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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.

Report from the Field

Dermatitis Outbreak - Heidelberg Military Community, Germany

More than 140 U.S. soldiers and civilians from the Heidelberg area sought treatment for an acute, pruritic rash during a seven day period in late June 1995. Initial interviews performed by Heidelberg MEDDAC Preventive Medicine personnel revealed that most of these individuals lived or worked on Tompkins Barracks in Schwetzingen, Germany. Spot maps demonstrated that most of the affected individuals worked or exercised on the southwest corner of the installation where several office buildings and recreational fields are located. Individuals complained of a rash that commonly consisted of multiple distinct erythematous macules and hives, distributed widely about the head, arms and upper torso.

Heidelberg Preventive Medicine personnel surveyed the area for a possible etiology to the outbreak. The initial investigation suggested that mites could be the cause of the outbreak and assistance from the Center for Health Promotion and Preventive Medicine-Europe (CHPPM-EUR) was requested. As a result, a medical entomology response team was immediately dispatched to conduct additional arthropod surveys.

The CHPPM-EUR entomology survey team found large numbers of Oak Processionary caterpillars (*Thaumetopoea processionea*) throughout the southwest corner of the installation. This caterpillar is active from May to June, feeding on oak tree leaves. The caterpillars release tremendous numbers of hairs that are transported by the wind, causing skin irritation and discomfort to those exposed. The caterpillars were particularly dense on and around oak trees near the office buildings and recreation areas.

Team members experienced the characteristic rash within one hour of the arthropod survey. The distribution of the rash together with its rapid onset was indicative of urticaria caused by toxic hairs of these caterpillars. Symptoms from mite bites typically cause pruritis beginning 3-6 hours after exposure and dermatitis from 10-16 hours after exposure. Additionally, mite bites are generally seen on the lower body and areas where restrictive clothing is worn.

CHPPM-EUR entomologists recommended that the caterpillar population be controlled by spraying infested trees with insecticide, followed by washing the caterpillar nests from the trees with a high pressure water spray. In this way, the number of inflammatory hairs released from dead caterpillars would be reduced. Additional preventive measures

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included restricted access to the caterpillar infested area and education on personal protective measures to reduce arthropod bites.

Implementation of the control measures lead to a rapid fall in the number of cases of dermatitis patients reported as shown in Figure 1. Consultation with German public health officials confirmed that similar occurrences were being reported in the local area and had been reported in past years as well.

Submitted by MAJ JE Cook, MC, CPT L Hesler, MS, MAJ T Logan, MS, CHPPM-EUR, CMR 402, APO AE 09180 and CPT C Moser, MS, Preventive Medicine Services, Heidelberg MEDDAC, APO AE 09102

Editorial Comment: Generally, we only think of medically important insects in terms of those that carry diseases. This report gives an example of another medical threat from arthropods.

Many larval butterflies and moths (caterpillars) have developed urticating and poisonous hairs as a defense mechanism against predators. These "hairs" are actually sharply pointed spines sometimes with a poisonous sack at the base. When touched, the hairs break off and the poison is injected. In addition to the skin dermatitis, acute inflammation of the upper respiratory tract may occur when the poisonous hairs are airborne. Fortunately these outbreaks are seasonal and of short duration.

When in contact with human skin, eyes, or other organs these urticating hairs typically produce one of the following:

1) An urticarial type of reactive dermatitis due to the injection of larval toxins containing histamine or other toxic substances that cause a histamine-type reaction.

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Figure 1. Daily outpatient visits for dermatitis, Heildeburg, Germany

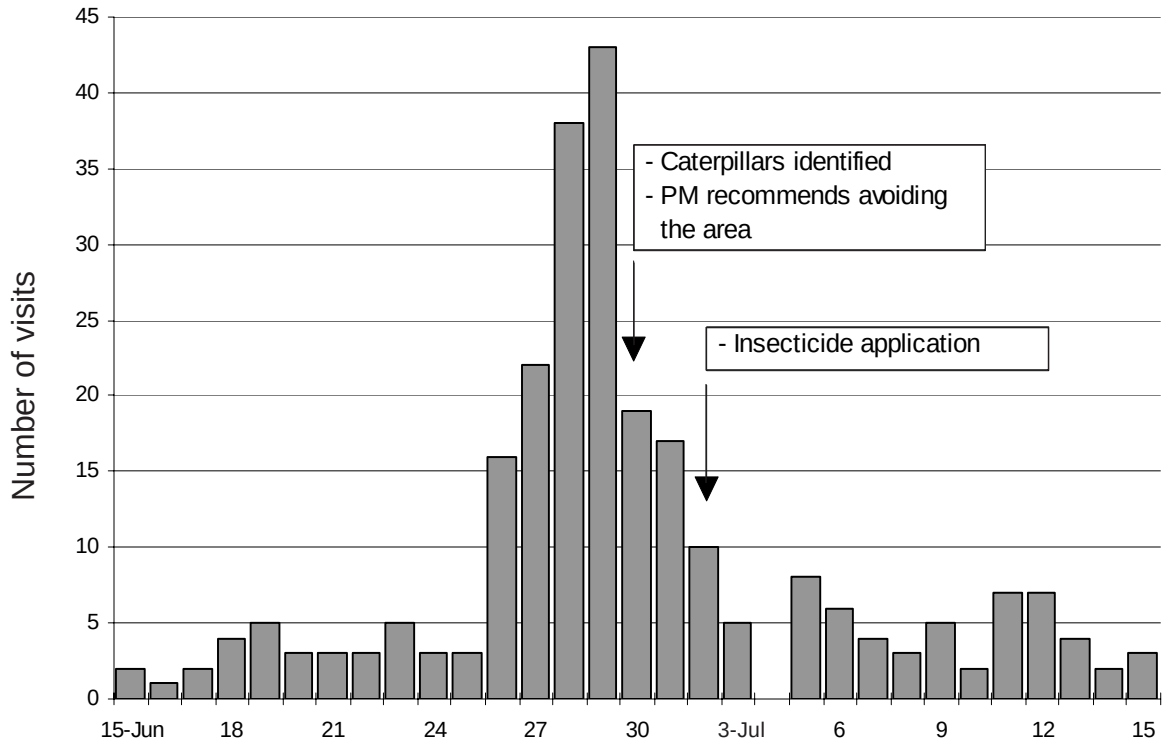

TABLE I. Cases of selected notifiable conditions, United States Army.*
August, 1995

Reporting MTF/Post**	Total number of reports submitted August, 1995	Environmental Injuries			Viral Hepatitis			Malaria	Varicella	
		Active Duty		CO intox.				Active Duty	Active Duty	Other Adult
		Heat	Cold		A	B	C			
		Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995	Cum. 1995
NORTH ATLANTIC HSSA										
Walter Reed AMC	45	-	-	-	3	5	-	1	5	3
Aberdeen Prov. Ground	20	-	-	-	1	-	-	-	-	-
FT Belvoir, VA	0	1	-	-	-	-	-	-	-	-
FT Drum, NY	20	4	21	-	-	-	-	1	14	1
FT Eustis, VA	0	-	-	-	-	-	-	-	-	-
FT Knox, KY	19	-	-	-	-	-	1	1	-	-
FT Lee, VA	7	5	-	-	-	-	-	-	10	-
FT Meade, MD	0	-	-	-	-	-	-	-	-	-
USMA, West Point, NY	0	-	-	-	-	-	-	-	-	-
CENTRAL HSSA										
Fitzsimons AMC	1	-	-	-	1	1	-	-	3	1
FT Carson, CO	56	-	-	-	-	-	-	-	6	-
FT Leonard Wood, MO	22	3	1	-	-	1	-	-	23	4
FT Leavenworth, KS	4	-	-	-	-	-	-	-	-	-
FT Riley, KS	13	11	1	-	-	-	-	-	-	-
SOUTH CENTRAL HSSA										
Brooke AMC	23	-	-	-	2	-	-	1	-	-
FT Hood, TX	0	5	-	-	-	1	-	-	26	1
FT Polk, LA	25	5	-	-	-	-	-	-	-	-
FT Sill, OK	22	19	-	3	-	1	-	1	-	-
Panama	10	4	-	-	5	2	1	-	-	-
SOUTHEAST HSSA										
Eisenhower AMC	38	-	-	-	-	1	1	-	1	-
FT Benning, GA	10	26	14	-	-	-	-	1	1	-
FT Bragg, NC	27	8	-	-	-	-	-	-	-	-
FT Campbell, KY	0	-	-	-	1	-	1	-	2	-
FT Jackson, SC	29	-	-	-	-	-	-	-	9	-
FT McClellan, AL	22	1	-	-	-	-	-	-	-	-
FT Rucker, AL	2	3	-	-	-	-	-	-	-	-
FT Stewart, GA	33	-	-	-	-	-	-	-	-	-
SOUTHWEST HSSA										
Wm Beaumont AMC	41	-	-	-	-	3	-	-	3	2
FT Huachuca, AZ	0	-	-	-	-	-	-	-	-	-
FT Irwin, CA	0	-	-	-	-	-	-	-	-	-
NORTHWEST HSSA										
Madigan AMC	4	-	-	-	-	1	-	-	-	-
FT Wainwright, AK	6	-	17	-	-	-	-	-	-	-
PACIFIC HSSA										
Tripler AMC	67	1	-	-	-	3	-	5	-	-
OTHER LOCATIONS										
Europe	0	-	4	2	-	2	-	-	6	1
Korea	12	1	8	-	-	3	-	-	20	-
Total	**578**	**97**	**66**	**5**	**13**	**24**	**4**	**11**	**129**	**13**

* Based on date of onset.

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

Date of Report: 7-Sep-95

TABLE I. Cases of selected notifiable conditions, United States Army* (continued)
August, 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
NORTH ATLANTIC HSSA											
Walter Reed AMC	4	-	-	-	1	-	1	-	-	-	-
Aberdeen Prov. Ground	-	-	-	-	-	-	-	-	-	-	-
FT Belvoir, VA	-	1	2	-	1	1	-	2	1	-	-
FT Drum, NY	1	-	1	-	-	1	-	1	-	-	-
FT Eustis, VA	-	-	-	-	-	-	-	-	-	-	-
FT Knox, KY	1	-	-	-	-	-	-	-	1	-	-
FT Lee, VA	-	-	-	-	-	-	-	-	-	-	-
FT Meade, MD	-	-	-	-	-	-	-	-	-	-	-
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-
CENTRAL HSSA											
Fitzsimons AMC	-	-	-	-	-	-	-	-	-	-	-
FT Carson, CO	-	1	1	1	-	1	1	1	1	-	-
FT Leonard Wood, MO	-	1	1	-	-	-	-	-	-	-	-
FT Leavenworth, KS	-	-	-	-	-	-	-	-	-	-	-
FT Riley, KS	-	1	-	-	-	1	1	-	1	-	-
SOUTH CENTRAL HSSA											
Brooke AMC	-	-	-	-	-	-	-	-	-	-	-
FT Hood, TX	-	-	-	-	1	-	-	-	-	-	-
FT Polk, LA	-	-	-	-	-	-	-	-	-	-	-
FT Sill, OK	-	-	-	-	-	-	-	-	-	-	-
Panama	2	3	11	1	2	2	3	3	11	-	-
SOUTHEAST HSSA											
Eisenhower AMC	-	-	-	-	-	2	-	-	1	-	-
FT Benning, GA	-	-	-	-	-	-	-	-	-	-	-
FT Bragg, NC	1	3	7	-	-	-	2	1	1	-	-
FT Campbell, KY	-	-	-	2	-	2	-	-	-	-	-
FT Jackson, SC	-	-	1	-	-	3	-	-	-	3	-
FT McClellan, AL	-	-	-	-	-	3	-	-	-	-	-
FT Rucker, AL	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	-	-	-	-	-	-	-	-	-	-	-
SOUTHWEST HSSA											
Wm Beaumont AMC	-	2	3	-	-	-	-	-	-	-	-
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	-	-	-	-	-	-	-	-	-	-	-
NORTHWEST HSSA											
Madigan AMC	1	2	2	-	-	1	2	-	2	-	-
FT Wainwright, AK	-	-	-	-	-	-	1	-	-	-	-
PACIFIC HSSA											
Tripler AMC	-	-	2	-	-	-	8	-	1	-	-
OTHER LOCATIONS											
Europe	4	2	4	-	1	-	2	3	1	-	-
Korea	1	-	2	-	-	-	-	-	-	-	-
Total	**15**	**16**	**37**	**4**	**6**	**17**	**21**	**11**	**21**	**3**	**0**

* Based on date of onset.

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

Date of Report: 7-Sep-95

TABLE II. Cases of notifiable sexually transmitted diseases, United States Army. August, 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
NORTH ATLANTIC HSSA														
Walter Reed AMC	3	38	8	31	6	27	-	3	-	2	1	5	1	10
Aberdeen Prov. Ground	3	29	1	16	-	-	-	-	-	1	2	13	-	1
FT Belvoir, VA	-	13	-	10	-	2	-	1	-	-	-	-	-	3
FT Drum, NY	2	55	1	27	1	9	-	-	-	-	-	15	-	-
FT Eustis, VA	-	10	-	7	-	-	-	-	-	-	-	-	-	-
FT Knox, KY	7	150	5	47	5	46	-	-	-	1	-	-	-	-
FT Lee, VA	2	33	3	30	-	1	-	1	-	-	-	1	-	-
FT Meade, MD	-	-	-	-	-	-	-	-	-	-	-	-	-	-
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CENTRAL HSSA														
Fitzsimons AMC	-	31	-	7	-	2	-	-	-	1	-	-	-	2
FT Carson, CO	13	193	10	93	2	51	-	-	-	-	24	222	-	4
FT Leonard Wood, MO	1	33	1	25	1	6	-	2	-	-	2	29	-	2
FT Leavenworth, KS	1	4	-	1	-	4	-	-	-	-	-	-	-	-
FT Riley, KS	-	76	-	15	-	2	-	2	-	-	-	-	-	-
SOUTH CENTRAL HSSA														
Brooke AMC	-	1	-	-	-	-	-	-	-	-	-	-	-	-
FT Hood, TX	-	329	-	159	-	16	-	3	-	8	-	58	-	2
FT Polk, LA	13	30	3	12	-	2	-	-	-	-	-	-	-	-
FT Sill, OK	1	55	6	71	1	5	-	-	-	-	2	26	1	8
Panama	1	1	-	8	-	7	-	6	-	-	-	-	-	3
SOUTHEAST HSSA														
Eisenhower AMC	7	61	5	32	3	25	-	2	-	-	-	2	-	3
FT Benning, GA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Bragg, NC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Campbell, KY	-	201	-	46	-	17	-	1	-	-	-	119	-	-
FT Jackson, SC	15	128	7	39	-	23	-	-	-	1	-	1	-	6
FT McClellan, AL	1	26	3	13	-	2	-	-	-	-	-	-	-	-
FT Rucker, AL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	-	68	-	58	-	19	-	-	-	1	-	92	-	9
SOUTHWEST HSSA														
Wm Beaumont AMC	17	107	-	13	-	4	-	-	-	-	-	-	-	3
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NORTHWEST HSSA														
Madigan AMC	-	-	-	-	-	-	-	-	-	-	-	-	-	1
FT Wainwright, AK	-	23	-	9	-	-	-	-	1	2	-	-	-	-
PACIFIC HSSA														
Tripler AMC	27	144	11	58	16	92	-	-	-	-	-	-	1	3
OTHER LOCATIONS														
Europe	-	42	-	4	-	1	-	-	-	-	-	-	-	5
Korea	1	21	1	12	1	5	-	-	-	1	-	-	-	5
Total	**115**	**1902**	**65**	**843**	**36**	**368**	**0**	**21**	**1**	**18**	**31**	**583**	**3**	**70**

* Reports are included from main and satellite clinics. Not all sites reporting. Date of Report: 7-Sep-95

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

TABLE III. Cases of notifiable heat injuries reported through Medical Surveillance System.*

Reporting MTF/Post**	Mar-95	Apr-95	May-95	Jun-95	Jul-95	Aug-95	Total
NORTH ATLANTIC HSSA							
Walter Reed AMC	-	-	-	-	-	-	0
Aberdeen Prov. Ground	-	-	-	-	-	-	0
FT Belvoir, VA	-	-	1	-	-	-	1
FT Drum, NY	-	-	-	4	-	-	4
FT Eustis, VA	-	-	-	-	-	-	0
FT Knox, KY	-	-	-	-	-	-	0
FT Lee, VA	-	-	1	1	2	1	5
FT Meade, MD	-	-	-	-	-	-	0
USMA, West Point, NY	-	-	-	-	-	-	0
CENTRAL HSSA							
Fitzsimons AMC	-	-	-	-	-	-	0
FT Carson, CO	-	-	-	-	-	-	0
FT Leonard Wood, MO	-	-	-	-	-	3	3
FT Leavenworth, KS	-	-	-	-	-	-	0
FT Riley, KS	-	-	-	-	11	-	11
SOUTH CENTRAL HSSA							
Brooke AMC	-	-	-	-	-	-	0
FT Hood, TX	-	-	5	-	-	-	5
FT Polk, LA	-	2	2	-	1	-	5
FT Sill, OK	-	-	-	-	18	1	19
Panama	-	-	-	2	-	-	2
SOUTHEAST HSSA							
Eisenhower AMC	-	-	-	-	-	-	0
FT Benning, GA	-	-	6	6	9	5	26
FT Bragg, NC	-	-	-	1	5	2	8
FT Campbell, KY	-	-	-	-	-	-	0
FT Jackson, SC	-	-	-	-	-	-	0
FT McClellan, AL	-	-	-	-	-	1	1
FT Rucker, AL	-	-	-	-	1	2	3
FT Stewart, GA	-	-	-	-	-	-	0
SOUTHWEST HSSA							
Wm Beaumont AMC	-	-	-	-	-	-	0
FT Huachuca, AZ	-	-	-	-	-	-	0
FT Irwin, CA	-	-	-	-	-	-	0
NORTHWEST HSSA							
Madigan AMC	-	-	-	-	-	-	0
FT Wainwright, AK	-	-	-	-	-	-	0
PACIFIC HSSA							
Tripler AMC	-	-	1	-	-	-	1
OTHER LOCATIONS							
Europe	-	-	-	-	-	-	0
Korea	-	-	-	-	-	1	1
Total	**0**	**2**	**16**	**14**	**47**	**16**	**95**

* Based on date of onset. Active duty Army only.

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

Date of Report: 7-Sep-95

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2) Inflammation and cellular infiltration around hairs that have penetrated the skin, conjunctiva, or other parts of the tegument.

3) Secondary infections following (1) or (2).

4) Allergic phenomena in individuals who have been sensitized by previous exposure to the same lepidopteran (butterfly and moth) species.[1]

Oral administration of antihistamines to patients experiencing urticarial dermatitis from caterpillars will help relieve the itching and burning sensation. Acute urticarial lesions may be further relieved by application of topical corticosteroids, which reduce the intensity of the inflammatory reaction.[2] Allen et al. reported good results with desoximetasone gel applied twice daily to the affected area.[3]

The dermatitis outbreak in Heidelberg emphasizes that exposure to the urticating hairs of Lepidoptera may not always occur from direct physical contact with the caterpillar. Other avenues of exposure, such as the wind, should be considered when investigating possible causes for a large-scale outbreak of acute dermatitis.

References:

1) Peters, W. A Colour Atlas of Arthropods in Clinical Medicine. Wolfe Publishing, Ltd., London. 1992.
2) Goddard, J. Physicians Guide to Arthropods of Medical Importance. CRC Press Inc., Boca Raton. 1993.
3) Allen, V.T., Miller, O.F. III, Tyler, W.B. Gypsy Moth caterpillar dermatitis - revisited. J Amer Acad Dermatol, 1991, 24, 979.

Editorial comment submitted by R Wells and ES Evans, Jr., Ph.D., Occupational Health Sciences, US Army Center for Health Promotion and Preventive Medicine. Aberdeen Proving Ground, MD 21010-5422

Report from the Field

Hemorrhagic Fever With Renal Syndrome, Korea

On 28 Jun 1994, a 19 year old soldier from an armor unit stationed with the 2D Infantry Division in South Korea presented to his troop medical clinic three days after returning from a field exercise. He complained of fever, chills, back pain, and headache. After conservative treatment failed to relieve his symptoms, and generalized edema developed, he was evacuated to the 121 General Hospital in Seoul. His condition rapidly deteriorated, he developed multi-system organ failure and died on 1 Jul 1994. Hemorrhagic fever with renal syndrome (HFRS) was diagnosed postmortem, with blood and tissue samples positive for infection with Hantaan virus.

This case was the first of five to occur in US soldiers during the summer of 1994, with three more infections documented in Nov-Dec 1994. While the first case was fatal, the remaining seven cases were mild to moderate, with all demonstrating fever > 101° F, thrombocytopenia, and a variety of nonspecific symptoms such as malaise, headache and muscle aches.

Questioning of the cases revealed that all had field experience exposure prior to onset of illness. The first five cases trained in the same area, with the remaining three having exposure at different sites in the same range complex. Due to an unusually dry monsoon season that year, training areas were extremely dusty, and all of the infected soldiers

reported severe dust exposure.

A questionnaire survey of members of the affected units showed no identifiable differences in such risk factors as personal hygiene, dust and tall grass exposure, and whether they slept on the ground. A serosurvey performed on 330 soldiers from the two exposed armor units revealed only one case that was previously undetected. The soldier was Korean male, and his serology was consistent with a previously acquired infection, probably during childhood. These results are similar to those seen after an outbreak in Marines in 1986 when >2000 sera were tested.

Rodent trapping was performed in five training areas, with 0-30% seropositivity rates found. The results of the rodent surveys are useful in demonstrating the presence of virus infected rodents, but the threat to humans at these sites cannot be quantified with this information.

A vaccinia-vectored vaccine has been developed at USAMRIID against the Hantaan virus, and phase II trials are scheduled to begin in Oct 1995 with soldiers from the 2D Infantry Division, Korea.

Submitted by JA Pavlin, MD, Preventive Medicine Department, Medical Division, US Army Medical Research Institute of Infectious Diseases, Fort Detrick, MD 21702-5011

Editorial comment: Epidemic Hemorrhagic fever is considered a major public health problem in central and southern China with about 100,000 - 200,000 cases per year. In rural areas of Korea, approximately 100 - 800 cases are hospitalized each year.[1] The threat to military forces has been well documented with infections associated with trench warfare and bivouacs in open areas.

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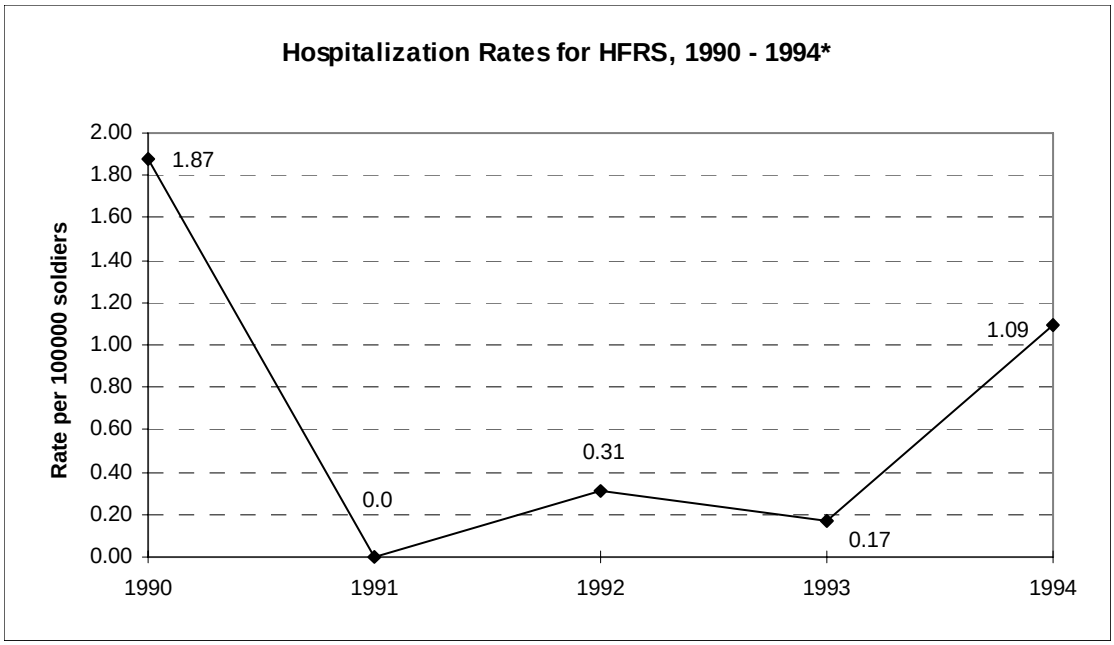
Surveillance Trends



* *Active Duty Army only.*

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Hemorrhagic fever with renal syndrome (HFRS) is known to be caused by hantaviruses capable of infecting a variety of rodent species. Human disease depends on intimate contact with rodents such as may occur in agricultural areas with high human and rodent population densities, during military campaigns or exercises, or in crowded urban housing.[2] HFRS epidemics occur in rural settings during the early summer (during harvest) and the late fall (with movement of rodents into houses at the onset of cold weather). Transmission is from rodent to human through contact with infected rodent secretions or airborne transmission by infected dust particles. There is no evidence for person to person spread.

Early clinical signs of disease include conjunctival injection, prostration, headache, abdominal pain, anorexia and vomiting. The incubation period is usually 12 - 16 days following exposure. Extreme vascular instability with shock, oliguria or anuria, and bleeding are characteristic of severe HFRS. Although a self-limited episode of acute renal failure following shock is usual, kidney function may rapidly deteriorate requiring dialysis. Case fatality rates of about 7% can be expected in China and Korea.

Preventive measures include eradicating rodents from houses and other buildings in endemic areas and minimizing personal and environmental exposure to wild rodents. However, avoiding direct contact with rodents may only have a marginal effect due to airborne transmission. Therefore, vaccination of selected populations may be the best prospect for control.

References:

1) Benenson, AS (ed). Control of Communicable Diseases in Man, 15th edition. American Public Health Association, 1990, p 194-196.
2) Strickland GT. Hunter's Tropical Medicine, 7th edition. W.B. Saunders Company, 1991. p 251-254.

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.

DEPARTMENT OF THE ARMY
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