VOL. 02 NO. 04 April 1996

USACHPPM

MSMR

Medical Surveillance Monthly Report

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Data in the MSMR is provisional, based on reports and other sources of data available to the Medical Surveillance Activity. Notifiable conditions 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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Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
APR 1996		**00-00-1996 to 00-00-1996**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Medical Surveillance Monthly Report (MSMR). Volume 2, Number 4, April 1996	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **U.S. Army Center for Health Promotion and Preventive Medicine,Armed Forces Health Surveillance Center (AFHSC),2900 Linden Lane, Suite 200,Silver Spring,MD,20910**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**Same as Report (SAR)**	**24**	

Outbreak Investigation

Rash Outbreaks - US Forces Operating in Belgium

During late December 1995 through January 1996 an outbreak of rash-associated illness occurred among units supporting Operation Joint Endeavor. In March a second outbreak occurred among U.S. Forces participating in a joint NATO training exercise, "Cooperative Adventure Express '96". A multi-disciplinary preventive medicine team investigated the outbreak sites and affected units and collected environmental and clinical laboratory specimens for analysis. The common factor uniting the two events was unit activity in northern Belgium. This article provides a brief update of significant findings.

Outbreak #1

This outbreak involved units preparing for deployment or supporting Operation Joint Endeavor. Five units were affected, including three Engineer companies deployed from CONUS installations and two support elements permanently assigned in Belgium and the Netherlands. Unit activities were centered at three staging areas in Belgium; a combat equipment site, a railhead and a local hotel. A total of 69 cases have occurred among 466 soldiers and civilians investigated. The clinical course was one of mild illness without sequelae. All cases have resolved and units were released to continue their respective missions. Numerous potential sources of infection or exposure have been explored and effectively ruled out through observation, laboratory analysis and epidemiologic questionnaire data. The investigation focused on potential infectious and occupational exposures; to include food and water sources, industrial or chemical exposures, immunizations and medications, disease vectors and reservoirs to include insects and rodents, and leisure activities.

Sixty-nine cases were observed among 466 soldiers and civilians questioned for an overall attack rate of roughly 15%. Attack rates for individual units ranged from 0-31%; highest among the two supporting units (27-31%) and intermediate (9-20%) among the Engineer companies transitioning through the Belgian sites. The mean latency period between arrival in Belgium and rash onset was roughly 8 days.

The most common clinical syndrome involved a rash (98%) without fever and with or without mild upper respiratory symptoms; rhinorrhea (49%), sore throat (47%), or cough (22%). The rash was as an erythematous, macular rubelliform-like rash with discrete lesions involving primarily the proximal upper (82%) and lower extremities (79%) and

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the trunk (69%). Few cases involved the face, palms or soles. The rash was mildly pruritic (75%) and raised (67%) and appeared first on the arms (48%), legs (35%) or trunk (17%). Symptoms were mild and there were no acute hospitalizations, complications or sequelae reported. The working differential diagnosis at the time of the initial evaluation included viral exanthem (Coxsackie, Echovirus, Adenovirus or Parvovirus), adverse immunization reaction, medication reaction, chemical or industrial exposure to include heavy metals, arthropod-borne rickettsial diseases such as Murine typhus, arboviruses, Streptococcal infection and others.

Initial clinical laboratory data are largely unremarkable. Viral throat and rectal cultures and paired sera for viral and rickettsial serology were collected from symptomatic persons at the time of investigation. Samples were also collected from members of the hotel dining staff and a number of healthy volunteers. Cultures and serology from patients surveyed to date are negative for common respiratory viruses, enteroviruses, bacteria and Rickettsia.

Environmental Data: Drinking water and pool samples were taken. Work areas were inspected for rodent or arthropod infestation and wipe samples were taken for chemical analysis (heavy metals, organics and pesticides). Material Safety Data Sheets were reviewed for commonly used chemicals (cleaning material and diesel fuels). Finally, the hotel and combat equipment site dining facilities were inspected for food service sanitation. All examinations were negative.

Outbreak #2

This outbreak was located at Camp Elsenborn, Belgium, approximately 75 kilometers from the previous sites. Twenty-three cases (see figure 1) were identified from three of the five U.S. units participating in "Cooperative Adventure Express '96". The

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Figure 1. Elsenborn, Belgium Outbreak Investigation, March, 1996

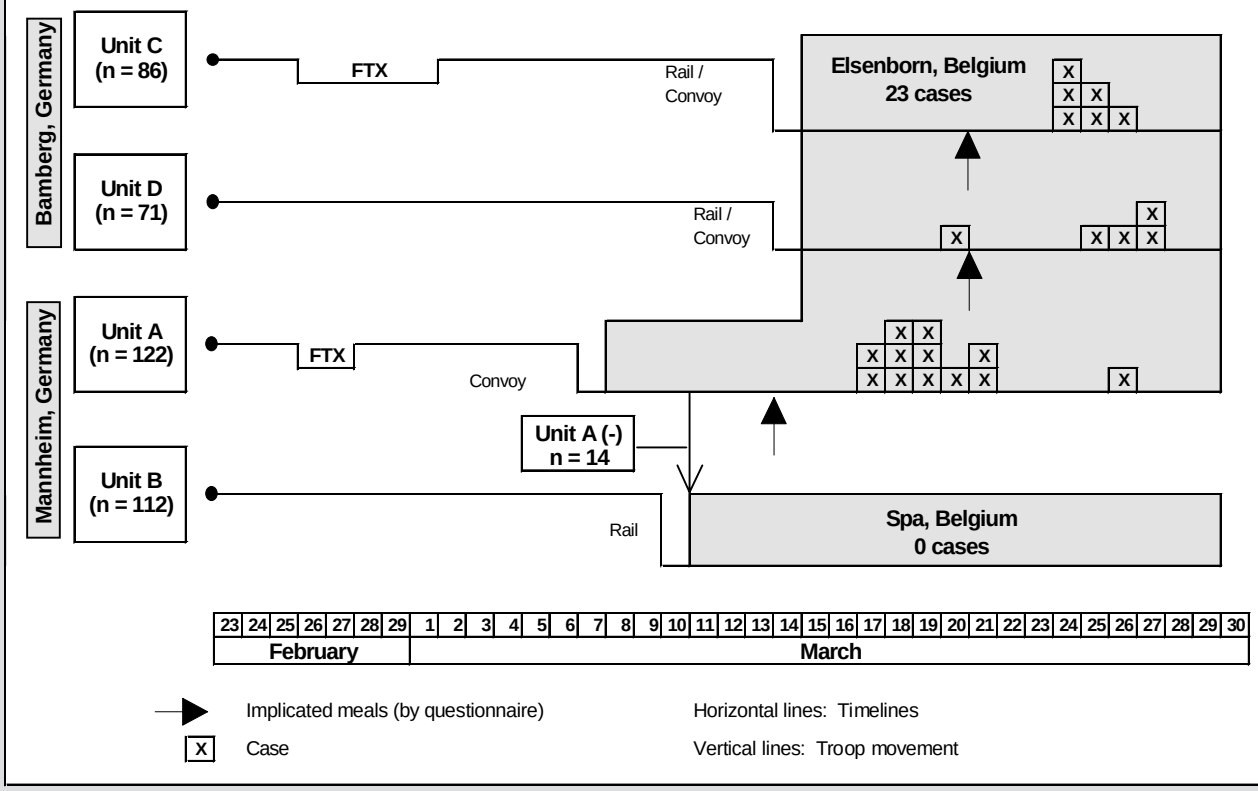


TABLE I. Cases of selected notifiable conditions, United States Army*
March, 1996

Reporting MTF/Post**	Total number of reports submitted March 1996	Environmental Injuries			Viral Hepatitis			Malaria	Varicella	
		Active Duty		CO intox.				Active Duty	Active Duty	Other Adult
		Heat	Cold		A	B	C			
		Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996
NORTH ATLANTIC HSSA										
Walter Reed AMC	29	-	-	-	1	-	-	-	3	-
Aberdeen Prov. Ground	4	-	3	-	-	-	-	-	-	-
FT Belvoir, VA	0	-	-	-	-	-	-	-	-	-
FT Bragg, NC	7	-	7	-	-	-	-	-	-	-
FT Drum, NY	19	-	21	-	-	1	-	1	3	-
FT Eustis, VA	14	-	-	-	-	-	-	-	-	-
FT Knox, KY	11	-	2	-	-	-	2	-	-	-
FT Lee, VA	7	-	-	-	-	-	-	-	-	-
FT Meade, MD	52	-	1	-	-	-	1	-	8	1
USMA, West Point, NY	0	-	-	-	-	-	-	-	-	-
CENTRAL HSSA										
Fitzsimons AMC	0	-	-	-	-	-	-	1	-	-
GREAT PLAINS HSSA										
Brooke AMC	0	-	-	-	-	-	-	-	-	-
FT Carson, CO	86	-	32	-	-	-	-	-	-	-
FT Hood, TX	43	-	1	-	-	-	-	-	2	-
FT Leavenworth, KS	5	-	-	-	-	-	-	-	-	-
FT Leonard Wood, MO	30	-	1	-	-	-	-	-	15	2
FT Polk, LA	6	-	-	-	-	-	-	-	-	-
FT Riley, KS	0	-	-	-	-	-	-	-	-	-
FT Sill, OK	22	-	-	-	3	-	1	-	-	-
Panama	46	1	-	-	3	1	2	-	-	1
SOUTHEAST HSSA										
Eisenhower AMC	33	-	-	-	-	-	-	-	-	-
FT Benning, GA	13	2	-	-	-	-	-	-	3	-
FT Campbell, KY	83	-	-	-	-	-	-	-	-	-
FT Jackson, SC	81	-	-	-	-	-	-	-	-	-
FT McClellan, AL	23	-	1	-	-	-	-	-	1	-
FT Rucker, AL	0	-	-	-	-	-	-	-	-	-
FT Stewart, GA	0	-	-	-	-	-	-	-	-	-
SOUTHWEST HSSA										
Wm Beaumont AMC	26	-	-	-	-	-	-	-	-	-
FT Huachuca, AZ	0	-	-	-	-	-	-	-	-	-
FT Irwin, CA	0	-	-	-	-	-	-	-	-	-
NORTHWEST HSSA										
Madigan AMC	0	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	0	-	10	-	-	-	-	-	-	-
PACIFIC HSSA										
Tripler AMC	40	-	1	-	1	-	-	-	-	-
OTHER LOCATIONS										
Europe	22	-	-	-	-	2	-	-	-	-
Korea	4	-	1	-	-	1	-	-	1	-
Total	**706**	**3**	**81**	**0**	**8**	**5**	**6**	**2**	**36**	**4**

* Based on date of onset.

** Reports are included from main and satellite clinics. Not all sites reporting.

Date of Report: 7-Apr-96

TABLE I. Cases of selected notifiable conditions, United States Army* (continued)
March, 1996

Reporting MTF/Post**	Salmonellosis			Shigella			Campylobacteriosis			Tuberculosis	
	Active Duty	Other		Active Duty	Other		Active Duty	Other		Active Duty	Other
		Adult	Child		Adult	Child		Adult	Child		
	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996
NORTH ATLANTIC HSSA											
Walter Reed AMC	1	-	-	-	-	-	1	3	-	-	-
Aberdeen Prov. Ground	-	-	-	-	-	-	-	-	-	-	-
FT Belvoir, VA	-	2	1	-	-	-	1	2	-	-	-
FT Bragg, NC	-	-	1	1	-	1	-	-	1	-	-
FT Drum, NY	-	-	-	-	-	-	-	-	-	-	-
FT Eustis, VA	-	-	1	-	-	-	-	-	1	-	-
FT Knox, KY	-	1	-	-	-	-	-	-	-	-	-
FT Lee, VA	-	-	-	-	-	-	-	-	-	-	-
FT Meade, MD	-	-	-	-	-	-	-	-	-	-	-
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-
CENTRAL HSSA											
Fitzsimons AMC	-	-	-	-	-	-	-	-	-	-	-
SOUTH CENTRAL HSSA											
Brooke AMC	-	-	-	-	-	-	-	-	-	-	-
FT Carson, CO	-	-	1	1	-	-	1	-	-	-	-
FT Hood, TX	-	-	-	-	-	-	-	-	-	-	-
FT Leavenworth, KS	-	-	-	-	-	-	-	1	-	-	-
FT Leonard Wood, MO	-	-	1	-	-	-	-	-	-	-	-
FT Polk, LA	-	-	-	-	-	-	-	-	-	-	-
FT Riley, KS	-	-	-	-	-	-	-	-	-	-	-
FT Sill, OK	-	-	-	-	-	-	-	-	-	-	-
Panama	-	2	9	1	-	2	-	-	10	-	-
SOUTHEAST HSSA											
Eisenhower AMC	-	-	-	-	-	-	-	-	-	-	-
FT Benning, GA	-	-	-	-	-	-	-	-	-	-	-
FT Campbell, KY	-	-	-	-	-	-	1	-	-	-	-
FT Jackson, SC	-	-	-	-	-	-	-	-	-	-	-
FT McClellan, AL	-	-	-	-	-	-	-	-	-	-	-
FT Rucker, AL	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	-	-	-	-	-	1	-	-	-	-	-
SOUTHWEST HSSA											
Wm Beaumont AMC	-	1	1	-	-	-	-	-	-	-	-
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	-	-	-	-	-	-	-	-	-	-	-
NORTHWEST HSSA											
Madigan AMC	-	-	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	-	-	-	-	-	-	-	-	-	-	-
PACIFIC HSSA											
Tripler AMC	-	-	-	-	-	-	-	-	-	-	-
OTHER LOCATIONS											
Europe	-	1	3	-	-	-	1	-	1	-	-
Korea	-	-	-	-	-	-	-	-	-	3	-
Total	**1**	**7**	**18**	**3**	**0**	**4**	**5**	**6**	**13**	**3**	**0**

* Based on date of onset.

** Reports are included from main and satellite clinics. Not all sites reporting. Date of Report: 7-Apr-96

TABLE II. Cases of notifiable sexually transmitted diseases, United States Army March, 1996

Reporting MTF/Post*	Chlamydia		Urethritis non-spec.		Gonorrhea		Herpes Simplex		Syphilis Prim/Sec		Syphilis Latent		Other STDs**	
	Cur. Month	Cum. 1996	Cur. Month	Cum. 1996	Cur. Month	Cum. 1996	Cur. Month	Cum. 1996	Cur. Month	Cum. 1996	Cur. Month	Cum. 1996	Cur. Month	Cum. 1996
NORTH ATLANTIC HSSA														
Walter Reed AMC	7	19	4	11	-	11	4	20	-	-	1	1	-	-
Aberdeen Prov. Ground	2	4	2	3	-	4	-	-	-	-	-	-	-	-
FT Belvoir, VA	1	10	-	-	-	3	-	-	-	-	-	-	-	-
FT Bragg, NC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Drum, NY	3	14	3	6	5	16	4	6	-	-	-	-	1	1
FT Eustis, VA	-	14	-	-	-	7	-	-	-	-	-	-	-	-
FT Knox, KY	10	31	-	-	3	17	5	15	-	-	-	-	-	-
FT Lee, VA	6	29	-	1	1	14	-	1	-	-	-	-	-	-
FT Meade, MD	1	3	6	7	1	3	2	4	-	-	-	-	-	-
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CENTRAL HSSA														
Fitzsimons AMC	-	1	-	-	-	-	-	-	-	-	-	-	-	-
SOUTH CENTRAL HSSA														
Brooke AMC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Carson, CO	14	58	14	64	6	20	3	13	-	-	1	1	-	-
FT Hood, TX	7	51	-	5	-	13	-	9	-	1	-	-	-	-
FT Leavenworth, KS	2	2	-	-	-	1	2	3	-	-	-	-	-	-
FT Leonard Wood, MO	7	22	2	13	3	9	-	1	-	-	-	-	-	-
FT Polk, LA	5	22	-	-	-	11	-	1	-	-	-	-	-	-
FT Riley, KS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Sill, OK	14	45	5	9	4	16	3	5	-	-	-	-	-	1
Panama	9	27	-	-	-	1	1	1	-	-	-	-	-	6
SOUTHEAST HSSA														
Eisenhower AMC	12	28	-	1	3	10	10	25	-	1	-	-	-	-
FT Benning, GA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Campbell, KY	10	94	-	-	7	31	1	9	-	1	-	-	-	-
FT Jackson, SC	49	138	-	-	3	8	1	10	-	-	-	-	-	-
FT McClellan, AL	1	5	-	-	-	4	-	-	-	1	-	-	-	-
FT Rucker, AL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SOUTHWEST HSSA														
Wm Beaumont AMC	6	40	-	-	-	6	-	12	-	-	-	-	1	1
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	-	5	-	-	-	2	-	-	-	-	-	-	-	-
NORTHWEST HSSA														
Madigan AMC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACIFIC HSSA														
Tripler AMC	15	47	-	-	4	14	6	26	-	-	1	2	-	-
OTHER LOCATIONS														
Europe	4	16	-	-	1	2	1	2	-	-	-	-	2	2
Korea	-	3	-	-	-	2	-	2	-	-	-	-	-	1
Total	**185**	**728**	**36**	**120**	**41**	**225**	**43**	**165**	**0**	**4**	**3**	**4**	**4**	**12**

* Reports are included from main and satellite clinics. Not all sites reporting. Date of Report: 7-Apr-96

** Other STDs: (a) Chancroid (b) Granuloma Inguinale (c) Lymphogranuloma Venereum (d) Syphilis unspec. (e) Syph, tertiary (f) Syph, conge

Continued from page 3

three units suffering cases were stationed at Camp Elsenborn, while the two unaffected units were operating at nearby locations. Attack rates at Camp Elsenborn ranged from 8-10%.

The clinical presentation and course are strikingly similar to that of the first outbreak with the exception that most patients did not complain of upper respiratory symptoms. All affected units ate at the local Belgian military mess and there were statistically valid associations between cases of rash and individual food items. There were, however, no known cases among other participating NATO forces using the dining facility (Belgian and German). Analysis of the water and sewage treatment systems revealed significant deficiencies, but chemical and bacterial analyses were negative.

On 8 March, unit A (n=122) traveled from Mannheim, Germany, to Elsenborn, Belgium (see figure 1 on page 3). On 11 March, 14 soldiers from unit A (unit A (-)) traveled to a nearby camp (located at Spa, approximately 30 km from Elsenborn) where they conducted the remainder of the exercise. Also on 11 March, unit B (n=112) traveled from Mannheim, Germany, to Spa. On 15 March, units C (n=86) and D (n=71) traveled from Bamberg, Germany, to Elsenborn. By the end of March, 23 cases of rash illness occurred among soldiers in units A, C, and D (at Elsenborn). No cases occurred among soldiers in units A- or B at Spa.

Cases occurred in two discrete waves overall — but were temporally clustered within affected units. The first wave occurred in unit A and the second in units C and D contemporaneously. In each of the affected units, cases clustered 9-13 days after their arrivals at Elsenborn. There was no evidence of ongoing transmission or cycles of transmission within affected units. The pattern was consistent with discrete ("point source") exposure to an infectious agent not efficiently transmissable from person to person in this setting.

The dining facility at Elsenborn was managed by Belgian military personnel while that at Spa was managed by the US. Of 24 food items surveyed among soldiers at Elsenborn, three were significantly associated with rash occurrence. According to menus provided by the dining facility, two of the three food items implicated by questionnaire were served on consecutive Thursdays (14 and 21 March). These dates correlate precisely with the staggering of the outbreaks in the affected units: unit A (but not A-, C, or D) was present the first time the implicated food items were served and the first wave began in unit A three days later; units C and D were present the second time the implicated meals were served and the second wave began three days later in those units. Of note, no cases occurred among the 14 soldiers in unit A- who were exposed to food (and water) at Elsenborn — but prior to the date the implicated food items were first served.

The camp at Elsenborn had its own water treatment plant. In contrast, the camp at Spa received water from the local municipality. Most soldiers drank bottled water or water transported from their home stations in Germany. However, there were no cases among 27 soldiers at Elsenborn who reported the tap as their primary drinking water source. Of multiple water samples from Elsenborn, none revealed significant bacteriologic or chemical abnormalities.

In summary, during the past three months there have been two outbreaks of rash among U.S. Forces operating in Belgium. Investigations have revealed no evidence of environmental, occupational or arthropod exposure. Immunization or medication reaction was also determined unlikely. In both situations meals were prepared in local dining facilities. The latency or "incubation" period and the association with the dining facilities support an infectious etiology, though this is by no means conclusive. The working hypothesis favors an enteric virus, possibly endemic in the local population, transmitted to U.S. soldiers through food service practices. Final conclusions must await the results of pending viral, rickettsial and other laboratory testing.

Submitted by MAJ JE Cook, MC, Epidemiology Consultant, CHPPM-EUR, and COL JF Brundage, MC, Director, Epidemiology and Disease Surveillance, USACHPPM

Epidemiologic report

The Association of Injury with Physical Fitness Among Men and Women in Gender Integrated Basic Combat Training Units

In September 1995, a request was sent to the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) from Ft. Leonard Wood, Missouri, to conduct an investigation of the impact of integrated training on the incidence of injury among female trainees. The request resulted in the formation of a survey team consisting of members from the USACHPPM, U.S. Army Research Institute of Environmental Medicine (USARIEM), and the Ft. Leonard Wood Army Community Hospital. The relative risks of injury were discussed in a previous issue (MSMR Vol. 02 No.02). This fitness survey was designed to assess the physical fitness levels of the basic trainees in this population as well as the injury incidence.

Medical records were reviewed for injuries and paired with the trainees' initial physical fitness test (IPFT) scores for 2 companies, C and D (270 trainees; 37% female). Eighty-eight percent of the trainees had both a medical record and an IPFT score. Women accounted for 40 percent (n=95) of the IPFT survey. Table 1 compares the physical fitness scores from Ft. Leonard Wood to historical rates collected at Ft. Jackson in 1984 and 1988. The data indicate that the Ft. Leonard Wood trainees entered basic training with lower levels of fitness than had been seen in past studies. Physical fitness levels in women were lower than for men.

When the incidence of injury for men and women was assessed, it was found that the incidence of injury for men in the companies analyzed increased as run time increased (Figure 1). The less fit, slower runners were at greater risk of injury [(RR, slow vs. fast =1.8, p=0.02, 95% confidence interval (CI): 1.1, 2.9)]. This association was not found for women. However, lower numbers of pushups were associated with a higher incidence of injury among women (RR, low vs. high=1.5, p= 0.05, CI: 1.0, 2.1). Situps were not significantly associated with higher incidence of injury for men or women. Pushups for men were also not significantly associated with higher injury incidence. Even in the non-statistically significant associations, injury rate trends followed a pattern suggesting higher rates for lower fitness groups.

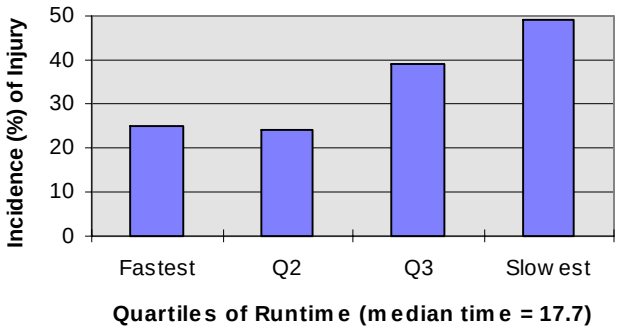
The relationship between the incidence of

Table 1. Mean Descriptive Characteristics and Physical Fitness Test Results of Women and Men Army Trainees at Ft. Leonard Wood and Ft. Jackson

Study	2 Mile Runtime			Situps			Pushups	
	n	Mean (minutes)	SD	n	Mean (number)	SD	n	Mean (number)
Ft. Leonard Wood 1995								
Women	95	**22.5**	3	94	**33**	13	72	**11**
Men	156	**17.7**	2	155	**41**	13	155	**31**
Ft. Jackson 1988								
Women	355	**20.3**	2	902	**34**	14	792	**10**
Men	593	**16.4**	2	1357	**44**	12	1357	**31**
Ft. Jackson 1984								
Women	140	**20.2**	*	163	**40**	1	138	**12**
Men	79	**15.6**	*	98	**55**	14	97	**31**

*Runtime predicted from one mile runtime[2]

Figure 2. Runtime and Incidence of Injuries among Male Basic Trainnees



stress fractures and run time is striking for both men and women (Figures 2 and 3). The slower half of the men in the two companies had a relative risk (RR) of 6.7 for a stress fracture as compared to the faster half of the men (p=0.06, CI: 0.09, 53.5). The slower half of women had a RR=2.5 for a stress fracture (p=0.07, CI: 0.9, 6.4). Women who did fewer numbers of pushups and situps were also found to be at an increased risk for stress fractures [(RR=2.4, p=0.07, CI: .9, 6.2 and RR=3.0, p=0.05, CI: 1.0, 8.6, respectively)]. For men, pushups and situps were not significantly associated with the incidence of stress fractures. Again, even where no statistically significant associations were found, the incidence of stress fractures was higher in the less fit quartiles than in the more fit quartiles.

The relative risk of injury among female trainees was 1.6 times higher than for men (57.4% vs. 35.3%, CI: 1.3,2.4, p=0.001). However, when fitness level was controlled for by stratifying the trainees according to run time, the difference in the incidence of injury in men verses women was not significant (Mantel-Haenzel RR=1.1, p=0.6, CI: 0.8, 1.6). This suggests that women and men with the same aerobic fitness level have similar risks of injury (i.e., men and women who run 2 miles in the same time can be expected to have similar risks).

In conclusion, trainees who are less fit upon entry into basic training can be expected to have higher rates of injuries and, more specifically, higher rates of stress fractures. When the fitness level was determined according to run time, the risk of injury was higher among slower quartiles of men, and the risk of stress fractures was higher for slower halves of both genders. Though crude injury rates were higher among female basic trainees at Ft. Leonard Wood, this data suggest that the higher rates are associated with lower levels of fitness upon entering the Army rather than with gender, per se. The tests of muscular endurance, pushups and situps, are stronger predictors of injury for women than for men. Given that lower levels of aerobic fitness are associated with greater risk of injury, lower fitness levels among the trainees at Ft. Leonard Wood, as compared to past basic training units, may explain the higher injury rates observed in this study population as compared to past rates. (See Table 2, MSMR Vol. 02 No. 02)

Submitted by ML Canham, MA McFerren, and COL BH Jones, MC, Injury and Occupational Disease Programs, USA Center for Health Promotion and Preventive Medicine, APG, MD, 21010

Editorial Comment: It is clear that there is a strong association between lower entry level physical fitness and a higher incidence of musculoskeletal injuries among both men and women during integrated BCT. The current data are supported by previous surveys of both genders attending non-integrated BCT at Ft Jackson in 1984 and 1988[1]. Interestingly, higher

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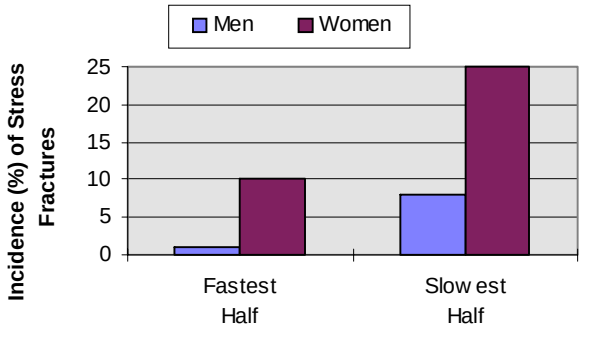
Figure 3. Runtime and Incidence of Stress Fractures among Basic Trainees



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injury rates among women compared to men may not be a function of gender alone, but the fact that women enter BCT at lower levels of fitness than men.

Careful review of historical fitness levels (Table 1, page 8) combined with historical injury rates reveals a trend toward lower entry level fitness and higher injury rates in BCT from 1984 to 1995. In Table 1, IPFT two mile run times for men and women in 1995 at Ft Leonard Wood (17.7 and 22.5 minutes, respectively) are approximately two minutes slower compared to IPFT times for men (14% slower) and women (11% slower) in 1984 at Ft Jackson (15.6 and 20.2 minutes, respectively). On the other hand, injury rates following seven weeks of BCT have increased ten percent for women from 1984 to 1995 (50% to 57%, respectively) and twenty percent for men in the same period (28% to 36%) (Table 2, reference 2). Thus, declines in fitness of the same absolute magnitude (approximately 2 minutes slower IPFT run times) from Ft Jackson in 1984 to Ft Leonard Wood in 1995 have corresponded to increases in injury rates of the similar magnitude for both men and women. The consistency of this relationship across genders again suggests that declines in fitness may be a more important risk factor for injury than gender. We are obligated to develop plans that lower these rates. A three-pronged approach may prove beneficial in reducing current BCT injury incidence.

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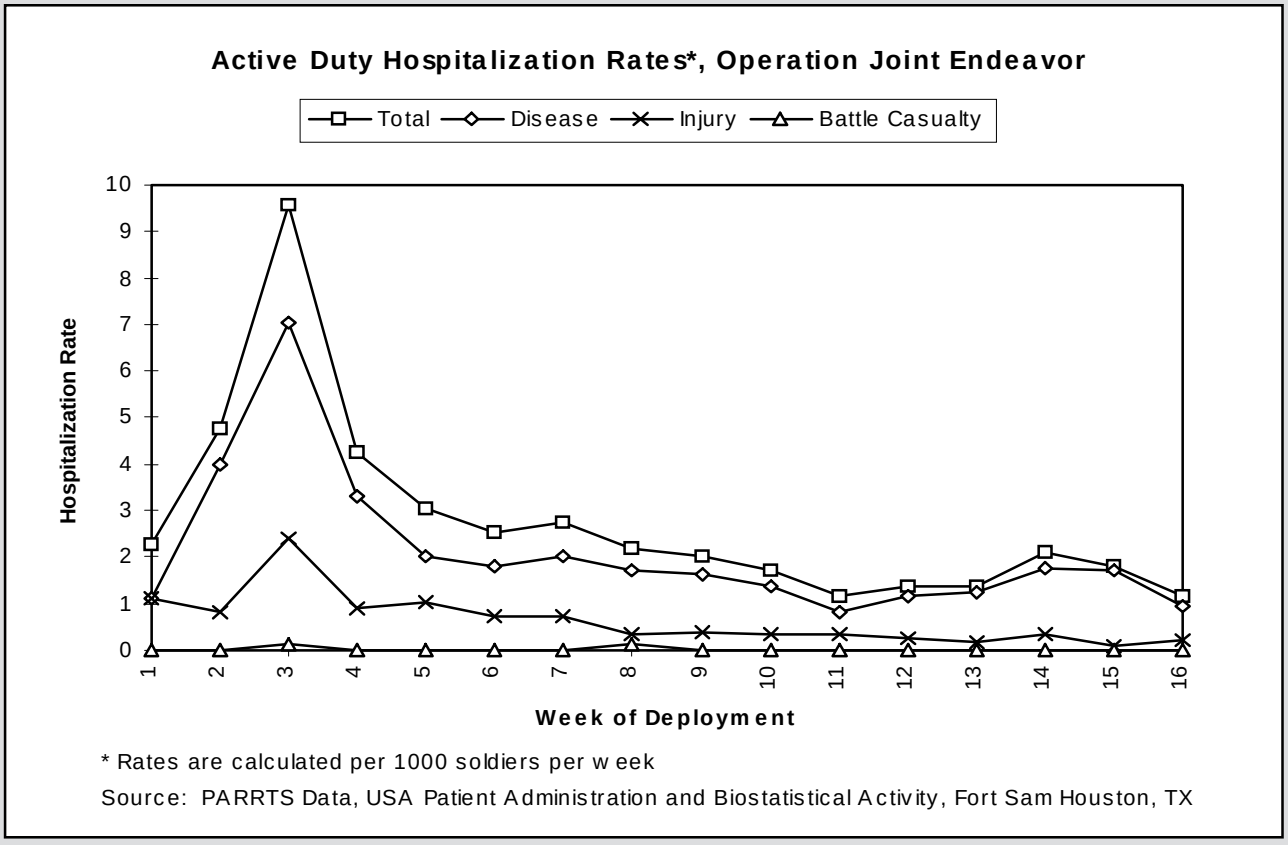
Surveillance Trends, Bosnia



* Rates are calculated per 1000 soldiers per w eek

Source: PARRTS Data, USA Patient Administration and Biostatistical Activity, Fort Sam Houston, TX

Bosnia Update

TABLE III. Active Duty Hospitalization Rates*, Operation Joint Endeavor, 11Dec95 - 06Apr96

ICD-9 Category	Males							Females							All
	< 20	20-24	25-29	30-34	35-39	>= 40	Total M	< 20	20-24	25-29	30-34	35-39	>= 40	Total F	
Infectious and Parasitic Diseases	26.9	13.8	11.1	9.4	3.5	2.9	**11.1**	0.0	17.1	18.5	30.4	0.0	0.0	**16.1**	**11.6**
Neoplasms	4.5	0.0	0.0	1.0	0.0	0.0	**0.4**	0.0	0.0	0.0	0.0	16.2	0.0	**1.6**	**0.5**
Endocrine, Nutritional, and Metabolic Disease and Immunity Disorders	0.0	0.0	1.3	0.0	0.0	0.0	**0.4**	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	**0.3**
Diseases of the Blood and Blood-Forming Organs	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	**0.0**
Mental Disorders	9.0	6.9	3.9	3.1	1.7	0.0	**4.6**	0.0	4.3	37.1	0.0	0.0	0.0	**11.3**	**5.3**
Diseases of the Nervous System and Sense Organs	13.5	2.5	3.9	2.1	1.7	5.8	**3.4**	0.0	8.6	30.9	0.0	0.0	0.0	**11.3**	**4.1**
Diseases of the Circulatory System	4.5	2.5	5.2	8.4	7.0	5.8	**4.9**	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	**4.5**
Diseases of the Respiratory System	0.0	9.9	5.9	7.3	7.0	20.2	**8.3**	0.0	21.4	12.4	0.0	32.3	26.5	**16.1**	**9.1**
Diseases of the Digestive System	4.5	14.8	8.5	9.4	5.2	11.6	**10.6**	106.5	21.4	12.4	0.0	0.0	26.5	**17.7**	**11.3**
Diseases of the Genitourinary System	0.0	3.9	9.8	5.2	3.5	5.8	**5.7**	0.0	38.5	30.9	10.1	16.2	53.0	**28.9**	**8.0**
Complications of Pregnancy, Childbirth, and the Puerperium**	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	0.0	4.3	6.2	0.0	0.0	0.0	**3.2**	**0.3**
Diseases of the Skin and Subcutaneous Tissue	9.0	3.0	2.6	2.1	1.7	0.0	**2.6**	0.0	4.3	0.0	0.0	0.0	0.0	**1.6**	**2.5**
Diseases of Musculoskeletal System and Connective Tissue	9.0	7.9	14.3	15.7	5.2	14.5	**11.1**	0.0	12.8	6.2	0.0	32.3	26.5	**11.3**	**11.1**
Congenital Abnormalities	0.0	0.5	0.0	3.1	0.0	0.0	**0.7**	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	**0.6**
Symptoms, Signs, and ill-Defined Conditions	0.0	12.3	8.5	8.4	12.2	8.7	**9.9**	106.5	55.6	18.5	20.2	32.3	0.0	**37.0**	**12.6**
Injury and Poisoning	18.0	23.2	23.4	18.8	15.7	5.8	**20.5**	0.0	42.8	30.9	20.2	16.2	0.0	**28.9**	**21.3**
All Hospitalizations	**98.7**	**101.0**	**98.3**	**94.2**	**64.6**	**81.0**	**94.1**	**213.0**	**231.0**	**204.0**	**81.0**	**145.4**	**132.6**	**184.9**	**103.1**

* Rates are calculated per 1000 soldiers per year based on cumulative person time.

** Includes normal delivery

Source: PARRTS Data, USA Patient Administration Systems and Biostatistical Activity, Fort Sam Houston, TX

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1. Careful review of current training techniques (amount and progression of running) to determine: (a) if these methods are leading to an "over-trained", and thus, "over-injured" state; and (b) if progression is too rapid for proper musculoskeletal adaptation to occur in our basic trainees.

2. Increase fitness prior to BCT, especially for those at highest risk for injury (those in the poorest physical condition), with a pre-BCT fitness "build-up" period similar to what Fitness Training Companies, currently in place at Ft Benning and Ft Jackson, have attempted.

3. Further research to determine the minimum amount of training (i.e., frequency, duration, or total running mileage), required of trainees with lower initial fitness levels, resulting in the most optimal fitness gains with the lowest injury incidence throughout BCT.

The costs, losses in training time, reduction in readiness, and discomfort for our soldiers caused by training-related injury requires our immediate attention.

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2. Jones BH, Cowan DN, Tomlinson JP, et al. Epidemiology of Injuries Associated with Physical Training Among Young Men in the Army. *Medicine and Science in Sports and Exercise*. 25:197-203, 1993.
3. Jones BH, Cowan DN, Knapik JJ. Exercise, Training, and Injuries. *Sports Medicine*. 18(3):202-214, 1994.

Editorial comment submitted by COL MA Smutok, SP, Chief, Occupational Medicine Division, US Army Research Institute of Environmental Medicine, Natick, MA

Report from the field

Shigellosis Case Reports, WRAMC

During the final months of 1995, four laboratory-confirmed cases and one probable case of shigellosis were treated at Walter Reed Army Medical Center(WRAMC). These cases involved two Latino families, Family A and Family B, who live across the street from each other.

Case A-1

In August 1995, a 35-year-old female family member was admitted to WRAMC via the emergency department. She presented with abdominal pain, fever, nausea, vomiting, and diarrhea. She was evaluated by the Gynecology Service, admitted with a diagnosis of pelvic inflammatory disease (PID), and treated with doxycycline and cefotetan. Cultures for gonorrhea and chlamydia were negative; stool cultures were not performed. The patient's symptoms improved with treatment, and she was discharged on oral doxycycline.

Case B-1

A few weeks later in September 1995, an eight-year-old boy, who lived across the street from Case A-1, was seen in the Emergency Department (ED) at WRAMC with fever, chills, headache, and diarrhea. The child was treated with IV hydration and acetaminophen and discharged. Stool cultures obtained in the ED were positive for shigella, and the family was

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contacted to arrange for follow-up in the Pediatric Clinic. Additionally, the family was referred to Community Health Nursing (CHN) and asked to provide stool samples for culture.

Case B-2

Family B did provide stool samples to the Montgomery County Health Department and the father's sample was positive for shigella. He was seen in the WRAMC General Medicine Clinic on September 27 and treated with ciprofloxacin. Follow-up stool culture was negative. The 2 other family members' stool cultures were negative.

Case A-2

On November 6, the son of Case A-1, a six-year-old boy, was admitted to the WRAMC Pediatric Service with fever, abdominal pain, and bloody diarrhea. His stool culture was positive for shigella. His symptoms resolved with IV hydration and antibiotic therapy. During his hospitalization, an interview revealed that he played with Case B-1; that his mother, Case A-1, would often baby-sit for the children of Family B; and that the children of both families attended the same pre-school and after-school daycare. At that time, family members were taught about hygiene issues, and the Montgomery County Department of Health and Human Services was contacted again.

Case A-3

On December 4, the four-year-old brother of Case A-2 was seen in the Pediatric Clinic and evaluated for diarrhea. Stool cultures were positive for shigella. The child's symptoms resolved with antibiotic therapy.

In light of these cases of shigellosis, Community Health Nursing made home visits to both families and conducted teaching about handwashing and food preparation. The principal of the elementary school which the children attended was contacted and made aware of the situation. The principal revealed that the mother of Family B worked in the Day Care Program at the school and that the school had sent a letter home to all parents explaining the symptoms of shigellosis and stressing the importance of handwashing.

Stool cultures obtained near the end of December 1995 were negative for both families.

Submitted by WC. Hewitson, CPT(P), MC, Division of Preventive Medicine, WRAIR and B Friedman, Communicable Disease Epidemiologist, Preventive Medicine, WRAMC

Editorial Comment: Shigellosis is an acute diarrheal disease affecting the small and large bowel. After a short incubation period of 1-3 days, the patient experiences fever, abdominal pain, and watery diarrhea — symptoms that indicate small bowel infection. As the infection moves to the ileum and colon, the frequency of stools increases but the stool volume decreases. These latter stools often contain blood and mucous (dysentery) and are accompanied by straining and tenesmus.

Shigellosis is produced by the shigellae bacteria (slender gram-negative rods) and is the most communicable of all the bacterial diarrheas. Characteristics that potentiate its communicability are its low infective dose and the asymptomatic infectious state and convalescent carrier state that may exist in the human host for weeks. This infectivity probably explains why this organism can be spread person-to-person. Food, fingers, feces, and flies is the mnemonic often used to describe shigella's mode of transmission.

Once an index case is identified, secondary attack rates can range from 61 percent for infants, 40 percent for young children (ages 1-4), and 20 percent for all ages.

Shigellosis is a disease of military importance. Because of the short incubation period and the temporarily disabling clinical course, it can have a major negative impact on an operation, even early in a deployment. The Department of Enteric Infections, Division of Communicable Diseases and Immunology, Walter Reed Army Institute of Research,

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is actively pursuing shigella vaccine research. This year two quite different vaccines will enter Phase 1 testing for safety and immunogenicity: an oral, live attenuated Shigella flexneri vaccine; and a killed, subunit intranasal Shigella sonnei vaccine. The ultimate vaccine will probably be multivalent since vaccine immunity appears to be serogroup- and serotype-specific. An efficacious vaccine and compliance with preventive medicine guidelines will greatly reduce the threat of shigellosis to deployed forces.

Editorial comments submitted by COL JP Tomlinson, MC, Deputy for Preventive Medicine, WRAMC and WC Hewitson, CPT(P), MC, Division of Preventive Medicine, WRAIR

References

1. DuPont HL, Levine MM, Hornick RB, et al. Inoculum size in shigellosis and implications for expected mode of transmission. J infect Dis. 1989;159:1126.
2. DuPont HL. Shigella Species (Bacillary Dysentery) Principles and Practice of Infectious Disease. 1995;2035.

Correction:

Table S1 "Notifiable conditions reported through Medical Surveillance System, Jan - Dec, 1996" (MSMR Vol. 02 No. 01:page 14) was printed with incorrect data for Oct, Nov, Dec and Total. The corrected data appears in the Reportable Disease Summary Supplement (Table S5, page 20) in this issue.

ARD Surveillance Update

Legend

ARD Rate = (ARD cases / Trainees) * 100

SASI* = ARD Rate * Strep Rate**

FT Benning

Ft Jackson

Ft Knox

Ft Leonard Wood

Ft McClellan

Ft Sill

Table IV. ARD surveillance rates, submitted by Army TRADOC posts

* Strep/ARD Surveillance Index (SASI) **Strep Rate = (GABHS(+) / Cultures) * 100

Note: SASI has proven to be a reliable predictor of serious strep-related morbidity, especially acute rheumatic fever.

Supplement #1 (Hospitalization Summary, 1995)

TABLE S1. Active Duty Hospitalizations, United States Army, 1995

ICD-9 Category	Males							Females							All
	< 20	20-24	25-29	30-34	35-39	>= 40	Total M	< 20	20-24	25-29	30-34	35-39	>= 40	Total F	
Infectious and Parasitic Diseases	223	796	385	206	155	133	**1898**	175	284	110	51	33	21	**674**	**2572**
Neoplasms	13	203	169	186	211	354	**1136**	12	92	117	103	173	169	**666**	**1802**
Endocrine, Nutritional, and Metabolic Disease and Immunity Disorders	23	63	68	54	54	67	**329**	12	34	39	29	30	19	**163**	**492**
Diseases of the Blood and Blood-Forming Organs	8	43	27	18	20	19	**135**	11	19	11	11	2	17	**71**	**206**
Mental Disorders	259	1819	1096	609	536	377	**4696**	105	406	211	141	122	81	**1066**	**5762**
Diseases of the Nervous System and Sense Organs	88	393	310	246	267	368	**1672**	33	119	90	88	68	89	**487**	**2159**
Diseases of the Circulatory System	35	248	237	229	258	730	**1737**	10	48	35	34	39	50	**216**	**1953**
Diseases of the Respiratory System	554	1487	742	437	351	381	**3952**	282	455	197	127	74	54	**1189**	**5141**
Diseases of the Digestive System	226	2202	1365	917	965	1238	**6913**	121	586	312	211	143	157	**1530**	**8443**
Diseases of the Genitourinary System	36	405	391	290	247	258	**1627**	96	619	449	337	269	239	**2009**	**3636**
Complications of Pregnancy, Childbirth, and the Puerperium*	-	-	-	-	-	-	-	129	3357	2055	921	315	75	**6852**	**6852**
Diseases of the Skin and Subcutaneous Tissue	116	473	268	150	109	110	**1226**	23	80	44	37	26	34	**244**	**1470**
Diseases of Musculoskeletal System and Connective Tissue	488	3135	2683	2053	1717	1748	**11824**	248	693	487	359	312	260	**2359**	**14183**
Congenital Abnormalities	37	144	84	69	45	57	**436**	10	38	19	22	12	7	**108**	**544**
Symptoms, Signs, and ill-Defined Conditions	76	450	360	299	392	559	**2136**	66	210	113	90	61	82	**622**	**2758**
Injury and Poisoning	229	2362	1501	848	547	425	**5912**	61	308	155	86	60	57	**727**	**6639**
Disease, not fully coded	128	921	701	495	426	447	**3118**	106	584	350	223	155	104	**1522**	**4640**
Injury, not fully coded	8	88	41	19	22	3	**181**	2	15	5	5	4		**31**	**212**
All Hospitalizations	**2547**	**15232**	**10428**	**7125**	**6322**	**7274**	**48928**	**1502**	**7947**	**4799**	**2875**	**1898**	**1515**	**20536**	**69464**

* Includes normal delivery

Source: Individual Patient Data System, USA Patient Administration Systems and Biostatistical Activity, Fort Sam Houston, TX

TABLE S2. Active Duty Hospitalization Rates, United States Army, 1995*

ICD-9 Category	Males							Females							All
	< 20	20-24	25-29	30-34	35-39	>= 40	Total M	< 20	20-24	25-29	30-34	35-39	>= 40	Total F	
Infectious and Parasitic Diseases	8.8	5.6	3.8	2.7	2.6	3.2	**4.3**	37.5	12.3	6.9	4.4	4.2	4.2	**9.9**	**5.0**
Neoplasms	0.5	1.4	1.7	2.4	3.5	8.6	**2.5**	2.6	4.0	7.3	8.9	21.8	34.0	**9.8**	**3.5**
Endocrine, Nutritional, and Metabolic Disease and Immunity Disorders	0.9	0.4	0.7	0.7	0.9	1.6	**0.7**	2.6	1.5	2.4	2.5	3.8	3.8	**2.4**	**1.0**
Diseases of the Blood and Blood-Forming Organs	0.3	0.3	0.3	0.2	0.3	0.5	**0.3**	2.4	0.8	0.7	1.0	0.3	3.4	**1.0**	**0.4**
Mental Disorders	10.2	12.8	10.9	7.9	9.0	9.2	**10.5**	22.5	17.6	13.2	12.2	15.4	16.3	**15.6**	**11.2**
Diseases of the Nervous System and Sense Organs	3.5	2.8	3.1	3.2	4.5	9.0	**3.8**	7.1	5.1	5.6	7.6	8.6	17.9	**7.1**	**4.2**
Diseases of the Circulatory System	1.4	1.7	2.3	3.0	4.3	17.8	**3.9**	2.1	2.1	2.2	2.9	4.9	10.1	**3.2**	**3.8**
Diseases of the Respiratory System	21.7	10.5	7.4	5.7	5.9	9.3	**8.9**	60.4	19.7	12.3	11.0	9.3	10.9	**17.4**	**10.0**
Diseases of the Digestive System	8.9	15.5	13.5	11.9	16.2	30.2	**15.5**	25.9	25.4	19.5	18.2	18.0	31.6	**22.4**	**16.4**
Diseases of the Genitourinary System	1.4	2.9	3.9	3.8	4.1	6.3	**3.7**	20.6	26.8	28.1	29.1	33.9	48.1	**29.5**	**7.1**
Complications of Pregnancy, Childbirth, and the Puerperium**	-	-	-	-	-	-	-	27.6	145.3	128.6	79.6	39.7	15.1	**100.5**	**13.3**
Diseases of the Skin and Subcutaneous Tissue	4.6	3.3	2.7	2.0	1.8	2.7	**2.8**	4.9	3.5	2.8	3.2	3.3	6.8	**3.6**	**2.9**
Diseases of Musculoskeletal System and Connective Tissue	19.2	22.1	26.6	26.7	28.8	42.6	**26.5**	53.1	30.0	30.5	31.0	39.3	52.4	**34.6**	**27.6**
Congenital Abnormalities	1.5	1.0	0.8	0.9	0.8	1.4	**1.0**	2.1	1.6	1.2	1.9	1.5	1.4	**1.6**	**1.1**
Symptoms, Signs, and ill-Defined Conditions	3.0	3.2	3.6	3.9	6.6	13.6	**4.8**	14.1	9.1	7.1	7.8	7.7	16.5	**9.1**	**5.4**
Injury and Poisoning	9.0	16.7	14.9	11.0	9.2	10.4	**13.3**	13.1	13.3	9.7	7.4	7.6	11.5	**10.7**	**12.9**
Disease, not fully coded	5.0	6.5	6.9	6.4	7.1	10.9	**7.0**	22.7	25.3	21.9	19.3	19.5	20.9	**22.3**	**9.0**
Injury, not fully coded	0.3	0.6	0.4	0.2	0.4	0.1	**0.4**	0.4	0.6	0.3	0.4	0.5	0.0	**0.5**	**0.4**
All Hospitalizations	**100.0**	**107.5**	**103.4**	**92.6**	**106.0**	**177.3**	**109.8**	**321.8**	**343.9**	**300.4**	**248.6**	**239.3**	**305.1**	**301.1**	**135.2**

* Rates are calculated per 1000 soldiers per year based on cumulative person time. ** Includes normal delivery

Source: Individual Patient Data System, USA Patient Administration Systems and Biostatistical Activity, Fort Sam Houston, TX

TABLE S3. Total Active Duty Hospital Sickdays, United States Army, 1995*

ICD-9 Category	Males							Females							All
	< 20	20-24	25-29	30-34	35-39	>= 40	Total M	< 20	20-24	25-29	30-34	35-39	>= 40	Total F	
Infectious and Parasitic Diseases	759	3614	2248	1421	648	1896	**10586**	365	912	422	255	412	353	**2719**	**13305**
Neoplasms	108	4859	3563	2099	3705	4035	**18369**	87	505	553	1042	3268	1739	**7194**	**25563**
Endocrine, Nutritional, and Metabolic Disease and Immunity Disorders	47	537	528	939	582	1754	**4387**	31	546	174	134	105	306	**1296**	**5683**
Diseases of the Blood and Blood-Forming Organs	43	254	533	111	117	69	**1127**	51	35	26	677	13	137	**939**	**2066**
Mental Disorders	2823	28232	27942	14109	14837	11531	**99474**	698	5551	4067	5723	4739	3039	**23817**	**123291**
Diseases of the Nervous System and Sense Organs	326	3693	4127	3662	3212	6863	**21883**	51	2013	1509	321	1024	1291	**6209**	**28092**
Diseases of the Circulatory System	99	2004	4613	2209	1920	8363	**19208**	18	165	377	114	107	723	**1504**	**20712**
Diseases of the Respiratory System	1232	5025	4876	3216	2389	2979	**19717**	526	1009	967	347	483	194	**3526**	**23243**
Diseases of the Digestive System	826	6783	6144	3922	3616	5273	**26564**	253	1744	953	775	756	609	**5090**	**31654**
Diseases of the Genitourinary System	104	2154	1906	1637	941	579	**7321**	235	1966	1405	1123	1023	1191	**6943**	**14264**
Complications of Pregnancy, Childbirth, and the Puerperium**	-	-	-	-	-	-	**-**	522	23357	14649	7053	1990	550	**48121**	**48121**
Diseases of the Skin and Subcutaneous Tissue	354	2186	1119	563	1151	566	**5939**	104	394	421	89	129	139	**1276**	**7215**
Diseases of Musculoskeletal System and Connective Tissue	989	26087	25436	20373	14719	16182	**103786**	219	3671	4363	2489	2476	5841	**19059**	**122845**
Congenital Abnormalities	52	617	738	1770	144	317	**3638**	48	474	20	659	211	46	**1458**	**5096**
Symptoms, Signs, and ill-Defined Conditions	119	2779	2952	2680	1925	1817	**12272**	136	1143	700	238	343	309	**2869**	**15141**
Injury and Poisoning	1503	24046	17949	7017	6168	3859	**60542**	312	3442	567	349	566	595	**5831**	**66373**
Disease, not fully coded	1514	13418	10317	7168	4765	8401	**45583**	738	4773	3511	3077	1248	1497	**14844**	**60427**
Injury, not fully coded	76	945	831	1106	366	7	**3331**	21	534	31	402	6		**994**	**4325**
All Hospitalizations		**127233**		**74002**		**74491**		**4415**		**34715**		**18899**		**153689**	
	10974		**115822**		**61205**		**463727**		**52234**		**24867**		**18559**		**617416**

* Includes bed days, convalescent sickdays and medical hold days

** Includes normal delivery

Source: Individual Patient Data System, USA Patient Administration Systems and Biostatistical Activity, Fort Sam Houston, TX

TABLE S4. Non-Effective Rates, Active Duty Hospitalization, United States Army, 1995*

ICD-9 Category	Males							Females							All
	< 20	20-24	25-29	30-34	35-39	>= 40	Total M	< 20	20-24	25-29	30-34	35-39	>= 40	Total F	
Infectious and Parasitic Diseases	29.8	25.5	22.3	18.5	10.9	46.2	**23.8**	78.2	39.5	26.4	22.1	51.9	71.1	**39.9**	**25.9**
Neoplasms	4.2	34.3	35.3	27.3	62.1	98.4	**41.2**	18.6	21.9	34.6	90.1	412.1	350.2	**105.5**	**49.7**
Endocrine, Nutritional, and Metabolic Disease and Immunity Disorders	1.8	3.8	5.2	12.2	9.8	42.8	**9.8**	6.6	23.6	10.9	11.6	13.2	61.6	**19.0**	**11.1**
Diseases of the Blood and Blood-Forming Organs	1.7	1.8	5.3	1.4	2.0	1.7	**2.5**	10.9	1.5	1.6	58.5	1.6	27.6	**13.8**	**4.0**
Mental Disorders	110.8	199.2	277.0	183.4	248.9	281.1	**223.2**	149.6	240.2	254.6	494.9	597.5	612.0	**349.2**	**239.9**
Diseases of the Nervous System and Sense Organs	12.8	26.1	40.9	47.6	53.9	167.3	**49.1**	10.9	87.1	94.5	27.8	129.1	260.0	**91.0**	**54.7**
Diseases of the Circulatory System	3.9	14.1	45.7	28.7	32.2	203.9	**43.1**	3.9	7.1	23.6	9.9	13.5	145.6	**22.0**	**40.3**
Diseases of the Respiratory System	48.4	35.5	48.3	41.8	40.1	72.6	**44.2**	112.7	43.7	60.5	30.0	60.9	39.1	**51.7**	**45.2**
Diseases of the Digestive System	32.4	47.9	60.9	51.0	60.7	128.6	**59.6**	54.2	75.5	59.7	67.0	95.3	122.6	**74.6**	**61.6**
Diseases of the Genitourinary System	4.1	15.2	18.9	21.3	15.8	14.1	**16.4**	50.4	85.1	88.0	97.1	129.0	239.8	**101.8**	**27.8**
Complications of Pregnancy, Childbirth, and the Puerperium**	-	-	-	-	-	-	**-**	111.8	1010.7	917.1	609.9	250.9	110.8	**705.5**	**93.6**
Diseases of the Skin and Subcutaneous Tissue	13.9	15.4	11.1	7.3	19.3	13.8	**13.3**	22.3	17.0	26.4	7.7	16.3	28.0	**18.7**	**14.0**
Diseases of Musculoskeletal System and Connective Tissue	38.8	184.0	252.2	264.9	246.9	394.5	**232.9**	46.9	158.9	273.1	215.2	312.2	1176.2	**279.4**	**239.1**
Congenital Abnormalities	2.0	4.4	7.3	23.0	2.4	7.7	**8.2**	10.3	20.5	1.3	57.0	26.6	9.3	**21.4**	**9.9**
Symptoms, Signs, and ill-Defined Conditions	4.7	19.6	29.3	34.8	32.3	44.3	**27.5**	29.1	49.5	43.8	20.6	43.2	62.2	**42.1**	**29.5**
Injury and Poisoning	59.0	169.6	177.9	91.2	103.5	94.1	**135.9**	66.9	148.9	35.5	30.2	71.4	119.8	**85.5**	**129.2**
Disease, not fully coded	59.4	94.7	102.3	93.2	79.9	204.8	**102.3**	158.1	206.5	219.8	266.1	157.4	301.4	**217.6**	**117.6**
Injury, not fully coded	3.0	6.7	8.2	14.4	6.1	0.2	**7.5**	4.5	23.1	1.9	34.8	0.8	0.0	**14.6**	**8.4**
All Hospitalizations	**431**	**898**	**1148**	**962**	**1027**	**1816**	**1041**	**946**	**2260**	**2173**	**2150**	**2383**	**3737**	**2253**	**1202**

* Rates are calculated as hospital sickdays per 1000 soldier per year based on cumulative person time. ** Includes normal delivery

Source: Individual Patient Data System, USA Patient Administration Systems and Biostatistical Activity, Fort Sam Houston, TX

TABLE S5. Notifiable conditions reported through Medical Surveillance System, Jan-Dec 1995*

Diagnosis	Jan '95	Feb '95	Mar '95	Apr '95	May '95	Jun '95	Jul '95	Aug '95	Sep '95	Oct '95	Nov '95	Dec '95	Total
Amebiasis	-	-	-	-	-	-	-	1	2	-	-	-	**3**
Anthrax	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Arboviral fever,unsp	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Asbestosis	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Botulism (adult)	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Botulism (infant)	-	-	1	-	-	-	-	-	-	-	-	1	**2**
Brucellosis	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Campylobacteriosis	5	7	9	6	13	14	19	5	10	11	7	1	**107**
Carbon monoxide intx	2	3	1	-	-	-	-	-	12	-	3	1	**22**
Chancroid	-	-	-	-	-	-	1	-	1	1	-	-	**3**
Chemical agent exp	-	27	-	1	-	-	-	-	-	-	-	-	**28**
Chlamydia	306	273	274	295	308	291	365	315	254	269	224	162	**3336**
Cholera	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Coccidioidomycosis	1	-	-	-	1	-	1	-	-	-	-	-	**3**
CWI, unspecified	4	-	-	-	-	-	1	-	-	-	1	4	**10**
CWI, frostbite	15	21	9	-	-	-	-	-	-	1	15	19	**80**
CWI, hypothermia	-	8	1	-	-	-	-	-	-	-	-	1	**10**
CWI, immersion type	2	6	4	-	-	-	-	-	-	-	-	3	**15**
Dengue fever	-	-	-	-	-	-	-	-	2	-	-	-	**2**
Diphtheria	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Ehrlichiosis	-	-	-	-	-	-	2	-	-	-	-	-	**2**
Encephalitis	2	-	-	-	-	-	1	3	1	-	-	-	**7**
Fatality, trainee	-	-	-	-	-	-	1	-	1	-	-	-	**2**
Fatality, occupat.	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Giardiasis	-	3	2	2	5	6	8	8	4	11	7	6	**62**
Gonorrhea	176	130	115	125	127	98	115	140	89	84	97	76	**1372**
Granuloma Inguinale	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Guillain-Barre Syndrome	-	-	1	-	-	-	-	-	-	1	-	1	**3**
H. influenzae, inv	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Heat exhaustion	1	2	-	1	20	23	58	20	1	2	-	-	**128**
Heat stroke	-	-	-	3	6	4	14	11	3	5	1	-	**47**
Hemorrhagic fever	-	-	-	-	-	1	-	-	-	2	2	-	**5**
Hepatitis A, Acute	3	-	-	3	1	1	3	3	3	1	1	1	**20**
Hepatitis B, Acute	4	3	2	6	4	6	8	4	6	4	-	-	**47**
Hepatitis C, Acute	-	2	2	1	1	3	2	2	-	4	2	1	**20**
Hepatitis, unspec	-	1	5	4	2	-	-	1	-	-	-	-	**13**
Herpes Simplex	34	39	59	59	53	65	51	59	49	49	48	52	**617**
Influenza, unspec.	-	-	-	-	-	-	-	-	-	-	-	11	**11**
Influenza, type A	11	15	3	1	1	-	-	-	-	-	-	7	**38**
Influenza, type B	-	1	4	3	-	-	-	-	-	-	-	-	**8**
Kawasaki syndrome	-	-	-	1	1	-	-	1	-	-	-	-	**3**
Lead poisoning	-	-	-	-	-	1	-	-	-	-	-	-	**1**
Legionellosis	2	-	-	-	-	-	-	-	-	-	-	-	**2**
Leish, unspecified	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Leish, cutaneous	-	-	2	-	1	-	-	-	-	2	2	1	**8**
Leish, mucocutaneous	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Leish, visceral	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Leish, viscerotropic	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Leprosy	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Leptospirosis	-	-	-	-	-	-	1	-	-	-	-	-	**1**
Listeriosis	-	1	-	-	-	-	-	-	-	-	-	-	**1**
Lyme disease	1	1	1	1	1	3	3	1	-	1	-	-	**13**
Lymphogranuloma Vnrm	1	2	1	1	4	1	-	-	1	-	-	-	**11**

(Continued)

TABLE S5. Notifiable conditions reported through Medical Surveillance System* (continued).

Diagnosis	Jan '95	Feb '95	Mar '95	Apr '95	May '95	Jun '95	Jul '95	Aug '95	Sep '95	Oct '95	Nov '95	Dec '95	Total
Malaria, unspecified	1	-	-	-	-	1	-	-	1	-	-	-	**3**
Malaria, vivax	1	1	1	2	1	1	1	2	-	2	2	-	**14**
Malaria, falciparum	-	-	1	1	1	-	-	-	1	1	-	3	**8**
Malaria, malariae	-	-	-	-	-	1	-	-	-	-	-	-	**1**
Malaria, ovale	-	-	-	-	-	-	1	-	-	-	-	-	**1**
Measles	1	1	-	-	2	-	-	-	-	-	-	1	**5**
Meningitis, Viral	2	8	6	7	7	13	12	5	9	13	3	-	**85**
Meningitis, Bact.	1	5	5	3	2	3	-	-	-	1	3	2	**25**
Mercury intoxication	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Mumps (adults only)	1	2	1	-	-	-	-	-	1	-	1	-	**6**
Mycobacterial inf.	1	-	1	-	2	-	-	-	-	-	-	-	**4**
Pertussis	-	1	-	-	-	3	3	-	1	-	1	-	**9**
Plague	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Pneumococcal pneum.	-	8	14	6	1	-	-	-	-	-	-	-	**29**
Poliomyelitis	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Psittacosis	-	-	-	-	-	-	-	1	-	-	-	-	**1**
Q fever	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Rabies, human	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Radiation, ionizing	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Radiation, non-ionizing	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Relapsing fever	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Reye syndrome	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Rhabdomyolysis	1	2	5	6	2	-	3	7	7	2	2	-	**37**
Rheumatic fever	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Rift Valley Fever	-	-	-	-	-	-	-	-	-	-	-	-	**0**
RMSF	-	-	-	-	-	-	1	1	1	-	1	-	**4**
Rubella	-	-	-	1	-	-	-	-	-	-	-	-	**1**
Salmonellosis	9	12	4	7	6	22	11	25	25	23	12	12	**168**
Schistosomiasis	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Shigellosis	3	3	7	3	5	10	2	3	13	12	9	5	**75**
Smallpox	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Syphilis, unspec.	4	2	1	2	5	2	5	2	4	4	2	1	**34**
Syphilis, prim/sec	9	4	5	1	1	1	2	1	2	3	8	2	**39**
Syphilis, latent	4	5	1	2	-	2	4	2	-	-	-	2	**22**
Syphilis, tertiary	2	-	-	1	2	1	-	1	-	-	-	-	**7**
Syphilis, congenital	-	-	-	-	-	-	1	-	1	-	-	-	**2**
Tetanus	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Toxic shock syndrome	-	-	-	-	-	-	-	-	1	-	-	-	**1**
Toxoplasmosis	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Trichinellosis	-	-	1	-	-	-	-	-	-	-	-	-	**1**
Trypanosomiasis,Afr	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Trypanosomiasis,Amer	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Tuberculosis (TB)	6	1	5	1	3	1	1	3	2	4	-	3	**30**
TB, multi-drug resistant	-	-	-	-	-	-	1	-	-	1	-	-	**2**
Tularemia	-	-	1	-	-	-	-	-	-	-	-	-	**1**
Typhoid fever	-	-	-	-	-	-	1	-	-	-	-	-	**1**
Typhus fever	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Urethritis, Non-specific	110	84	79	73	86	83	94	53	33	75	54	31	**855**
Vaccine advrs event	1	-	-	-	-	-	-	3	-	-	-	-	**4**
Varicella,adult only	39	35	24	21	14	14	6	1	1	4	6	7	**172**
Yellow fever	-	-	-	-	-	-	-	-	-	-	-	-	**0**
Total	**766**	**719**	**658**	**650**	**689**	**675**	**803**	**684**	**542**	**593**	**514**	**417**	**7710**

* Based on date of onset.

Date of report: 7-Apr-96

TABLE S6. Cases of notifiable sexually transmitted diseases, United States Army, 1995*

Reporting MTF/Post**	Chlamydia				Urethritis non-spec.				Gonorrhea				Herpes Simplex				Syphilis Prim/Sec				Syphilis Latent			
	Active Duty		Other		Active Duty		Other		Active Duty		Other		Active Duty		Other		Active Duty		Other		Active Duty		Other	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
NORTH ATLANTIC HSSA																								
Walter Reed AMC	7	21	5	33	15	-	6	-	16	6	16	15	9	14	9	19	-	1	3	1	1	-	-	1
Aberdeen Prov. Ground	6	15	1	11	19	-	2	-	12	3	3	2	-	-	-	-	-	-	-	-	-	1	-	-
FT Belvoir, VA	3	8	4	18	-	-	-	-	8	2	2	7	-	-	-	2	-	1	-	-	-	-	-	-
FT Bragg, NC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Drum, NY	37	20	-	13	22	-	-	-	33	2	2	1	9	1	-	1	-	-	-	-	-	-	-	-
FT Eustis, VA	12	17	2	3	-	-	-	-	19	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Knox, KY	66	38	13	106	-	-	-	-	52	2	4	13	27	14	7	38	-	-	-	-	-	-	-	1
FT Lee, VA	9	28	2	5	2	-	-	-	21	7	5	5	1	3	-	1	-	1	-	-	-	-	-	-
FT Meade, MD	3	-	-	-	-	-	-	-	1	2	-	1	-	1	-	-	-	-	-	-	-	-	-	-
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CENTRAL HSSA																								
Fitzsimons AMC	4	2	7	27	-	-	-	-	3	1	2	2	-	-	-	2	-	-	-	-	-	-	1	-
SOUTH CENTRAL HSSA																								
Brooke AMC	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Carson, CO	105	62	13	113	298	-	41	-	97	24	2	15	25	13	3	23	1	-	-	-	-	-	-	-
FT Hood, TX	273	313	11	184	145	1	6	-	216	48	8	25	23	6	3	3	2	2	-	2	6	1	-	4
FT Leavenworth, KS	1	-	-	4	-	-	-	-	-	-	2	-	1	1	1	6	-	-	-	-	-	-	-	-
FT Leonard Wood, MO	10	13	4	25	31	-	10	-	23	9	3	12	4	4	2	2	1	1	-	1	-	-	-	-
FT Polk, LA	17	13	4	20	-	-	-	-	11	4	2	3	1	-	1	-	2	-	-	1	-	-	-	-
FT Riley, KS	17	15	-	56	-	-	-	-	8	2	-	7	-	1	-	1	3	-	-	-	-	-	-	-
FT Sill, OK	48	25	4	22	28	9	-	2	79	8	8	12	13	3	-	-	-	-	-	-	-	-	-	-
Panama	-	-	-	-	-	-	-	-	4	4	-	5	5	6	-	8	-	-	-	6	-	-	-	-
SOUTHEAST HSSA																								
Eisenhower AMC	28	30	8	31	2	-	-	-	27	9	5	7	26	14	1	13	2	-	2	-	-	-	-	-
FT Benning, GA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Campbell, KY	53	232	2	153	115	2	6	-	88	15	2	12	25	3	2	2	2	-	-	-	-	-	-	-
FT Jackson, SC	24	128	1	24	1	-	-	-	17	23	5	5	2	17	2	12	1	1	1	-	1	-	-	-
FT McClellan, AL	13	9	5	4	-	-	-	-	7	6	2	4	-	1	1	1	1	-	-	-	-	-	-	-
FT Rucker, AL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	2	35	1	30	88	1	3	-	46	7	1	4	11	5	-	3	-	-	-	-	-	-	1	-
SOUTHWEST HSSA																								
Wm Beaumont AMC	49	44	5	125	-	-	-	-	22	6	1	7	9	12	-	12	-	-	-	-	-	-	-	-
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	6	2	-	6	-	-	-	-	1	-	-	-	1	2	-	1	-	-	-	-	-	-	-	-
NORTHWEST HSSA																								
Madigan AMC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	9	12	-	7	-	-	-	-	7	2	1	2	-	-	-	-	-	-	-	-	-	1	1	-
PACIFIC HSSA																								
Tripler AMC	80	42	5	80	-	-	-	-	50	7	1	20	35	23	4	51	-	-	-	-	1	-	-	-
OTHER LOCATIONS																								
Europe	37	29	1	23	-	-	-	-	9	5	1	3	2	-	-	1	-	-	-	-	-	-	-	-
Korea	6	20	-	2	-	-	-	-	10	2	-	1	3	2	1	-	-	-	-	-	-	-	-	1
Sub-Total	**925**	**1174**	**98**	**1125**	**766**	**13**	**74**	**2**	**887**	**211**	**79**	**190**	**232**	**146**	**37**	**202**	**15**	**7**	**6**	**11**	**9**	**3**	**3**	**7**
Total	**2099**		**1223**		**779**		**76**		**1098**		**269**		**378**		**239**		**22**		**17**		**12**		**10**	

* Active Duty refers to Army Active Duty only.

** Reports are included from main and satellite clinics. Not all sites reporting.

Date of Report: 7-Apr-96

TABLE S7. Active Duty Force Strength by MTF, United States Army, Dec 1995*

MTF/Post**	Males							Females							All
	< 20	20-24	25-29	30-34	35-39	>= 40	Total M	< 20	20-24	25-29	30-34	35-39	>= 40	Total F	
NORTH ATLANTIC HSSA															
Walter Reed AMC	186	1487	1363	1623	1941	3330	**9930**	37	445	542	511	479	531	**2545**	**12475**
Aberdeen Prov. Ground	357	453	354	487	458	368	**2477**	66	117	92	60	55	31	**421**	**2898**
FT Belvoir, VA	24	390	399	379	368	408	**1968**	17	123	114	109	94	63	**520**	**2488**
FT Bragg, NC	1678	13747	9686	6723	4541	2562	**38937**	161	1693	1242	710	447	223	**4476**	**43413**
FT Drum, NY	544	3891	2320	1405	960	514	**9634**	52	418	200	135	75	33	**913**	**10547**
FT Eustis, VA	368	1325	1042	1045	932	895	**5607**	118	403	314	199	135	96	**1265**	**6872**
FT Knox, KY	1582	2467	1484	1536	1291	795	**9155**	22	203	189	145	129	78	**766**	**9921**
FT Lee, VA	417	792	619	619	539	413	**3399**	328	396	220	189	128	57	**1318**	**4717**
FT Meade, MD	54	885	1171	1035	910	1134	**5189**	19	316	329	250	217	152	**1283**	**6472**
USMA, West Point, NY	46	407	437	752	638	634	**2914**	8	105	87	121	97	71	**489**	**3403**
CENTRAL HSSA															
Fitzsimons AMC	17	152	209	189	205	226	**998**	7	64	89	65	52	63	**340**	**1338**
GREAT PLAINS HSSA															
Brooke AMC	308	854	997	1063	909	1029	**5160**	259	448	436	402	301	315	**2161**	**7321**
FT Carson, CO	382	4554	3486	2416	1614	888	**13340**	29	582	428	240	162	70	**1511**	**14851**
FT Hood, TX	2589	14244	9559	6077	4131	2336	**38936**	331	2261	1459	843	522	255	**5671**	**44607**
FT Leavenworth, KS	75	321	270	565	913	614	**2758**	13	88	71	87	107	45	**411**	**3169**
FT Leonard Wood, MO	846	1506	953	1011	811	457	**5584**	321	382	189	172	100	71	**1235**	**6819**
FT Polk, LA	425	2834	1846	1375	865	468	**7813**	63	465	283	152	102	71	**1136**	**8949**
FT Riley, KS	588	4086	2558	1599	1122	594	**10547**	45	486	293	172	140	73	**1209**	**11756**
FT Sill, OK	1775	4317	2696	1913	1455	791	**12947**	63	444	301	194	125	74	**1201**	**14148**
Panama	78	1188	1137	877	713	536	**4529**	15	198	165	111	86	49	**624**	**5153**
SOUTHEAST HSSA															
Eisenhower AMC	936	1735	1322	1267	1543	1246	**8049**	223	498	439	357	302	256	**2075**	**10124**
FT Benning, GA	2041	4543	3102	2113	1393	752	**13944**	63	416	326	215	118	69	**1207**	**15151**
FT Campbell, KY	1058	7190	5702	3568	2158	1093	**20769**	152	926	621	356	187	85	**2327**	**23096**
FT Jackson, SC	1471	1546	796	884	678	427	**5802**	638	693	322	299	168	87	**2207**	**8009**
FT McClellan, AL	423	589	489	651	585	435	**3172**	119	224	155	140	106	59	**803**	**3975**
FT Rucker, AL	67	815	1097	683	544	494	**3700**	49	187	131	89	61	39	**556**	**4256**
FT Stewart, GA	1101	6699	4474	2684	1889	1040	**17887**	125	853	623	322	201	106	**2230**	**20117**
SOUTHWEST HSSA															
Wm Beaumont AMC	515	2867	2188	1461	1273	1095	**9399**	123	607	345	236	154	168	**1633**	**11032**
FT Huachuca, AZ	198	1114	1047	899	709	547	**4514**	104	328	232	175	139	80	**1058**	**5572**
FT Irwin, CA	210	1402	942	755	529	311	**4149**	16	185	114	81	42	17	**455**	**4604**
NORTHWEST HSSA															
Madigan AMC	936	6204	4546	3155	2121	1399	**18361**	170	1090	736	407	285	196	**2884**	**21245**
FT Wainwright, AK	193	2251	1648	1070	622	315	**6099**	40	305	193	152	82	50	**822**	**6921**
PACIFIC HSSA															
Tripler AMC	361	4807	3819	2414	1588	1033	**14022**	40	724	624	421	314	204	**2327**	**16349**
OTHER LOCATIONS															
Europe	1639	17993	14266	9762	6854	4092	**54606**	306	3047	2113	1454	976	502	**8398**	**63004**
Korea	1244	8469	5872	4379	3456	2056	**25476**	271	1443	1034	716	485	241	**4190**	**29666**
Unknown	410	4424	5176	7059	5675	4002	**26754**§	122	886	897	864	661	340	**3772**§	**31211**§
Total	**25142**	**132548**	**99072**	**75493**	**56933**	**39329**	**428525**	**4535**	**22049**	**15948**	**11151**	**7834**	**4920**	**66439**	**495649**

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

** Includes any subordinate catchment areas not listed separately.

§ Includes unknown age groups and unknown gender.

Source: Defense Manpower Data Center (DMDC)

DEPARTMENT OF THE ARMY
U.S. Army Center for Health Promotion
and Preventive Medicine (Provisional)
Aberdeen Proving Ground, MD 21010-5422

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