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# MSMR

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## 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.*

USACEPDM

Case Reports**Cold Weather Injuries, October - December, 1995****Fort Wainwright : October - December 1995**

Twenty-eight cold weather injuries were reported from 1 October 1995- 31 December 1995 compared to 16 injuries reported during the same period one year ago. Fifty percent (14) of the injuries were frostbite of the fingers. Ten of these were first degree injuries, three were second degree, and one was third degree frostbite. Seventeen percent (5) of the injuries involved frostbitten feet; two were first degree injuries (including one hospitalization), and three were second degree frostbite. One individual was hospitalized overnight for a non-freezing cold injury (chilblain) to both feet. The remainder of the injuries were first degree frostbite to the ears and nose. Sixty-one percent of the injuries occurred among African-Americans; a proportion significantly above the approximate twenty-four percent of the U.S. Army population represented by African-Americans in Alaska. Sixty-Eight percent (19) of the injuries occurred when the wind-chill factor was at or below -20°F.

**Fort Bragg: November 1995**

During a field training exercise (FTX) 6-15 November, 1995, eleven soldiers were diagnosed in a Battalion Aid Station with grade B (mild) trenchfoot and one soldier was diagnosed with "frostnip", although he complained of cold, wet feet. Seven were from the same Parachute Infantry regiment. Temperatures during the FTX ranged from 28°F to 50°F with intermittent days of rain. Though the patients had changed their socks daily, they had not rewarmed their feet. All patients were treated, released and returned to duty with follow-up in their Troop Medical Clinic (TMC) as required. Five of the patients were in the Army for less than one year and two had previous cold injuries.

**Fort Bragg: December 1995**

On 11 December 1995, five soldiers of the 18th Personnel Support Battalion were evaluated in the Womack Emergency Room for minor cold injury to the feet. This battalion was engaged in field training exercises at this time. The low temperature for the 11th and 12th of December was 23°F without precipitation. The battalion had been appropriately trained to conduct cold weather exercises, but experienced

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difficulties with tent heating equipment. Command and medical support to the battalion reacted quickly and appropriately, and precluded more serious injury by sending these soldiers to the rear for evaluation.

Four of the soldiers were female and ages ranged from 21-24 years. Three patients experienced numb, cold toes; one had swelling of the fifth toe with blister formation; one had pain and a history of previous frostbite; and one had white stiff toes. On physical exam, all patients were neurovascularly intact with full active range of motion in all digits. All symptoms resolved while in the emergency room and the soldiers were released to duty with instructions to follow-up at their TMC as required.

*Information on case reports submitted by MAJ(P) WH Candler, MC, Chief, Preventive Medicine Service, Fort Wainwright, AK, CPT SM Zunger, MS, Chief, Environmental Health, and LTC SC Craig, MC, Chief, Preventive Medicine Service, Ft Bragg, NC.*

**Editorial Comment:** Cold weather injuries have had a major impact on military operations since recorded history. Hannibal suffered tremendous losses when he tried to cross the Alps in 218 BC. Napoleon’s Army, once thought to be invincible, was decimated by frostbite when he invaded Russia in 1812. Cold weather injuries continued to have a significant impact on military operations well into this century. During WWI, the U.S. Army admitted over 2,000 soldiers to the hospital for trench foot. At the conclusion of WWII, over 91,000 cold weather injuries were officially recorded among U.S. Army personnel. During the Korean conflict, soldiers and Marines suffered over 6,300 cold injuries, 90% of which were frostbitten feet.

There are three forms of cold weather injuries that can have a major impact on military operations: frostbite, non-freezing cold injury (NFCI), and hypo-

*Continued on page 7*

**Cold Weather Training Guidelines as a Function of Soldier Work Intensity and Wind-Chill Risk\***

Work Intensity	Wind Chill Risk*		
	Little Danger	Increased Danger	Great Danger
<b>High</b> Digging foxholes Running Marching with load Making or breaking bivouac	Increased surveillance by small unit leaders Black gloves optional - mandatory below 0° F Increased hydration	ECWCS** or equivalent Mittens with liners No facial camouflage Skin covered and kept dry Rest in warm, sheltered area Vapor barrier boots below 0° F	Postpone non-essential training Essential tasks only with < 15 minute exposure Work groups of no less than 2 Cover all exposed skin
<b>Low</b> Walking Marching without load Drill and ceremony	Increased surveillance Skin covered and dry Mittens and gloves with liner No facial camouflage below 10° F Full head cover below 0° F.	Restrict Non-essential training 30-40 minute work cycles to accomplish essential tasks Frequent supervisory surveillance for cold injuries.	Cancel Outdoor Training
<b>Sedentary</b> Sentry duty Eating, resting, sleeping, clerical work	Full head cover No facial camouflage below 10o F Vapor barrier boots below 0° F Mittens and gloves with liner	Postpone non-essential training 15-20 minute work cycles for essential tasks Work groups of no less than 2 personnel No exposed skin	Cancel Outdoor Training

\* See Wind Chill Chart on page 7.

\*\* Extended Cold Weather Clothing System.

**TABLE I. Cases of selected notifiable conditions, United States Army\*  
December, 1995**

Reporting MTF/Post**	Total number of reports submitted December 1995	Environmental Injuries			Viral Hepatitis			Malaria	Varicella	
		Active Duty		CO intox.	A	B	C	Active Duty	Active Duty	Other Adult
		Heat	Cold							
		Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995
<b>NORTH ATLANTIC HSSA</b>										
Walter Reed AMC	33	-	-	-	3	5	-	2	7	3
Aberdeen Prov. Ground	10	-	-	-	1	-	-	-	-	-
FT Belvoir, VA	0	1	-	-	1	1	-	-	1	1
FT Bragg, NC	10	8	1	-	-	-	-	1	-	-
FT Drum, NY	9	4	21	-	-	-	-	1	15	2
FT Eustis, VA	3	-	-	-	-	-	-	-	3	-
FT Knox, KY	40	-	-	-	1	-	2	1	-	-
FT Lee, VA	5	5	-	-	-	-	-	-	10	-
FT Meade, MD	0	-	-	-	-	-	-	-	-	-
USMA, West Point, NY	0	-	-	-	-	-	-	-	-	-
<b>CENTRAL HSSA</b>										
Fitzsimons AMC	3	-	-	-	1	1	-	-	3	1
FT Carson, CO	59	-	-	-	-	-	-	-	9	-
FT Leonard Wood, MO	28	3	1	-	-	1	-	1	26	4
FT Leavenworth, KS	2	-	-	-	-	-	-	-	-	-
FT Riley, KS	0	11	1	-	-	-	-	-	-	-
<b>SOUTH CENTRAL HSSA</b>										
Brooke AMC	1	-	-	-	2	1	-	1	-	-
FT Hood, TX	17	14	-	-	1	2	-	1	26	2
FT Polk, LA	6	5	-	-	-	-	-	-	-	-
FT Sill, OK	28	19	-	18	-	3	-	1	-	-
Panama	12	4	-	-	5	4	1	-	-	-
<b>SOUTHEAST HSSA</b>										
Eisenhower AMC	30	-	-	-	-	1	3	-	1	-
FT Benning, GA	0	33	14	-	-	-	-	1	1	-
FT Campbell, KY	0	-	-	-	1	-	1	-	2	-
FT Jackson, SC	17	1	-	-	-	-	-	-	9	-
FT McClellan, AL	11	1	-	-	-	-	-	-	-	-
FT Rucker, AL	0	3	-	-	-	-	-	-	-	-
FT Stewart, GA	0	-	-	-	-	-	-	-	-	-
<b>SOUTHWEST HSSA</b>										
Wm Beaumont AMC	0	-	-	-	1	3	-	1	3	2
FT Huachuca, AZ	0	-	-	-	-	-	-	-	-	-
FT Irwin, CA	0	-	-	-	-	-	-	-	-	-
<b>NORTHWEST HSSA</b>										
Madigan AMC	0	-	-	-	-	3	-	-	-	-
FT Wainwright, AK	23	-	32	-	-	-	-	-	-	-
<b>PACIFIC HSSA</b>										
Tripler AMC	28	4	-	-	-	4	-	6	-	-
<b>OTHER LOCATIONS</b>										
Europe	22	2	4	2	-	3	1	-	6	1
Korea	9	2	8	-	-	3	-	-	26	-
<b>Total</b>	<b>406</b>	<b>120</b>	<b>82</b>	<b>20</b>	<b>17</b>	<b>35</b>	<b>8</b>	<b>17</b>	<b>148</b>	<b>16</b>

\* Based on date of onset.

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

Date of Report: 7-Jan-96

**TABLE I. Cases of selected notifiable conditions, United States Army\* (continued)  
December, 1995**

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. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995
<b>NORTH ATLANTIC HSSA</b>											
Walter Reed AMC	5	4	1	1	2	3	1	4	-	-	-
Aberdeen Prov. Ground	-	-	-	-	-	-	-	-	-	-	-
FT Belvoir, VA	2	8	6	-	5	1	2	7	1	-	-
FT Bragg, NC	3	3	13	6	1	5	2	2	1	-	-
FT Drum, NY	2	-	2	-	-	1	-	1	-	-	-
FT Eustis, VA	-	-	-	1	-	-	-	-	-	-	-
FT Knox, KY	1	-	-	2	2	-	1	1	1	-	-
FT Lee, VA	-	-	-	-	-	1	-	-	-	-	-
FT Meade, MD	-	-	-	-	-	-	-	-	-	-	-
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-
<b>CENTRAL HSSA</b>											
Fitzsimons AMC	-	-	-	-	-	-	-	-	-	-	-
FT Carson, CO	1	2	2	1	-	1	1	1	1	-	-
FT Leonard Wood, MO	-	1	1	-	-	-	-	-	-	-	-
FT Leavenworth, KS	-	-	-	1	3	2	-	-	-	-	-
FT Riley, KS	-	1	-	-	-	1	1	-	1	-	-
<b>SOUTH CENTRAL HSSA</b>											
Brooke AMC	-	-	-	-	-	-	-	-	-	-	-
FT Hood, TX	1	-	1	-	1	-	-	-	-	3	-
FT Polk, LA	-	-	-	-	-	-	-	-	-	-	-
FT Sill, OK	-	-	-	-	-	-	-	-	-	-	-
Panama	4	3	21	1	2	3	5	3	18	-	-
<b>SOUTHEAST HSSA</b>											
Eisenhower AMC	1	-	-	-	-	2	-	-	1	-	-
FT Benning, GA	-	-	-	-	-	-	-	-	-	-	-
FT Campbell, KY	-	-	-	2	-	2	-	-	1	-	-
FT Jackson, SC	-	1	1	-	-	3	-	-	-	3	-
FT McClellan, AL	-	-	-	-	-	3	-	-	-	-	-
FT Rucker, AL	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	-	-	-	-	-	-	-	-	-	-	-
<b>SOUTHWEST HSSA</b>											
Wm Beaumont AMC	-	2	4	-	1	2	-	-	-	-	-
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	-	-	-	-	-	-	-	-	-	-	-
<b>NORTHWEST HSSA</b>											
Madigan AMC	1	3	2	-	-	1	2	-	2	-	-
FT Wainwright, AK	-	-	-	-	-	-	1	-	-	-	-
<b>PACIFIC HSSA</b>											
Tripler AMC	1	-	3	1	-	-	10	1	1	-	-
<b>OTHER LOCATIONS</b>											
Europe	13	7	6	-	1	-	3	3	1	-	-
Korea	2	-	3	-	-	-	-	-	-	-	-
<b>Total</b>	<b>37</b>	<b>35</b>	<b>66</b>	<b>16</b>	<b>18</b>	<b>31</b>	<b>29</b>	<b>23</b>	<b>29</b>	<b>6</b>	<b>0</b>

\* Based on date of onset.

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

Date of Report: 7-Jan-96

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

Reporting MTF/Post*	Chlamydia		Gonorrhea		Herpes Simplex		Syphilis Prim/Sec		Syphilis Latent		Urethritis non-spec.		Other STDs**	
	Cur. Month	Cum. 1995	Cur. Month	Cum. 1995	Cur. Month	Cum. 1995	Cur. Month	Cum. 1995	Cur. Month	Cum. 1995	Cur. Month	Cum. 1995	Cur. Month	Cum. 1995
<b>NORTH ATLANTIC HSSA</b>														
Walter Reed AMC	5	63	3	52	6	51	-	4	-	2	1	20	-	10
Aberdeen Prov. Ground	-	34	-	20	-	-	-	-	-	1	-	21	-	1
FT Belvoir, VA	1	33	2	19	-	2	-	1	-	-	-	-	-	5
FT Bragg, NC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Drum, NY	1	67	2	36	-	10	-	-	-	-	-	20	-	-
FT Eustis, VA	-	31	-	24	-	-	-	-	-	-	-	-	-	-
FT Knox, KY	12	224	6	71	13	86	-	-	-	1	-	-	-	-
FT Lee, VA	-	44	1	38	2	5	-	1	-	-	1	2	-	-
FT Meade, MD	-	-	-	-	-	-	-	-	-	-	-	-	-	-
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>CENTRAL HSSA</b>														
Fitzsimons AMC	-	40	-	8	-	2	-	-	-	1	-	-	-	2
FT Carson, CO	6	258	3	133	1	61	-	-	-	-	2	322	-	4
FT Leonard Wood, MO	6	51	12	47	2	12	-	3	-	-	3	41	-	2
FT Leavenworth, KS	-	5	-	1	-	9	-	-	-	-	-	-	-	-
FT Riley, KS	-	88	-	17	-	2	-	3	-	-	-	-	-	-
<b>SOUTH CENTRAL HSSA</b>														
Brooke AMC	-	1	-	-	-	-	-	-	-	-	-	-	-	1
FT Hood, TX	-	737	-	288	-	31	-	6	-	9	-	152	-	5
FT Polk, LA	-	52	2	20	-	2	-	3	-	-	-	-	-	1
FT Sill, OK	1	86	2	103	1	13	-	-	-	-	-	38	-	17
Panama	-	1	-	13	1	18	-	6	-	-	-	-	-	8
<b>SOUTHEAST HSSA</b>														
Eisenhower AMC	6	91	3	49	3	48	-	4	-	-	-	2	-	5
FT Benning, GA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Campbell, KY	-	358	-	93	-	23	-	1	-	-	1	123	-	-
FT Jackson, SC	3	174	-	50	-	31	-	3	-	1	-	1	-	7
FT McClellan, AL	-	26	-	15	-	2	-	-	-	-	-	-	-	-
FT Rucker, AL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	-	68	-	58	-	19	-	-	-	1	-	92	-	9
<b>SOUTHWEST HSSA</b>														
Wm Beaumont AMC	-	206	-	34	-	30	-	-	-	-	-	-	-	3
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	-	14	-	1	-	4	-	-	-	-	-	-	-	-
<b>NORTHWEST HSSA</b>														
Madigan AMC	-	-	-	-	-	-	-	-	-	-	-	-	-	3
FT Wainwright, AK	-	28	-	12	-	-	-	-	-	2	-	-	-	-
<b>PACIFIC HSSA</b>														
Tripler AMC	6	203	1	77	3	113	-	-	-	1	-	-	-	4
<b>OTHER LOCATIONS</b>														
Europe	-	82	-	12	-	3	-	-	-	-	-	-	-	6
Korea	1	26	-	12	-	5	-	-	-	1	-	-	-	5
<b>Total</b>	<b>48</b>	<b>3091</b>	<b>37</b>	<b>1303</b>	<b>32</b>	<b>582</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>20</b>	<b>8</b>	<b>834</b>	<b>0</b>	<b>98</b>

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

Date of Report: 7-Jan-96

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

Continued from page 3

thermia. Details of cold weather injury management are outlined in USARIEM Technical Note 93-4, "Medical Aspects of Cold Weather Operations: A Handbook for Medical Officers". An algorithm outlining key decision points for managing cold weather injuries is included on page 9.

Frostbite is the most common cold weather injury reported among U.S. Army soldiers. It involves the actual freezing of tissue. At first, all frozen tissue appears cold, hard and without blood flow. As the tissue warms, it may be quite sensitive to touch. The extent of injury may not be apparent until 48-72 hours after the injury occurred. The severity of frostbite is classified by the depth of tissue injury.

Prevention of frostbite depends upon adequate cold weather clothing properly maintained and worn, good training and constant command emphasis. Protection of the distal extremities from frostbite can be a considerable challenge during sustained operations at temperatures below -20°F, particularly if physical activity is low. At such temperatures any

amount of carelessness can result in injury.

Non Freezing Cold Injuries (NFCI) include immersion foot and trench foot. NFCI results from prolonged exposure of the extremities to cold, wet conditions above freezing (32°F). This prolonged cooling causes soft tissue damage especially to peripheral nerves and blood vessels. Trench foot is an entity noted almost exclusively among soldiers whose feet stayed cold and wet for extensive periods of time. Continued walking caused maceration of the tissue, which often resulted in serious infection. Prevention of NFCI involves good foot hygiene with frequent changing of socks and keeping footwear dry. Individuals who must stand in cold water for prolonged periods of time need to wear insulated waterproof boots.

Hypothermia, an infrequent but potentially serious cold weather injury occurs when the loss of body heat exceeds the body's ability to produce it. Clinically, the diagnosis of accidental hypothermia is made when the core temperature drops below 95°F. The risk of hypothermia is greatest when individuals

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**Wind Chill Chart**

Wind Speed (mph)	Actual Temperature (F)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	<b>Equivalent Chill Temperature (F)</b>											
calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	3	-9	-21	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-124
25	30	15	0	-15	-29	-44	-59	-74	-89	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-145
40	26	10	-6	-22	-37	-53	-69	-85	-101	-117	-132	-148
	<b>Little Danger</b>				<b>Increasing Danger</b>				<b>Great Danger</b>			
(Wind Speeds greater than 40 mph have little additional effect)	(If less than 5 hrs with dry skin. Greatest hazard from false sense of security)				(exposed flesh may freeze within 1 minute)				(exposed flesh may freeze within 30 seconds)			

*Continued from page 7*

endure prolonged exposure to cold wet conditions or undergo immersion in cold water. Hypothermia is a potentially lethal condition that must be appreciated by commanders and medical personnel alike. It can occur in regions with mild climates as well as cold climates. The recent hypothermia deaths of four ranger candidates training in Florida illustrates this clearly.

Risk factors contributing to cold weather injuries include fatigue, dehydration, inactivity, poor physical conditioning, and inadequate caloric intake. Lack of cold weather injury prevention training and lack of cold weather experience have also been noted risk factors. Individuals with previous cold injuries, particularly frostbite, have been noted to be at increased risk of a subsequent injury. Susceptibility to cold weather injury varies considerably among individuals. African-Americans have been noted to have significantly higher rates of frostbite than Caucasians under similar conditions in several published studies

In spite of excellent winter clothing and equipment, operating in cold weather environments remains a significant challenge to U.S. Army personnel. Commanders must ensure that soldiers are given thorough cold weather injury prevention training prior to being required to perform duties in extremely cold environments. Leaders must make sure that soldiers properly wear adequate cold weather gear especially when the wind-chill factor is below 0°F. The tables on page 3 and page 7, reproduced from USARIEM Technical Note 93-4, provides guidance for appropriate winter clothing based upon physical activity level and wind-chill factor. Some individuals, such as those who have had prior cold weather injuries and African-Americans, may require a higher level of protection than indicated.

*Editorial comment submitted by MAJ(P) William H Candler, MC, Chief, Preventive Medicine Service, Fort Wainwright, AK*

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## Case Reports

### **Multidrug-Resistant Tuberculosis - WRAMC**

Multidrug-Resistant Tuberculosis (MDRTB) is defined as an organism resistant to at least isoniazid and rifampin. In recent years the incidence of MDRTB has been increasing nationally. In the five years prior to 1995, there were three cases of MDRTB treated at Walter Reed Army Medical Center (WRAMC).

The first was a 35-year-old African American, active duty Marine with a history of foreign travel, noncompliance with prophylaxis, and substance abuse. He was admitted in 1988 and after multiple lengthy hospitalizations and outpatient follow-up, was discharged to the Philadelphia Department of Veteran's Affairs (VA) Hospital in 1992. He was hospitalized for two years with directly observed therapy, had several segmentectomies and was

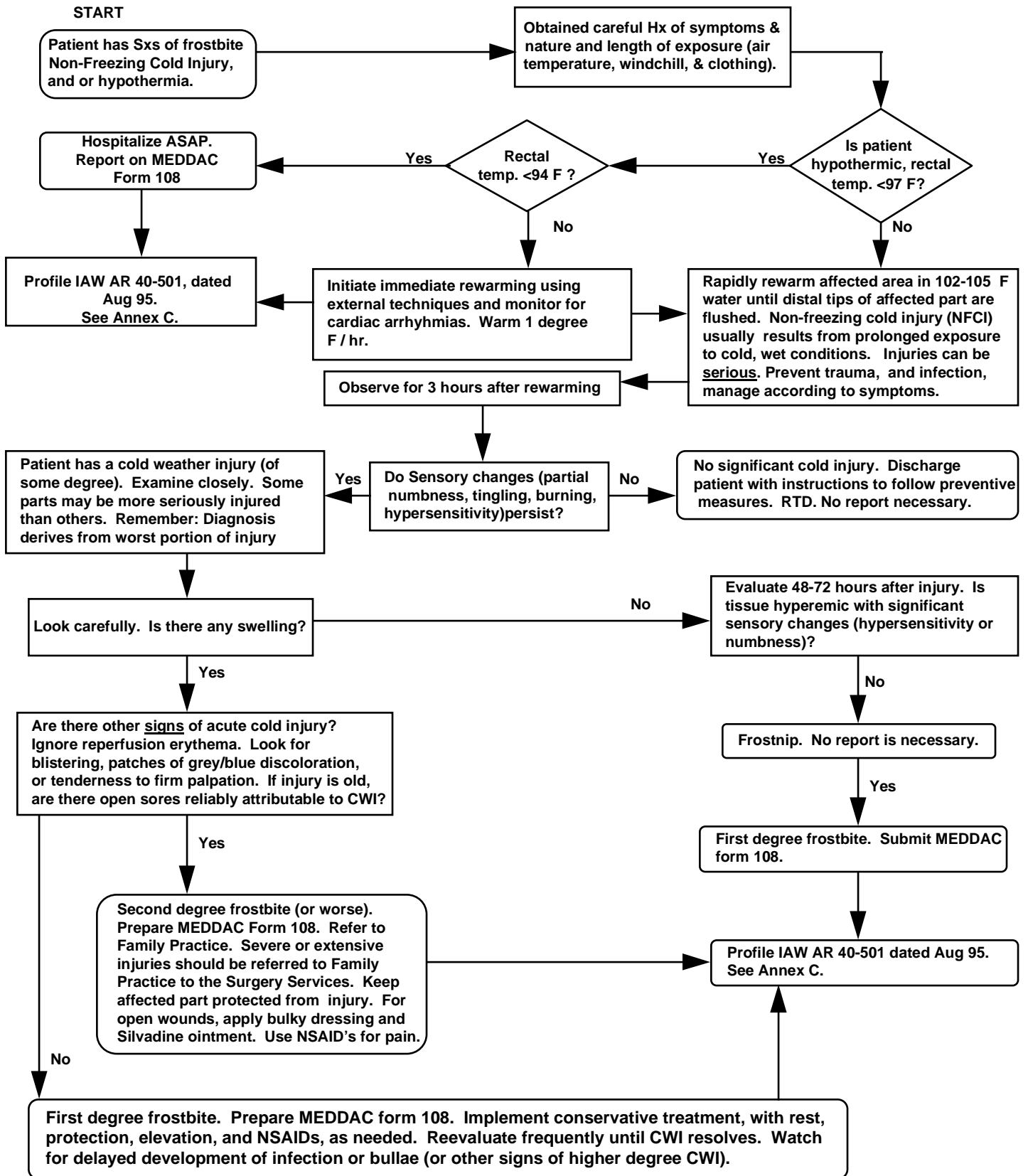
smear positive and culture positive for Mycobacterium tuberculosis (MTB) after four years of treatment. He suffered partial hearing and vision loss from medications. At latest report (December, 1995) he was still taking six drugs and had become smear and culture negative.

The second case was a 45-year-old Korean spouse of an active duty soldier who was admitted in 1990. After removal of one lung, she completed therapy as an outpatient and remained smear and culture negative for two years. She was discharged in 1995. The third case involved a 34-year-old Korean spouse of an active duty soldier admitted in 1992. She had a lobectomy and was on six drugs when discharged to Eisenhower Army Medical Center six months later.

*Continued on page 10*



**Flow chart for Primary Care of Cold Weather Injuries**



*Continued from page 8*

The diagnosis in 1995 of three additional cases (one confirmed MDRTB; one preliminary MDRTB; and one suspected MRDTB) in one month at WRAMC was an unusual occurrence. These three unrelated cases are described below.

**Case A** A 66-year-old Filipino woman who resides with her active duty Army son-in-law on a nearby post. She was admitted into an isolation room in July, 1995 for suspicion of reactivated tuberculosis. She tested negative for HIV. Sputa collected July 22-27 were smear positive, 5 AFB per high power field. By August 7, 1995, MTB was growing on cultures. She was started on isoniazid, rifampin, ethambutol, and pyrazinamide with directly observed therapy. Sputa collected later in August were smear and culture negative. Due to technical difficulties in the laboratory, sensitivities were not available until October when resistance to isoniazid and rifampin

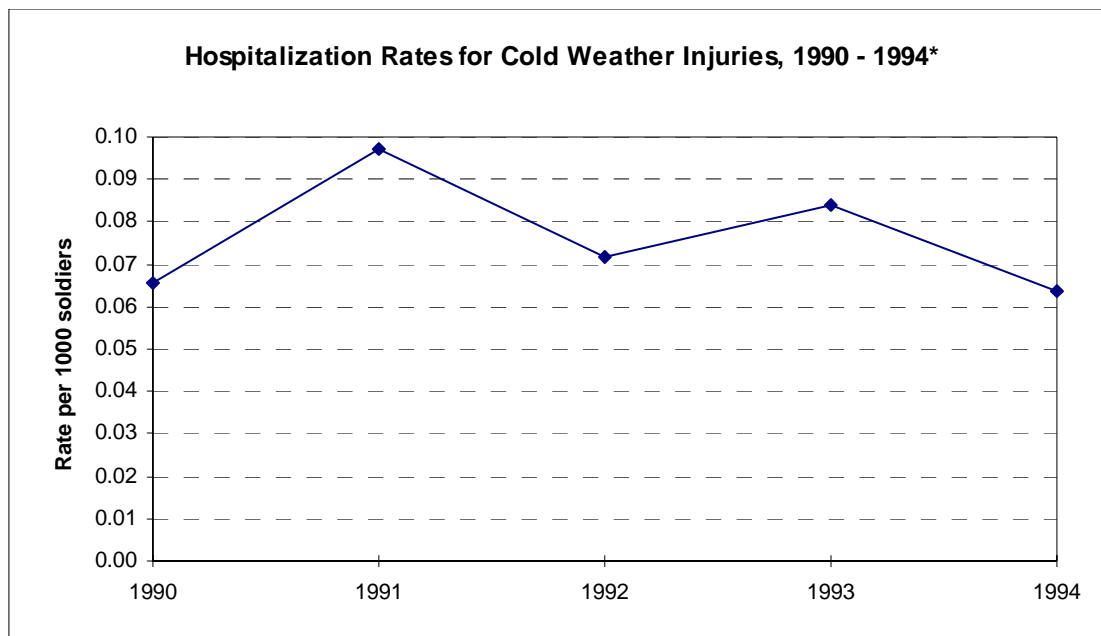
was reported. Her sputa remained smear and culture negative. In October, the isoniazid and rifampin were discontinued and streptomycin and ciprofloxacin were begun. She remains in directly observed therapy by the local health department with monthly follow-up at WRAMC.

The daughter of Case A, wife of the soldier, was previously treated for MTB and is smear and culture negative. She was considered the source case for Case A's original disease. The husband of Case A is an IPPD reactor with calcified granulomas (not consistent with old MTB) on his chest x-ray. His sputa are smear and culture negative. The son-in-law remains IPPD negative and refused prophylaxis.

Four health care providers, (two Army nurses, one 91C and one civilian aide) who worked the night shift on the floor where Case A was hospitalized converted their IPPDs. There was no known direct exposure to Case A and no other known lapse of

*Continued on page 11*

### Surveillance Trends



\* Active Duty Army only.

*Continued from page 10*

isolation protocol in the patient's negative pressure room. There was no other known source of exposure. These converters are receiving prophylaxis with ethambutol and pyrazinamide. Two other persons who were in the waiting room with Case A at the referring MEDDAC also converted their IPPD and are taking ethambutol and pyrazinamide.

**Case B** A 49-year-old African-American retired Marine. He had a known exposure to MDRTB in 1986 in North Carolina. He was a documented converter, but refused prophylaxis and moved to Philadelphia. He had recently received care at the Philadelphia VA Hospital but came to WRAMC with chest pain and was admitted on 18 October 1995 to a four-bed ward. The next day MTB was suspected and he was placed in isolation. He tested negative for HIV. His sputa were smear negative. He left the hospital against medical advice on 27 October. His cultures became positive for acid-fast bacilli (AFB) on 3 November. He was located through his aunt in Philadelphia and voluntarily returned for admission to WRAMC on 7 November. Preliminary sensitivities showed resistance to isoniazid and rifampin and he was placed on ethambutol, pyrazinamide, ciprofloxacin, and streptomycin. Final sensitivities on 26 December showed resistance to isoniazid and rifampin and sensitivity to all others tested, including streptomycin and ciprofloxacin.

His discharge plan was complicated, as he is an admitted substance abuser and noncompliance was a concern. He planned to go to Philadelphia to arrange his move to North Carolina where he could receive care at Camp Lejeune. The local health departments in Philadelphia and North Carolina would give directly observed therapy and streptomycin injections with weekend care provided at a military facility. He received initial therapy in Philadelphia, but did not arrive in North Carolina as scheduled. He was located and announced that he would stay in Philadelphia where the health department continues to supervise his medication. He has been compliant with directly observed therapy with incentives of

subway tokens and fast-food coupons. He will receive future medical follow-up from the health department.

**Case C** A 66-year-old African-American retired soldier who first contracted MTB in Vietnam. He had recurrence in 1979 which was treated with five drugs, documented by the health department. No drug sensitivity results have been located, but since five drugs were used, resistance was presumed. He presented on 25 November 1995, with increasing weakness, suffered a fall and had some paralysis on one side. He was isolated that same day upon admission to WRAMC. His chest x-ray demonstrated post-lobectomy, upper right side with resultant cavity and a density in the right lower lobe and left upper lobe. He tested negative for HIV. His sputa were smear negative. A bronchoscopy was done with the washing smear which was positive for AFB on 1 December. He was started on isoniazid, rifampin, ethambutol, pyrazinamide, ciprofloxacin and IV amikacin on 2 December. Concurrently he received IV penicillin for neurosyphilis. On 10 December his sputa became smear positive. On 27 December, the final identification of the AFB was *Mycobacterium kansaii* and he is no longer managed as a case of MDRTB. At this time, he developed renal problems from the amikacin and it was discontinued. Clarithromycin was added as the sixth drug. He will go to a residential facility upon discharge. He will be followed at WRAMC TB Clinic and adjustments to medication will be made when sensitivities are available.

*Information on case reports submitted by Melissa Van Wey, MSN, RN, Community Health Nurse, Walter Reed Army Medical Center, Washington, DC.*

**Editorial Comment:** These cases demonstrate many of the difficulties and challenges associated with clinical and public health management of tuberculosis in the 1990's. The number of reported cases of tuberculosis in the United States began increasing in 1986 and is now slowly responding to

*Continued on page 12*

*Continued from page 11*

national control efforts by governmental and private organizations. MDRTB cases, however, which are more complex and require longer, costlier treatment are on the increase.

Control of tuberculosis in the general population requires surveillance and early detection; drug-susceptibility testing; prophylaxis and treatment; isolation and quarantine when indicated; and emergency detention, if necessary, as a last resort. A comprehensive document covering the recommendations of the Advisory Council for the Elimination of Tuberculosis is titled "Essential Components of a Tuberculosis Prevention and Control Plan" and "Screening for Tuberculosis and Tuberculosis Infection in High-Risk Populations", MMWR, September 8, 1995 / Vol. 44 / No. RR-11.

Control of tuberculosis in the health care setting requires an active tuberculosis infection control plan which includes early identification of contagious patients; isolation; engineering controls; personal respiratory protective equipment; and surveillance of the staff. Success of the program and compliance with OSHA regulations will depend on the level of awareness, education, and training of medical personnel. A comprehensive document covering this

subject is "Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Facilities, 1994", MMWR, October 28, 1994 / Vol. 43 / No. RR-13.

The number of reported cases of tuberculosis in the United States reached a low of 22,201 in 1985. The resurgence began in 1986 and climbed to 26,673 in 1992. A downward trend began in 1993 with 25,313 cases and 24,361 cases in 1994, respectively. A continued national effort to control and reduce tuberculosis infection will be needed to continue this trend.

To support hospital staff training and continuing medical education activities, tuberculosis educational material for health care providers may be obtained from the National Center for Prevention Services, Centers for Disease Control and Prevention (CDC). A packet containing the "Core Curriculum on Tuberculosis", "TB Facts for Health Care Workers", "TB-HIV: A Connection", and other information is available by calling (404) 639-1819.

*Editorial comment submitted by COL J. Pitt Tomlinson, MD, MPH, Deputy for Preventive Medicine Services, Walter Reed Army Medical Center, Washington DC.*

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## Report From the Field

### **Hepatitis A in a Special Forces Unit, Ft Lewis, WA**

The head nurse in the Family Practice Department at MAMC notified the Preventive Medicine Service on 14 August 1995 about a possible hepatitis A case. An active duty Special Forces soldier had presented to that clinic reporting that he had been diagnosed recently with hepatitis A and was inquiring about immune serum globulin (ISG) for his family members. An investigation revealed the following 3 cases, summarized here.

**Case #1** A 26 year old male E-6 deployed to Haiti from 4 February 1995 through 10 July 1995 as a

member of an eight person Special Forces team. He received 5 cc of ISG at the end of January (exact date uncertain). His duties in Haiti included sewer repair work at a prison, during which he described literally standing in raw sewage. Other potential risk factors included eating at a local establishment across from the prison and use of a privately contracted cook. He states that symptoms began on or about 1 June 1995 with some nausea, headaches and eye pain. It was only after redeployment that he presented to clinic because his urine turned dark. He denies jaundice. Labs drawn on 19 July 1995 were

*Continued from page 12*

positive total HAVAB, ALT=1650 and bilirubin=1.8. A dengue titer was negative (he reported that two members of his team were diagnosed with dengue fever). A malaria smear done at that time was also negative. His confirmatory HAV IgM was reported on 16 August 1995. No ISG was given to contacts. Follow-up liver function tests (LFTs) on 7 September 1995 were normal.

**Case #2** A 35 year old male E-8 deployed to Haiti from 4 February 1995 through 10 July 1995 on the same Special Forces team with Case #1. He received 5 cc of ISG at the end of January (exact date uncertain). His duties in Haiti included sewer repair work at a prison (as described above). Other potential risk factors included eating at a local establishment across from the prison and use of a privately contracted cook. He and other team members were screened for hepatitis on 20 July 1995, though asymptomatic, because of the illness in Case #1. His total HAVAB was negative and LFTs were normal. He began having symptoms on 28 July 1995 with vomiting, anorexia, fatigue, dark urine and jaundice. He presented for these symptoms on 7 August 1995 but the blood specimen clotted. He returned to the clinic on 10 August 1995 and at that time HAVAB was positive, ALT=563 (upper limit normal=52) and bilirubin=9.3. His confirmatory HAV IgM was reported on 16 August 1995. ISG was given to his wife on 7 August 1995 and to 3 children on 14 August 1995. His ALT peaked on 18 September 1995 at 1461. At last check, on 23 October 1995,

his ALT=144 and total bilirubin=1.6.

**Case #3** A 36 year old female, wife of Case #2, went camping with her husband for several days shortly after his return from Haiti. Her only other potential risk factor was participation in a potluck lunch at work. She received ISG on 7 August 1995, at the time her husband first presented to the clinic for his symptoms. She began to have symptoms on 11 August 1995 with nausea, fever, chills and fatigue. She had slight jaundice. Her blood was drawn on 15 August 1995 and results showed positive total HAVAB, ALT >10,000 and bilirubin=2.5. Her confirmatory HAV IgM was reported on 17 August 1995. She was hospitalized for 3 days. Her peak total bilirubin= 9.4 on 23 Aug 1995. At last check, on 21 September 1995, her bilirubin was normal and her ALT=105. She recovered without sequelae.

The two soldiers appear to have contracted hepatitis A approximately 4 1/2 to 5 months after receiving prophylactic ISG. Each SF team is generally configured to have a medic, but this particular team lost its medic at some point midway through the deployment.

None of the three children of affected husband and wife became ill. There were no other known secondary cases.

*Information on case reports submitted by MAJ David P Goldman, Preventive Medicine Resident, Madigan Army Medical Center, Ft Lewis, WA.*

**TABLE S1. 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
Brucellosis	-	-	-	-	-	-	-	-	-	-	-	-	0
Campylobacteriosis	5	7	9	6	13	14	17	4	9	13	14	17	84
Carbon monoxide intx	2	3	1	-	-	-	-	-	12	-	-	-	18
Chancroid	-	-	-	-	-	-	1	-	1	-	-	1	2
Chemical agent exp	-	27	-	1	-	-	-	-	-	-	-	-	28
Chlamydia	303	267	274	295	305	291	363	312	246	305	291	363	2656
Cholera	-	-	-	-	-	-	-	-	-	-	-	-	0
Coccidioidomycosis	1	-	-	-	1	-	1	-	-	1	-	1	3
CWI, unspecified	3	-	-	-	-	-	-	-	-	-	-	-	3
CWI, frostbite	15	21	9	-	-	-	-	-	-	-	-	-	45
CWI, hypothermia	-	8	1	-	-	-	-	-	-	-	-	-	9
CWI, immersion type	2	6	4	-	-	-	-	-	-	-	-	-	12
Dengue fever	-	-	-	-	-	-	-	-	1	-	-	-	1
Diphtheria	-	-	-	-	-	-	-	-	-	-	-	-	0
Ehrlichiosis	-	-	-	-	-	-	2	-	-	-	-	2	2
Encephalitis	2	-	-	-	-	-	1	3	1	-	-	1	7
Fatality, trainee	-	-	-	-	-	-	1	-	1	-	-	1	2
Fatality, occupat.	-	-	-	-	-	-	-	-	-	-	-	-	0
Giardiasis	-	3	2	1	5	6	6	5	4	5	6	6	32
Gonorrhea	176	131	115	125	127	98	114	140	87	127	98	114	1113
Granuloma Inguinale	-	-	-	-	-	-	-	-	-	-	-	-	0
Guillain-Barre Syndrome	-	-	1	-	-	-	-	-	-	-	-	-	1
H. influenzae, inv	-	-	-	-	-	-	-	-	-	-	-	-	0
Heat exhaustion	1	2	-	1	20	23	58	18	1	20	23	58	124
Heat stroke	-	-	-	3	6	4	14	9	3	6	4	14	39
Hemorrhagic fever	-	-	-	-	-	1	-	-	-	-	1	-	1
Hepatitis A, Acute	3	-	-	3	1	1	3	3	3	1	1	3	17
Hepatitis B, Acute	4	3	2	6	4	6	7	4	5	4	6	7	41
Hepatitis C, Acute	-	2	2	1	1	2	-	1	-	1	2	-	9
Hepatitis, unspc	-	1	5	4	2	-	-	-	-	2	-	-	12
Herpes Simplex	33	39	59	59	53	65	51	56	48	53	65	51	463
Influenza, unspc.	-	-	-	-	-	-	-	-	-	-	-	-	0
Influenza, type A	10	15	3	1	1	-	-	-	-	1	-	-	30
Influenza, type B	-	1	4	3	-	-	-	-	-	-	-	-	8
Kawasaki syndrome	-	-	-	1	1	-	-	1	-	1	-	-	3
Lead poisoning	-	-	-	-	-	1	-	-	-	-	1	-	1
Legionellosis	2	-	-	-	-	-	-	-	-	-	-	-	2
Leish, unspecified	-	-	-	-	-	-	-	-	-	-	-	-	0
Leish, cutaneous	-	-	2	-	-	-	-	-	-	-	-	-	2
Leish, mucocutaneous	-	-	-	-	-	-	-	-	-	-	-	-	0
Leish, visceral	-	-	-	-	-	-	-	-	-	-	-	-	0
Leish, viscerotropic	-	-	-	-	-	-	-	-	-	-	-	-	0
Leprosy	-	-	-	-	-	-	-	-	-	-	-	-	0
Leptospirosis	-	-	-	-	-	-	1	-	-	-	-	1	1
Listeriosis	-	-	-	-	-	-	-	-	-	-	-	-	0
Lyme disease	1	1	1	1	1	3	3	1	-	1	3	3	12
Lymphogranuloma Vnrm	1	2	1	1	4	1	-	-	1	4	1	-	11

(Continued)

**TABLE S1. 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	-	2
Malaria, vivax	1	1	1	2	1	1	1	2	-	1	1	1	10
Malaria, falciparum	-	-	1	1	1	-	-	-	1	1	-	-	4
Malaria, malariae	-	-	-	-	-	1	-	-	-	-	1	-	1
Malaria, ovale	-	-	-	-	-	-	1	-	-	-	-	1	1
Measles	1	1	-	-	2	-	-	-	-	2	-	-	4
Meningitis, Viral	2	8	6	7	7	13	12	5	4	7	13	12	64
Meningitis, Bact.	1	5	5	3	2	3	-	-	-	2	3	-	19
Mercury intoxication	-	-	-	-	-	-	-	-	-	-	-	-	0
Mumps (adults only)	1	2	1	-	-	-	-	-	1	-	-	-	5
Mycobacterial inf.	1	-	1	-	2	-	-	-	-	2	-	-	4
Pertussis	-	1	-	-	-	3	3	-	1	-	3	3	8
Plague	-	-	-	-	-	-	-	-	-	-	-	-	0
Pneumococcal pneum.	-	8	14	6	1	-	-	-	-	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	-	2	5	6	2	-	3	7	7	2	-	3	32
Rheumatic fever	-	-	-	-	-	-	-	-	-	-	-	-	0
Rift Valley Fever	-	-	-	-	-	-	-	-	-	-	-	-	0
RMSF	-	-	-	-	-	-	1	1	1	-	-	1	3
Rubella	-	-	-	1	-	-	-	-	-	-	-	-	1
Salmonellosis	8	12	4	7	6	21	11	23	22	6	21	11	114
Schistosomiasis	-	-	-	-	-	-	-	-	-	-	-	-	0
Shigellosis	3	3	7	3	5	8	2	3	13	5	8	2	47
Smallpox	-	-	-	-	-	-	-	-	-	-	-	-	0
Syphilis, unspec.	4	2	1	2	5	2	5	2	4	5	2	5	27
Syphilis, prim/sec	9	4	5	1	1	1	2	1	2	1	1	2	26
Syphilis, latent	4	5	1	2	-	2	4	2	-	-	2	4	20
Syphilis, tertiary	2	-	-	1	2	1	-	1	-	2	1	-	7
Syphilis, congenital	-	-	-	-	-	-	1	-	1	-	-	1	2
Tetanus	-	-	-	-	-	-	-	-	-	-	-	-	0
Toxic shock syndrome	-	-	-	-	-	-	-	-	1	-	-	-	1
Toxoplasmosis	-	-	-	-	-	-	-	-	-	-	-	-	0
Trichinellosis	-	-	1	-	-	-	-	-	-	-	-	-	1
Trypanosomiasis,Afr	-	-	-	-	-	-	-	-	-	-	-	-	0
Trypanosomiasis,Amer	-	-	-	-	-	-	-	-	-	-	-	-	0
Tuberculosis (TB)	5	1	5	1	3	1	1	2	2	3	1	1	21
TB, multi-drug resistant	-	-	-	-	-	-	1	-	-	-	-	1	1
Tularemia	-	-	1	-	-	-	-	-	-	-	-	-	1
Typhoid fever	-	-	-	-	-	-	1	-	-	-	-	1	1
Typhus fever	-	-	-	-	-	-	-	-	-	-	-	-	0
Urethritis, Non-specific	110	85	79	73	86	83	94	53	33	86	83	94	696
Vaccine advrs event	1	-	-	-	-	-	-	3	-	-	-	-	4
Varicella,adult only	39	34	24	21	14	14	6	1	1	14	14	6	154
Yellow fever	-	-	-	-	-	-	-	-	-	-	-	-	0
<b>Total</b>	<b>757</b>	<b>713</b>	<b>658</b>	<b>649</b>	<b>685</b>	<b>671</b>	<b>792</b>	<b>665</b>	<b>519</b>	<b>685</b>	<b>671</b>	<b>792</b>	<b>6109</b>

\* Based on date of onset.

TABLE S2. Reported heat and cold weather injuries, United States Army, Jan-Dec 1995\*

Reporting MTF/Post**	Heat Injuries				Cold Weather Injuries							
	Heat Exhaustion		Heat Stroke		Frostbite		Hypothermia		Immersion		Unspecified	
	M	F	M	F	M	F	M	F	M	F	M	F
<b>NORTH ATLANTIC HSSA</b>												
Walter Reed AMC	-	-	-	-	-	-	-	-	-	-	-	-
Aberdeen Prov. Ground	-	-	-	-	-	-	-	-	-	-	-	-
FT Belvoir, VA	1	-	-	-	-	-	-	-	-	-	-	-
FT Bragg, NC	4	1	2	1	1	-	-	-	-	-	-	-
FT Drum, NY	3	-	1	-	13	2	-	-	5	1	-	-
FT Eustis, VA	-	-	-	-	-	-	-	-	-	-	-	-
FT Knox, KY	-	-	-	-	-	-	-	-	-	-	-	-
FT Lee, VA	1	3	1	-	-	-	-	-	-	-	-	-
FT Meade, MD	-	-	-	-	-	-	-	-	-	-	-	-
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-	-
<b>CENTRAL HSSA</b>												
Fitzsimons AMC	-	-	-	-	-	-	-	-	-	-	-	-
FT Carson, CO	-	-	-	-	-	-	-	-	-	-	-	-
FT Leonard Wood, MO	3	-	-	-	-	1	-	-	-	-	-	-
FT Leavenworth, KS	-	-	-	-	-	-	-	-	-	-	-	-
FT Riley, KS	7	4	-	-	-	-	1	-	-	-	-	-
<b>SOUTH CENTRAL HSSA</b>												
Brooke AMC	-	-	-	-	-	-	-	-	-	-	-	-
FT Hood, TX	12	2	-	-	-	-	-	-	-	-	-	-
FT Polk, LA	1	-	4	-	-	-	-	-	-	-	-	-
FT Sill, OK	16	1	1	1	-	-	-	-	-	-	-	-
Panama	4	-	-	-	-	-	-	-	-	-	-	-
<b>SOUTHEAST HSSA</b>												
Eisenhower AMC	-	-	-	-	-	-	-	-	-	-	-	-
FT Benning, GA	8	2	23	-	3	-	7	-	4	-	-	-
FT Campbell, KY	-	-	-	-	-	-	-	-	-	-	-	-
FT Jackson, SC	1	-	-	-	-	-	-	-	-	-	-	-
FT McClellan, AL	1	-	-	-	-	-	-	-	-	-	-	-
FT Rucker, AL	2	1	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	-	-	-	-	-	-	-	-	-	-	-	-
<b>SOUTHWEST HSSA</b>												
Wm Beaumont AMC	-	-	-	-	-	-	-	-	-	-	-	-
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	-	-	-	-	-	-	-	-	-	-	-	-
<b>NORTHWEST HSSA</b>												
Madigan AMC	-	-	-	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	-	-	-	-	19	12	-	-	-	-	-	1
<b>PACIFIC HSSA</b>												
Tripler AMC	1	-	3	-	-	-	-	-	-	-	-	-
<b>OTHER LOCATIONS</b>												
Europe	2	-	-	-	-	-	-	-	-	1	2	1
Korea	-	-	1	1	3	-	-	-	-	-	-	-
<b>Total</b>	<b>67</b>	<b>14</b>	<b>36</b>	<b>3</b>	<b>39</b>	<b>15</b>	<b>8</b>	<b>0</b>	<b>9</b>	<b>2</b>	<b>2</b>	<b>2</b>

\* Army active duty cases only.

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

Date of Report: 7-Jan-96



**TABLE S3. Cases of notifiable sexually transmitted diseases, United States Army, Jan-Dec 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
<b>NORTH ATLANTIC HSSA</b>																								
Walter Reed AMC	7	19	5	32	15	-	5	-	16	6	16	14	9	14	9	19	-	1	2	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	36	18	-	13	20	-	-	-	31	2	2	1	8	1	-	1	-	-	-	-	-	-	-	-
FT Eustis, VA	11	16	2	2	-	-	-	-	19	4	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>CENTRAL HSSA</b>																								
Fitzsimons AMC	4	2	7	27	-	-	-	-	3	1	2	2	-	-	-	2	-	-	-	-	-	-	1	-
FT Carson, CO	95	55	12	96	283	-	39	-	94	23	2	14	24	13	3	21	-	-	-	-	-	-	-	-
FT Leonard Wood, MO	9	13	4	25	31	-	10	-	23	9	3	12	4	4	2	2	1	1	-	1	-	-	-	-
FT Leavenworth, KS	1	-	-	4	-	-	-	-	-	-	1	-	1	1	1	6	-	-	-	-	-	-	-	-
FT Riley, KS	17	15	-	56	-	-	-	-	8	2	-	7	-	1	-	1	3	-	-	-	-	-	-	-
<b>SOUTH CENTRAL HSSA</b>																								
Brooke AMC	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Hood, TX	259	294	10	173	145	1	6	-	207	48	7	24	21	4	3	3	2	2	-	2	5	1	-	3
FT Polk, LA	15	13	4	20	-	-	-	-	11	4	2	2	1	-	1	-	2	-	-	1	-	-	-	-
FT Sill, OK	44	20	4	18	27	9	-	2	77	7	7	12	11	2	-	-	-	-	-	-	-	-	-	-
Panama	-	-	-	-	-	-	-	-	4	4	-	5	5	6	-	7	-	-	-	6	-	-	-	-
<b>SOUTHEAST HSSA</b>																								
Eisenhower AMC	26	28	8	29	2	-	-	-	27	9	5	7	23	14	1	10	2	-	2	-	-	-	-	-
FT Benning, GA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Campbell, KY	45	185	2	124	115	2	6	-	70	11	1	11	16	3	2	2	1	-	-	-	-	-	-	-
FT Jackson, SC	24	125	1	24	1	-	-	-	17	23	5	5	2	15	2	12	1	1	1	-	1	-	-	-
FT McClellan, AL	12	7	4	3	-	-	-	-	5	5	2	3	-	-	1	1	-	-	-	-	-	-	-	-
FT Rucker, AL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	2	35	1	30	88	1	3	-	46	7	1	4	11	5	-	3	-	-	-	-	-	-	1	-
<b>SOUTHWEST HSSA</b>																								
Wm Beaumont AMC	46	39	5	116	-	-	-	-	20	6	1	7	9	12	-	9	-	-	-	-	-	-	-	-
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	6	2	-	6	-	-	-	-	1	-	-	-	1	2	-	1	-	-	-	-	-	-	-	-
<b>NORTHWEST HSSA</b>																								
Madigan AMC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	9	12	-	7	-	-	-	-	7	2	1	2	-	-	-	-	-	-	-	-	-	1	1	-
<b>PACIFIC HSSA</b>																								
Tripler AMC	80	40	5	78	-	-	-	-	49	7	1	20	35	23	4	51	-	-	-	-	1	-	-	-
<b>OTHER LOCATIONS</b>																								
Europe	32	24	-	20	-	-	-	-	6	4	1	1	2	-	-	1	-	-	-	-	-	-	-	-
Korea	6	17	-	2	-	-	-	-	9	2	-	1	2	2	1	-	-	-	-	-	-	-	-	1
<b>Sub-Total</b>	<b>870</b>	<b>1069</b>	<b>94</b>	<b>1045</b>	<b>748</b>	<b>13</b>	<b>71</b>	<b>2</b>	<b>843</b>	<b>200</b>	<b>75</b>	<b>181</b>	<b>213</b>	<b>139</b>	<b>37</b>	<b>193</b>	<b>12</b>	<b>7</b>	<b>5</b>	<b>11</b>	<b>8</b>	<b>3</b>	<b>3</b>	<b>6</b>
<b>Total</b>	<b>1939</b>	<b>1139</b>	<b>761</b>	<b>73</b>	<b>1043</b>	<b>256</b>	<b>352</b>	<b>230</b>	<b>19</b>	<b>16</b>	<b>11</b>	<b>9</b>												

\* Active Duty refers to Army Active Duty only.

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

ARD Surveillance UpdateLegend

—	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.

TABLE S4. Active Duty Force Strength by MTF, United States Army, Sep 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	
<b>NORTH ATLANTIC HSSA</b>															
Walter Reed AMC	73	1483	1392	1542	1914	3559	9963	24	404	569	511	480	558	2546	12509
Aberdeen Prov. Ground	362	605	382	481	462	400	2692	37	132	92	51	54	29	395	3087
FT Belvoir, VA	3	358	421	370	356	441	1949	4	117	126	105	104	72	528	2477
FT Bragg, NC	688	13600	10136	7040	4719	2823	39006	86	1618	1304	733	466	256	4463	43469
FT Drum, NY	250	3885	2454	1435	987	554	9565	21	412	208	141	80	38	900	10465
FT Eustis, VA	270	1331	1113	1034	872	880	5500	64	393	331	199	132	94	1213	6713
FT Knox, KY	2011	2733	1611	1564	1407	928	10254	15	198	200	149	136	85	783	11037
FT Lee, VA	416	789	631	650	583	464	3533	234	387	227	204	130	64	1246	4779
FT Meade, MD	18	839	1209	1052	961	1247	5326	8	290	336	261	223	167	1285	6611
USMA, West Point, NY	34	427	471	743	699	706	3080	10	116	103	121	105	79	534	3614
<b>CENTRAL HSSA</b>															
Fitzsimons AMC	11	156	241	199	213	227	1047	8	82	99	62	61	65	377	1424
FT Carson, CO	186	4493	3858	2559	1687	1043	13826	17	609	514	265	170	84	1659	15485
FT Leonard Wood, MO	467	1158	884	1023	844	490	4866	115	248	156	166	103	79	867	5733
FT Leavenworth, KS	29	334	297	520	950	683	2813	5	90	79	85	106	49	414	3227
FT Riley, KS	259	4335	2932	1804	1237	726	11293	29	531	356	200	146	78	1340	12633
<b>SOUTH CENTRAL HSSA</b>															
Brooke AMC	338	892	1092	1090	960	1115	5487	190	463	437	413	314	330	2147	7634
FT Hood, TX	869	13905	10230	6241	4318	2671	38234	171	2201	1610	858	567	282	5689	43923
FT Polk, LA	199	2898	1969	1412	938	537	7953	25	471	316	161	103	80	1156	9109
FT Sill, OK	1917	4488	2898	2001	1555	897	13756	31	443	328	211	124	85	1222	14978
Panama	27	1170	1245	959	748	623	4772	9	221	178	119	95	53	675	5447
<b>SOUTHEAST HSSA</b>															
Eisenhower AMC	782	1949	1418	1288	1593	1398	8428	138	537	482	389	312	290	2148	10576
FT Benning, GA	2528	4669	3221	2162	1499	876	14955	38	412	358	214	130	74	1226	16181
FT Campbell, KY	395	7131	6104	3653	2238	1237	20758	68	920	676	367	215	95	2341	23099
FT Jackson, SC	1229	1375	798	879	721	476	5478	821	685	332	293	169	94	2394	7872
FT McClellan, AL	492	557	502	654	610	507	3322	117	219	165	137	121	67	826	4148
FT Rucker, AL	77	813	1185	731	572	545	3923	38	190	158	96	66	36	584	4507
FT Stewart, GA	388	6685	4835	2800	1958	1155	17821	67	840	686	346	223	122	2284	20105
<b>SOUTHWEST HSSA</b>															
Wm Beaumont AMC	308	3181	2513	1621	1333	1229	10185	68	633	380	252	151	182	1666	11851
FT Huachuca, AZ	146	1077	1084	902	711	613	4533	71	363	238	178	153	90	1093	5626
FT Irwin, CA	90	1403	996	765	558	333	4145	7	187	118	82	46	19	459	4604
<b>NORTHWEST HSSA</b>															
Madigan AMC	440	6108	4856	3251	2209	1561	18425	99	1089	796	410	288	221	2903	21328
FT Wainwright, AK	80	2141	1726	1067	658	364	6036	24	288	198	153	91	57	811	6847
<b>PACIFIC HSSA</b>															
Tripler AMC	158	4798	4060	2559	1697	1165	14437	20	666	660	428	313	219	2306	16743
<b>OTHER LOCATIONS</b>															
Europe	701	17586	15338	10234	7441	4792	56092	157	3056	2333	1581	1056	578	8761	64853
Korea	717	8590	6146	4406	3533	2250	25642	148	1434	1081	771	508	275	4217	29859
Unknown	850	4365	4990	6919	5695	4504	27371 <sup>§</sup>	316	925	863	878	655	363	4008 <sup>§</sup>	32069 <sup>§</sup>
<b>Total</b>	<b>17808</b>	<b>132307</b>	<b>105238</b>	<b>77610</b>	<b>59436</b>	<b>44019</b>	<b>436466</b>	<b>3300</b>	<b>21870</b>	<b>17093</b>	<b>11590</b>	<b>8196</b>	<b>5409</b>	<b>67466</b>	<b>504622</b>

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

§ Includes unknown age groups and unknown gender.

\*\* Includes any subordinate catchment areas not listed separately.

Source: Defense Manpower Data Center (DMDIC)

DEPARTMENT OF THE ARMY  
U.S. Army Center for Health Promotion  
and Preventive Medicine (Provisional)  
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