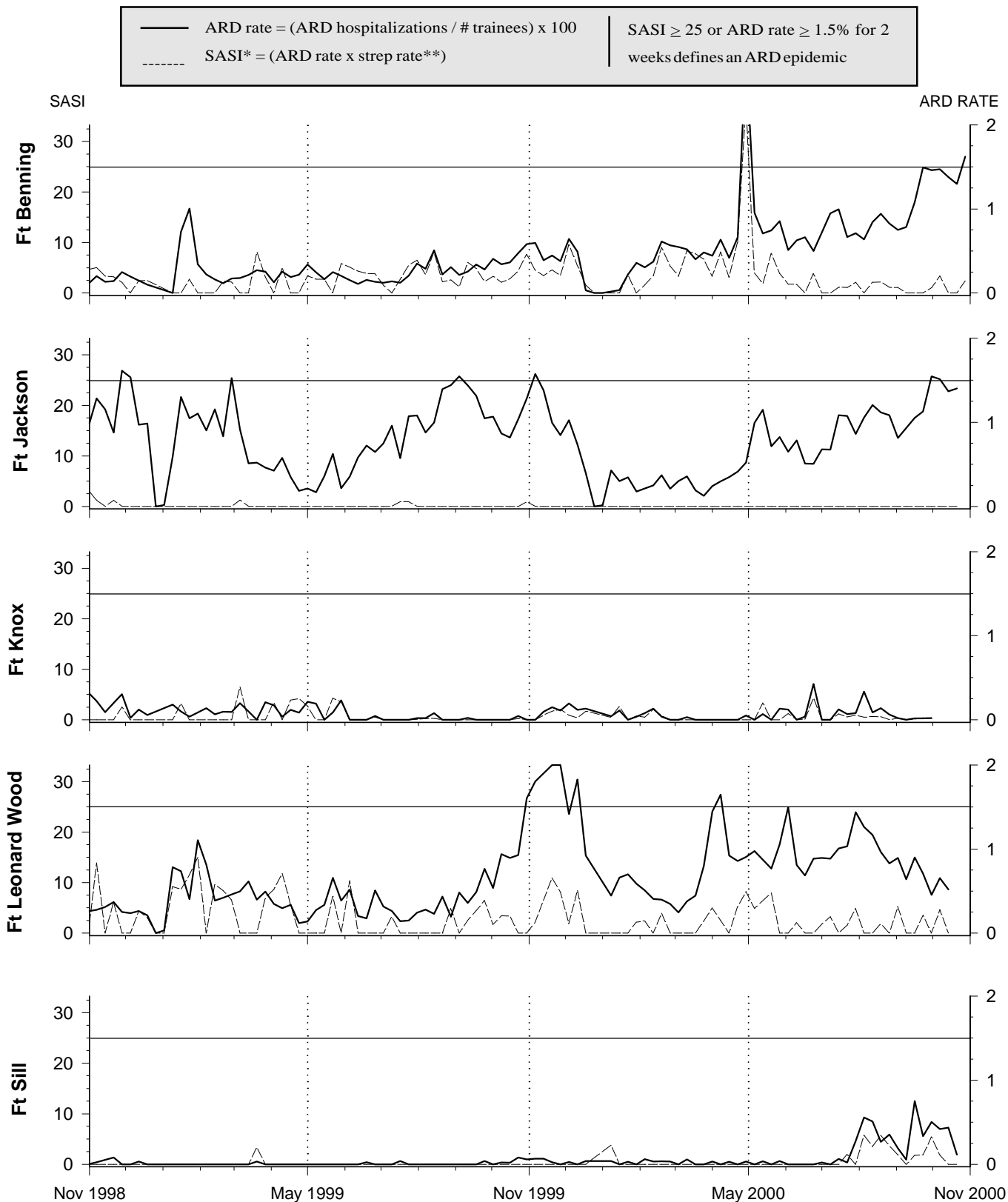
1. Sexually transmitted diseases are excluded.

2. Reported by October 7, 2000.

3. Comparisons given for diseases that had a total four year incidence of at least 10 cases. All averages are rounded to the nearest integer.

Source: Army Reportable Medical Events System

**Figure II. Acute respiratory disease (ARD) surveillance update
US Army initial entry training centers**



* SASI (Strep ARD Surveillance Index) is a reliable predictor of serious strep-related morbidity

** Strep rate = (Group A beta-hemolytic strep(+) / # cultures) x 100

Assault-related Hospitalizations, Active Duty Military Personnel, 1990-1998 (Revised)

Figure 1 below and table 1 of this article, which originally appeared in the August 2000 issue, were

revised. The online version of the August issue has been updated to reflect these changes.

Figure 1. Crude rates of assault-related hospitalizations, in demographic- and military-defined subgroups, active duty, US Armed Forces, 1990-1999

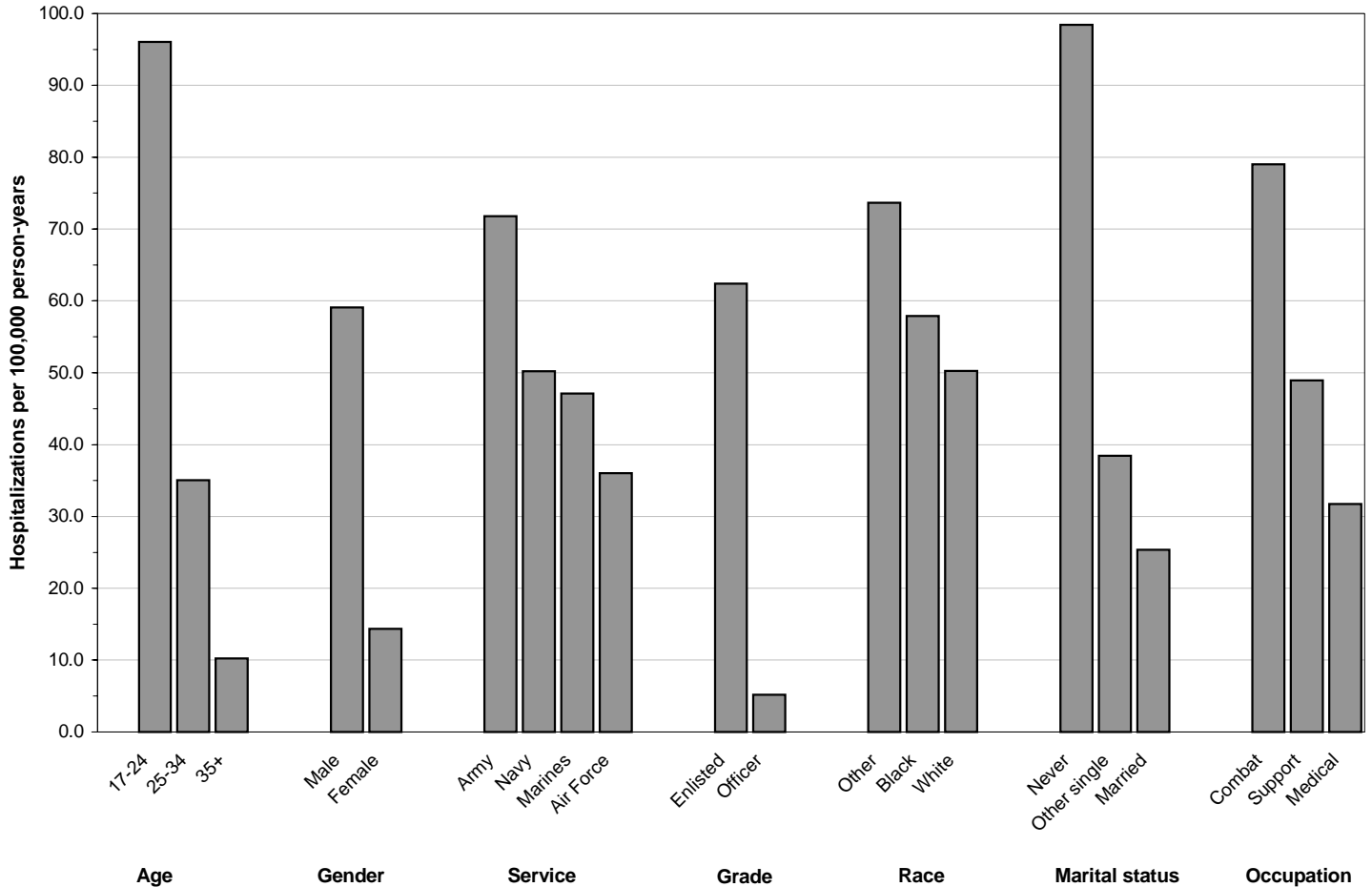


Table 1. Rates of assault-related hospitalizations among active duty servicemembers, 1990-1999

Characteristics	Male								Female								Total	
	17-24		25-34		35+		Subtotal		17-24		25-34		35+		Subtotal			
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Total	6,010	107.7	2,129	38.2	350	10.9	8,489	59.1	169	19.8	105	13.2	15	4.1	289	14.3	8,778	53.6
Service																		
Army	2,727	141.4	1,020	52.9	155	14.6	3,902	79.3	81	26.4	65	21.7	9	7.1	155	21.2	4,057	71.8
Marines	522	51.3	258	54.2	53	24.7	833	48.8	11	21.0	1	3.8	1	11.4	13	14.8	846	47.1
Navy	1,523	92.6	632	39.8	124	13.9	2,279	55.2	36	15.4	17	8.6	4	4.3	57	10.9	2,336	50.2
Air Force	1,238	125.1	219	13.9	18	1.7	1,475	40.9	41	15.9	22	8.0	1	0.7	64	9.5	1,539	35.9
Grade																		
Officer	25	14.0	76	7.6	24	2.3	125	5.7	1	2.8	3	1.9	2	1.6	6	1.9	131	5.2
Enlisted	5,985	110.8	2,053	44.9	326	14.9	8,364	68.7	168	20.6	102	16.0	13	5.5	283	16.7	8,647	62.4
Race																		
White	4,234	101.2	1,352	33.5	213	9.0	5,799	54.8	87	16.3	47	10.0	9	3.8	143	11.5	5,942	50.2
Black	1,159	117.2	536	47.9	96	16.8	1,791	66.9	71	28.3	48	17.7	5	4.7	124	19.7	1,915	57.9
Other	617	150.5	241	57.4	41	15.0	899	81.5	11	16.0	10	18.2	1	4.3	22	15.0	921	73.7
Marital Status																		
Single	5,043	127.2	911	76.3	68	32.1	6,022	112.1	115	20.5	32	12.5	3	3.6	150	16.7	6,172	98.4
Married	925	59.4	1,100	26.6	246	8.7	2,271	26.6	52	19.3	62	13.4	9	4.0	123	12.9	2,394	25.3
Other	42	110.5	118	56.0	36	24.1	196	49.3	2	10.5	11	14.4	3	5.2	16	10.4	212	38.4
Occupation																		
Combat	1,920	139.3	600	42.7	88	23.1	2,608	82.4	10	13.2	2	3.7	0	0.0	12	7.9	2,620	79.0
Support	3,864	98.7	1,414	37.3	237	9.3	5,515	53.8	132	20.5	75	13.0	9	3.7	216	14.8	5,731	48.9
Medical	226	79.2	115	30.7	25	8.8	366	38.7	27	20.5	28	16.7	6	5.9	61	15.2	427	31.7

Note: Rates are expressed as hospitalizations per 100,000 person-years.

Table I. Sentinel reportable events, US Army medical treatment facilities¹
Cumulative events for all beneficiaries, calendar years through September 30, 1999 and 2000²

Reporting Facility	Number of reported events ³		Environmental				Food- and Water-borne							
			Cold		Heat		Campylobacter		Giardia		Salmonella		Shigella	
	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000
NORTH ATLANTIC RMC														
Walter Reed AMC, DC	146	155	-	-	-	-	3	2	5	6	2	9	-	5
Aberdeen Prov. Grd., MD	24	28	-	-	-	-	-	-	-	-	-	-	-	-
FT Belvoir, VA	175	170	-	-	2	8	8	11	8	5	9	7	3	2
FT Bragg, NC	997	1052	8	-	101	141	5	1	2	-	23	13	-	1
FT Drum, NY	173	138	15	9	3	1	1	-	4	-	1	-	-	-
FT Eustis, VA	166	174	1	-	3	8	1	4	-	-	4	5	1	-
FT Knox, KY	226	195	2	-	15	10	2	1	2	1	1	1	3	-
FT Lee, VA	127	196	-	-	1	1	-	-	-	-	-	-	-	-
FT Meade, MD	48	78	-	-	-	-	-	-	-	-	-	2	-	-
West Point, NY	51	88	-	1	2	1	-	-	-	-	-	3	-	-
GREAT PLAINS RMC														
Brooke AMC, TX	341	234	-	-	9	4	-	2	-	4	7	4	4	5
Beaumont AMC, TX	219	243	-	-	5	6	-	-	-	-	4	7	-	3
FT Carson, CO	573	478	2	-	-	-	4	1	9	1	6	1	1	6
FT Hood, TX	1056	1401	-	1	7	32	2	3	1	1	7	9	3	4
FT Huachuca, AZ	34	23	-	-	2	1	-	-	-	-	1	-	1	-
FT Leavenworth, KS	17	22	-	-	-	2	2	1	1	2	-	1	-	-
FT Leonard Wood, MO	133	136	3	3	2	10	-	1	1	1	2	-	-	-
FT Polk, LA	171	226	-	-	1	4	-	-	-	-	-	-	-	-
FT Riley, KS	219	157	1	22	11	1	-	-	-	-	-	-	-	-
FT Sill, OK	237	251	-	-	9	8	-	-	-	-	-	-	1	-
SOUTHEAST RMC														
Eisenhower AMC, GA	168	233	1	-	4	1	-	-	-	-	1	2	-	-
FT Benning, GA	326	262	-	-	99	51	1	1	2	1	11	11	2	-
FT Campbell, KY	236	357	2	2	9	3	6	3	1	5	2	16	10	12
FT Jackson, SC	381	347	-	-	-	1	-	-	-	-	1	-	-	-
FT Rucker, AL	43	63	-	-	4	1	-	-	-	-	-	3	1	-
FT Stewart, GA	283	430	-	-	3	26	-	-	-	-	2	5	-	-
WESTERN RMC														
Madigan AMC, WA	354	560	-	-	-	-	-	5	1	5	-	2	1	1
FT Irwin, CA	31	43	-	-	-	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	109	79	42	4	-	-	-	-	-	-	-	-	-	-
OTHER LOCATIONS														
Tripler, HI	436	629	-	-	1	3	22	35	12	6	9	10	1	-
Europe	502	1268	3	5	-	-	16	13	-	2	9	24	3	1
Korea	377	424	8	2	5	5	-	-	-	-	-	5	-	-
Total	8,379	10,140	88	49	298	329	73	84	49	40	102	140	35	40

1. Main and satellite clinics.

2. Events reported by October 7, 1999 and 2000.

3. Tri-Service Reportable Events, Version 1.0, July 1999.

**Table I. (Cont'd) Sentinel reportable events, US Army medical treatment facilities¹
Cumulative events for all beneficiaries, calendar years through September 30, 1999 and 2000²**

Arthropod-borne				Vaccine Preventable						Sexually Transmitted							
Lyme Disease		Malaria		Hepatitis A		Hepatitis B		Varicella		Chlamydia		Gonorrhea		Syphilis ⁴		Urethritis	
Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000
1	3	4	-	1	1	-	1	3	3	73	51	16	21	3	1	1	-
-	3	-	-	-	-	-	2	1	1	8	11	13	3	-	2	2	2
-	-	-	-	1	-	-	3	-	1	109	100	32	19	-	3	-	-
4	1	3	6	-	-	-	-	1	4	447	392	207	197	2	3	190	289
-	-	3	1	-	-	-	-	6	5	90	86	44	33	-	-	3	2
-	1	-	-	-	-	1	1	1	1	115	124	36	26	-	-	-	-
-	-	-	-	-	-	-	1	1	6	149	136	48	36	1	1	-	-
-	-	-	-	-	1	1	-	-	-	100	149	22	45	3	-	-	-
2	-	-	-	-	-	-	-	1	-	39	56	4	11	-	-	-	1
12	32	-	-	-	-	1	1	1	2	31	35	3	9	-	1	-	-
2	-	2	2	3	-	4	-	2	2	139	128	47	41	-	2	1	-
-	-	1	-	1	3	-	-	2	1	174	180	16	33	-	-	11	4
-	-	-	1	-	-	1	-	1	-	410	375	70	55	-	-	64	32
-	-	3	1	1	1	1	1	3	2	616	738	168	274	4	1	206	311
-	-	-	-	1	-	-	-	-	-	26	16	2	6	-	-	-	-
-	1	-	-	-	-	-	-	-	-	11	12	3	1	-	-	-	-
-	1	1	-	-	-	1	-	10	13	78	67	19	28	1	-	8	8
-	-	1	-	-	-	-	-	-	-	135	198	30	24	2	-	-	-
-	-	-	-	-	-	-	-	-	-	152	88	55	42	-	1	-	-
-	2	1	-	-	-	6	-	6	4	126	140	51	47	2	-	27	39
-	2	-	3	1	-	3	3	2	2	137	168	12	14	-	-	-	-
-	-	1	8	1	-	-	1	1	6	104	113	73	64	1	3	-	-
-	1	5	8	-	-	-	1	-	2	122	175	79	121	-	1	-	-
-	-	-	-	-	-	-	-	6	3	312	304	48	37	6	-	-	-
-	-	-	1	-	-	-	-	-	-	27	40	11	14	-	-	-	-
-	-	4	1	-	-	-	-	4	-	92	146	56	94	-	-	120	155
-	2	5	4	-	1	-	2	-	-	203	363	44	50	-	-	90	103
-	-	-	1	-	-	5	-	-	1	22	34	4	6	-	1	-	-
-	-	1	-	-	-	1	-	2	-	53	72	8	2	-	-	-	-
-	-	4	3	-	1	1	2	-	1	269	433	68	74	-	-	-	1
6	8	2	-	2	-	3	7	4	9	350	972	89	208	-	2	1	-
-	-	16	12	-	-	14	1	3	1	281	332	11	35	15	11	-	9
27	57	57	52	12	8	43	27	61	70	5,000	6,234	1,389	1,670	40	33	724	956

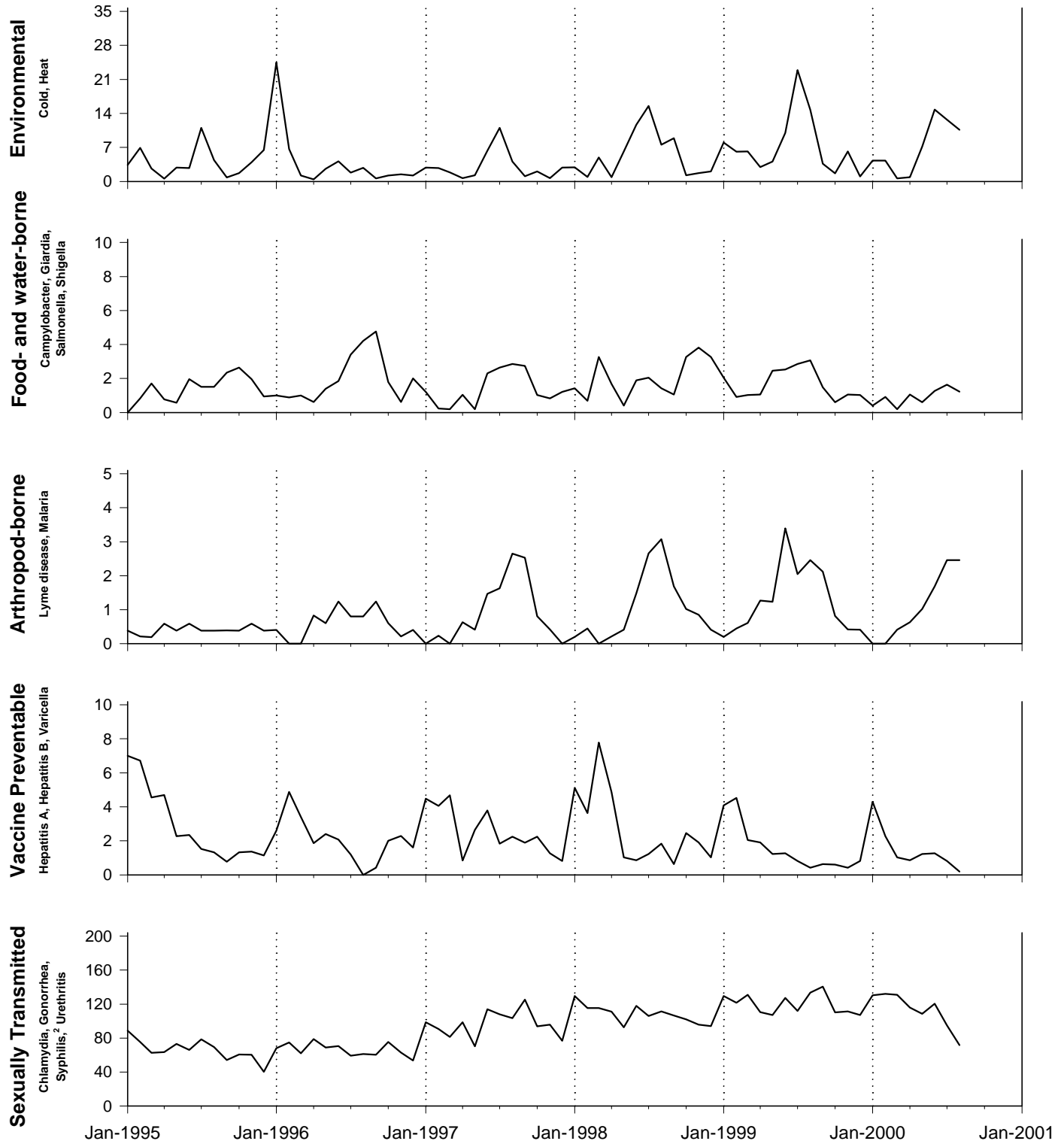
4. Primary and Secondary

Note: Completeness and timeliness of reporting varies by facility.

Source: Army Reportable Medical Events System.

Figure I. Sentinel reportable events (grouped), active duty soldiers, January 1995 - August 2000¹

Cases / 10,000 person-years



1. Events reported by September 7, 2000.
 2. Primary and Secondary.

Source: Army Reportable Medical Events System.

Table S2. Active duty force strength by MTF, US Army, June 2000

MTF/Post ²	Males							Females							All
	< 20	20-24	25-29	30-34	35-39	>= 40	Total	< 20	20-24	25-29	30-34	35-39	>= 40	Total	
NORTH ATLANTIC RMC															
Walter Reed AMC, DC	140	3117	2173	1801	1969	3202	12402	70	802	717	545	530	658	3322	15724
Aberdeen Prov. Ground, MD	343	651	319	328	376	329	2346	50	108	73	59	47	45	382	2728
FT Belvoir, VA	18	187	253	263	321	394	1436	7	71	104	80	69	81	412	1848
FT Bragg, NC	2119	11835	7846	5706	4334	2394	34234	304	1671	1153	652	464	249	4493	38727
FT Drum, NY	669	3972	2347	1372	1054	524	9938	159	455	234	147	91	52	1138	11076
FT Eustis, VA	541	1874	1249	974	938	816	6392	145	554	328	205	159	124	1515	7907
FT Knox, KY	1107	2958	1699	1347	1376	790	9277	44	258	203	155	109	73	842	10119
FT Lee, VA	478	1051	660	513	490	399	3591	324	533	288	163	127	96	1531	5122
FT Meade, MD	90	713	808	787	654	779	3831	41	270	260	203	161	129	1064	4895
West Point, NY	15	244	224	617	512	543	2155	12	55	66	118	75	72	398	2553
GREAT PLAINS RMC															
Brooke AMC, TX	198	785	926	945	840	948	4642	193	461	411	370	297	312	2044	6686
Beaumont AMC, TX	468	2413	1743	1296	1135	1045	8100	135	608	396	211	184	150	1684	9784
FT Carson, CO	724	4679	3225	2089	1599	878	13194	152	716	418	213	167	94	1760	14954
FT Hood, TX	2421	12926	8117	5150	3874	2203	34691	588	2306	1470	806	600	371	6141	40832
FT Huachuca, AZ	469	1289	933	613	541	430	4275	162	372	215	116	87	84	1036	5311
FT Leavenworth, KS	34	258	225	320	664	501	2002	17	73	49	53	79	56	327	2329
FT Leonard Wood, MO	1639	2154	1265	1198	1066	603	7925	555	678	329	222	146	91	2021	9946
FT Polk, LA	478	2610	1574	1339	848	396	7245	105	446	256	142	92	74	1115	8360
FT Riley, KS	691	3746	2098	1280	937	490	9242	102	385	242	142	113	60	1044	10286
FT Sill, OK	1476	3654	2180	1536	1269	760	10875	178	461	300	207	125	66	1337	12212
SOUTHEAST RMC															
Eisenhower AMC, GA	1066	2243	1498	1180	1124	1183	8294	196	635	448	344	309	251	2183	10477
FT Benning, GA	3616	5563	3154	2155	1500	759	16747	95	530	349	229	158	83	1444	18191
FT Campbell, KY	1196	7387	5256	3558	2523	1190	21110	225	1048	684	364	235	102	2658	23768
FT Jackson, SC	1719	1927	979	909	777	447	6758	1253	1103	497	341	201	89	3484	10242
FT McClellan, AL	172	193	126	141	212	230	1074	26	33	34	34	30	29	186	1260
FT Rucker, AL	93	727	1077	613	530	434	3474	46	205	162	80	51	33	577	4051
FT Stewart, GA	1261	6301	3896	2408	1859	920	16645	203	1091	674	396	267	150	2781	19426
WESTERN RMC															
Madigan AMC, WA	1180	5529	3636	2536	1976	1363	16220	272	999	635	369	254	204	2733	18953
FT Irwin, CA	172	1513	990	726	565	310	4276	32	194	125	84	51	27	513	4789
FT Wainwright, AK	396	1949	1525	846	529	322	5567	71	339	223	132	113	49	927	6494
OTHER LOCATIONS															
Tripler, HI	828	4304	3319	2002	1522	981	12956	187	844	695	378	257	216	2577	15533
Europe	2616	14522	13067	8320	6474	4070	49069	670	3145	2284	1349	1019	611	9078	58147
Korea	1920	8227	5797	4218	3633	2365	26160	519	1536	1003	662	582	372	4674	30834
Other/Unknown	844	2988	3966	6214	6303	4399	24714	233	567	665	738	668	479	3350	28087
Total	31197	124489	88150	65300	54324	37397	400857[§]	7371	23552	15990	10309	7917	5632	70771[§]	471651[§]

1. Based on duty zip code. Does not account for TDY.

§ Includes unknown age groups and unknown gender.

2. Includes any subordinate catchment areas not listed separately.

Source: Defense Manpower Data Center.

DEPARTMENT OF THE ARMY
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