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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.*

USACEPMM

Epidemiologic report**Vivax Malaria in US Forces - Korea**

As of 30 September 1996, ten cases of vivax malaria were diagnosed and treated at the 121<sup>st</sup> General Hospital at Yongsan Garrison, Seoul, Korea (see map on page 3). The first case, a Korean soldier assigned to the United Nations Command (UNC) Security Battalion Joint Security Area (JSA) at Panmunjom, was admitted to the 121<sup>st</sup> General Hospital on 20 June. On 28 June, an investigation by preventive medicine (PM) specialists from the 5<sup>th</sup> Medical Detachment (Entomology) and the 168<sup>th</sup> Medical Battalion (AS) revealed a significant mosquito problem at the site.

In late June and mid-July, two additional cases were diagnosed in Korean soldiers assigned to the UNC Security Battalion at Panmunjom. Primary health care providers near the Demilitarized Zone (DMZ) were alerted to the vivax malaria threat. In late July, the summer monsoons produced heavy flooding near the DMZ. No additional cases were diagnosed during late July or early August.

During the last week of August, two cases were diagnosed in US soldiers: one was assigned to the JSA at Panmunjom; the other was a PM technician who had conducted human bite mosquito collections at the JSA. During the first week of September, five US soldiers were admitted to the 121<sup>st</sup> General Hospital with vivax malaria. All had trained north of the Imjin River near the JSA.

In response, the USFK Surgeon recommended that soldiers assigned or training north of the Imjin River take chloroquine for chemoprophylaxis and primaquine for terminal prophylaxis at the end of their exposure. The USFK Blood Center was notified to ensure that the blood supply was adequately protected. On 6 September, the 18<sup>th</sup> MEDCOM Commander requested epidemiologic consultation (EPICON) to assist in developing a long term (3-5 year) strategy for malaria prevention. A multidisciplinary team representing USACHPPM, WRAIR, and the Fort Drum medical activity traveled to Korea in response to the request.

The USFK Surgeon's recommendation to begin chemoprophylaxis was implemented, and approximately 3,900 soldiers are currently on weekly chloroquine prophylaxis. Mosquito collections reveal declining populations. It is estimated that malaria transmission risk will terminate by the end of October.

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

*Submitted by MAJ WL Novakowski, MC, Preventive Medicine Consultant, 18th MEDCOM, Korea.*

**Editorial comments:** Prior to 1979, *Plasmodium vivax* malaria was endemic in the ROK. During the Korean War, the US Army sustained more than 3000 malaria cases. In the 1960s and early 1970s, hundreds to thousands of cases were reported annually. In response, the World Health Organization and the ROK implemented aggressive malaria prevention programs that included systematic case detection, radical treatment, and vector control in rural areas. These efforts were successful, and no cases were reported from Korea between 1979 and 1993.

In 1993, *Plasmodium vivax* malaria re-emerged in the ROK when a single case was reported in a Korean soldier. In 1994, 25 cases were reported: 17 among Korean soldiers, 7 among civilians, and 1 in a US soldier. In 1995, 107 malaria cases were reported: 88 among ROK soldiers and the remainder among civilians.

Through 1996, malaria incidence has continued to accelerate. To date, the Republic of Korea has recorded 157 cases of vivax malaria among

soldiers and 40 cases among civilians. All cases were associated with exposure to a band ten kilometers wide extending 100 kilometers along the western portion of the DMZ.

To date this year, ten cases of vivax malaria have been diagnosed at the 121<sup>st</sup> General Hospital in Korea. In August, an additional case was diagnosed in Omaha, Nebraska, in an Army veteran who left Korea in February 1996 and had no other pertinent travel history.

Patients with *P. vivax* malaria typically present with nonspecific symptoms of malaise, headache, and nausea. A more characteristic feature is fever, sweats, and chills that recur in cycles with distinct periodicity. In young, otherwise healthy adults, the infection tends to be debilitating but not life threatening. The time from the infective bite to the onset of symptoms is typically 13-17 days; however, incubation times as long as 8-12 months have been reported from northern and central Asia. There have been no well documented long incubation cases in Korea, although cases have

*Continued on page 8*



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

September, 1996

Reporting MTF/Post**	Total number of reports submitted Sep, 1996	Environmental Injuries			Viral Hepatitis			Malaria	Varicella	
		Active Duty		CO intox.	A	B	C	Active Duty	Active Duty	Other Adult
		Heat	Cold							
		Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996
<b>NORTH ATLANTIC RMC</b>										
Walter Reed AMC	24	1	-	-	1	1	-	1	4	1
Aberdeen Prov. Ground	5	1	3	-	-	-	-	-	-	-
FT Belvoir, VA	52	-	-	-	1	-	-	-	-	-
FT Bragg, NC	15	17	7	-	-	-	-	3	-	-
FT Drum, NY	9	6	21	-	-	1	-	1	5	-
FT Eustis, VA	36	1	-	-	1	-	-	-	-	-
FT Knox, KY	17	-	2	-	1	1	6	-	-	-
FT Lee, VA	15	-	-	-	-	-	-	-	-	-
FT Meade, MD	2	-	1	-	2	-	1	-	8	1
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-
<b>CENTRAL RMC</b>										
Fitzsimons AMC	-	-	-	-	-	-	-	1	-	-
<b>GREAT PLAINS RMC</b>										
Brooke AMC	-	-	-	-	-	-	-	1	-	-
FT Carson, CO	72	-	32	-	-	4	-	-	1	-
FT Hood, TX	-	2	1	-	1	3	-	-	6	-
FT Leavenworth, KS	10	-	-	-	-	-	-	-	-	-
FT Leonard Wood, MO	13	-	2	-	1	1	-	-	16	3
FT Polk, LA	-	-	-	-	-	-	-	-	-	-
FT Riley, KS	60	1	-	-	-	-	-	-	-	-
FT Sill, OK	-	4	-	-	4	5	3	-	-	-
Panama	25	3	-	-	4	4	3	-	-	1
<b>SOUTHEAST RMC</b>										
Eisenhower AMC	37	2	-	-	-	2	-	-	2	-
FT Benning, GA	-	8	-	-	-	-	-	-	9	-
FT Campbell, KY	41	2	-	-	-	-	-	-	-	-
FT Jackson, SC	-	-	-	-	-	-	-	-	-	-
FT McClellan, AL	8	-	1	-	-	1	-	-	1	-
FT Rucker, AL	1	4	-	-	-	-	-	-	-	-
FT Stewart, GA	-	-	-	-	-	1	-	-	-	-
<b>SOUTHWEST RMC</b>										
Wm Beaumont AMC	67	-	-	-	1	1	-	-	2	-
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	8	6	-	-	-	1	-	-	-	-
<b>NORTHWEST RMC</b>										
Madiqan AMC	-	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	-	-	81	-	-	-	-	-	-	-
<b>PACIFIC RMC</b>										
Tripler AMC	29	-	1	-	1	1	-	1	-	-
<b>OTHER LOCATIONS</b>										
Europe	67	1	-	-	1	4	2	4	5	1
Korea	9	1	1	-	-	3	-	7	6	-
<b>Total</b>	<b>622</b>	<b>60</b>	<b>153</b>	<b>0</b>	<b>19</b>	<b>34</b>	<b>15</b>	<b>19</b>	<b>65</b>	<b>7</b>

\* Based on date of onset.

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

Date of Report: 7-Oct-96

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

September, 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
<b>NORTH ATLANTIC RMC</b>											
Walter Reed AMC	2	2	2	-	3	1	5	9	1	-	4
Aberdeen Prov. Ground	-	-	-	-	-	-	-	-	-	-	-
FT Belvoir, VA	2	6	3	3	6	11	1	5	-	-	-
FT Bragg, NC	3	4	12	3	2	7	5	-	1	-	-
FT Drum, NY	2	-	-	-	-	-	-	-	-	-	-
FT Eustis, VA	-	-	1	-	1	1	-	1	2	-	-
FT Knox, KY	-	1	1	-	-	-	-	-	-	-	-
FT Lee, VA	-	-	-	-	-	-	-	-	-	-	-
FT Meade, MD	-	2	3	2	1	1	-	-	-	-	2
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-
<b>CENTRAL RMC</b>											
Fitzsimons AMC	-	-	-	-	1	-	-	-	-	-	-
<b>GREAT PLAINS RMC</b>											
Brooke AMC	-	-	-	-	-	-	-	-	-	-	-
FT Carson, CO	1	-	2	1	-	-	1	-	1	-	-
FT Hood, TX	-	-	-	-	-	-	-	-	-	-	-
FT Leavenworth, KS	-	-	-	1	-	-	1	1	-	-	1
FT Leonard Wood, MO	-	-	3	-	-	-	-	-	-	-	-
FT Polk, LA	-	-	-	-	-	-	-	-	-	-	-
FT Riley, KS	-	-	-	-	-	-	-	-	-	-	-
FT Sill, OK	-	-	-	-	-	-	-	-	-	-	-
Panama	-	2	16	3	-	7	1	3	15	-	1
<b>SOUTHEAST RMC</b>											
Eisenhower AMC	1	-	-	-	-	1	-	-	-	-	1
FT Benning, GA	-	-	-	-	-	-	-	-	-	-	-
FT Campbell, KY	1	-	-	-	-	2	4	3	2	-	1
FT Jackson, SC	-	-	1	-	-	-	-	-	-	1	1
FT McClellan, AL	-	-	-	-	1	-	-	-	-	-	-
FT Rucker, AL	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	1	-	1	-	-	-	-	-	-	-	-
<b>SOUTHWEST RMC</b>											
Wm Beaumont AMC	1	2	2	-	-	-	-	-	-	-	-
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	-	-	-	-	-	-	-	-	-	-	-
<b>NORTHWEST RMC</b>											
Madiqan AMC	-	-	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	-	-	-	-	-	-	1	-	-	-	-
<b>PACIFIC RMC</b>											
Tripler AMC	1	-	3	1	-	-	7	6	7	-	2
<b>OTHER LOCATIONS</b>											
Europe	11	11	14	-	-	-	4	6	3	4	4
Korea	-	1	-	-	-	-	-	-	-	3	2
<b>Total</b>	<b>26</b>	<b>31</b>	<b>64</b>	<b>14</b>	<b>15</b>	<b>31</b>	<b>30</b>	<b>34</b>	<b>32</b>	<b>8</b>	<b>19</b>

\* Based on date of onset.

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

Date of Report: 7-Oct-96

**TABLE II. Cases of notifiable sexually transmitted diseases, United States Army  
September, 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
<b>NORTH ATLANTIC RMC</b>														
Walter Reed AMC	1	62	1	30	2	33	2	42	-	2	-	1	-	2
Aberdeen Prov. Ground	2	11	1	11	-	12	1	2	-	-	-	-	-	-
FT Belvoir, VA	12	46	-	-	2	12	-	1	-	-	-	-	-	-
FT Bragg, NC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Drum, NY	3	52	-	17	3	53	2	13	-	-	-	-	-	-
FT Eustis, VA	11	54	-	-	1	18	-	-	-	-	-	-	-	-
FT Knox, KY	-	94	-	-	4	44	1	43	-	-	-	2	-	-
FT Lee, VA	10	70	-	1	5	34	-	2	-	-	-	-	-	-
FT Meade, MD	-	15	-	18	-	3	-	16	-	1	-	-	-	-
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>CENTRAL RMC</b>														
Fitzsimons AMC	-	1	-	-	-	-	-	-	-	-	-	1	-	-
<b>GREAT PLAINS RMC</b>														
Brooke AMC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Carson, CO	17	214	18	210	9	70	-	22	-	-	-	1	-	-
FT Hood, TX	-	231	-	81	-	75	-	30	-	2	-	-	-	2
FT Leavenworth, KS	2	14	-	-	1	7	-	3	-	-	-	-	-	-
FT Leonard Wood, MO	4	61	-	35	3	19	-	2	-	-	-	-	-	-
FT Polk, LA	-	23	-	-	-	12	-	2	-	-	-	-	-	-
FT Riley, KS	25	104	-	-	4	28	-	2	-	-	-	-	-	1
FT Sill, OK	-	106	-	33	-	58	-	15	-	-	-	-	-	7
Panama	1	75	-	-	-	3	-	6	-	-	-	-	-	11
<b>SOUTHEAST RMC</b>														
Eisenhower AMC	11	115	-	1	3	47	3	61	-	2	-	-	-	1
FT Benning, GA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Campbell, KY	8	311	-	-	3	107	-	20	-	3	-	-	-	1
FT Jackson, SC	-	278	-	-	-	15	-	11	-	-	-	-	-	3
FT McClellan, AL	-	19	-	-	3	15	-	-	-	1	-	-	-	-
FT Rucker, AL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	-	14	-	24	-	11	-	7	-	1	-	-	-	2
<b>SOUTHWEST RMC</b>														
Wm Beaumont AMC	17	158	-	-	-	18	4	57	-	-	1	2	-	-
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	-	10	-	-	-	7	-	2	-	-	-	-	-	-
<b>NORTHWEST RMC</b>														
Madigan AMC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	-	21	-	-	-	2	-	3	-	-	-	-	-	-
<b>PACIFIC RMC</b>														
Tripler AMC	18	153	-	-	2	33	4	64	-	-	-	2	-	-
<b>OTHER LOCATIONS</b>														
Europe	-	102	-	6	-	33	-	10	-	-	1	1	-	2
Korea	1	12	-	-	-	4	-	5	-	-	-	-	-	3
<b>Total</b>	<b>143</b>	<b>2426</b>	<b>20</b>	<b>467</b>	<b>45</b>	<b>773</b>	<b>17</b>	<b>441</b>	<b>0</b>	<b>12</b>	<b>2</b>	<b>10</b>	<b>0</b>	<b>35</b>

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

Date of Report: 7-Oct-96

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

Report from the field**Diarrhea Outbreak – Croatia**

On 23 August 1996, a team from the 520<sup>th</sup> Theater Army Medical Laboratory (TAML) assisted in an investigation of an outbreak of acute diarrhea at a US military camp in Croatia. Records from the local aid station revealed that 81 individuals of approximately 2,200 soldiers and civilians present at the site sought treatment for acute diarrhea during the period 19 August to 26 August 1996.

Nine stool specimens from cases were submitted to the 520<sup>th</sup> TAML for culture and examination for ova and parasites. *Salmonella*, group D, were isolated from all nine specimens.

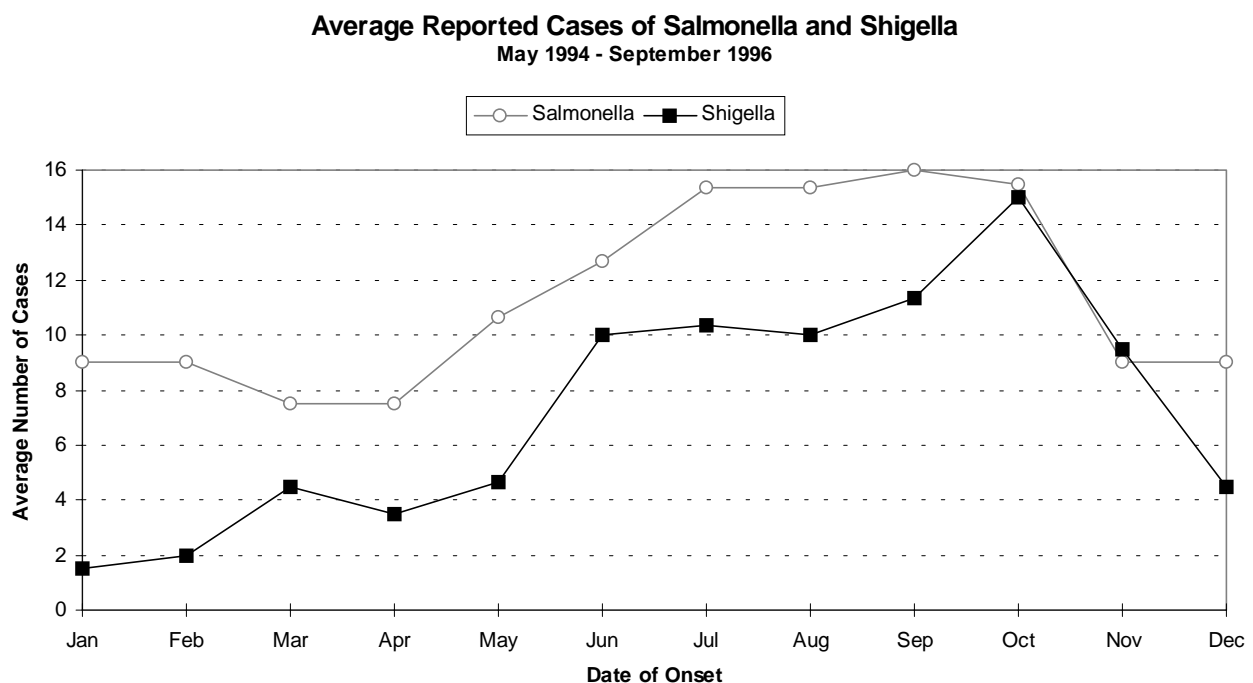
A questionnaire was completed by 29 (36%) of the 81 cases. Responses implicated a local dining facility as a potential source of contaminated food. Interviews revealed that the dining facility had recently opened; the opening of the new facility coincided with the onset of the

outbreak; the switch from the old to the new facility was done in a hasty manner; and some of the kitchen staff were not completely familiar with the new equipment and procedures. The medical team inspected the dining facility during food preparation and serving periods. Minor deficiencies in food storage and handling were noted. The team provided recommendations to decrease the potential for microbial contamination during food storage, preparation, and serving.

*Information provided by CPT AJ Intrepido, MSC, Environmental Science Officer, 520<sup>th</sup> Theater Army Medical Lab (TAML).*

**Editorial comment:** In 1994, there were 43,323 cases of salmonellosis reported in the United States with the highest incidence during the summer and early fall. Cases reported to the Army Medical Surveillance System show a similar

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Continued from page 3

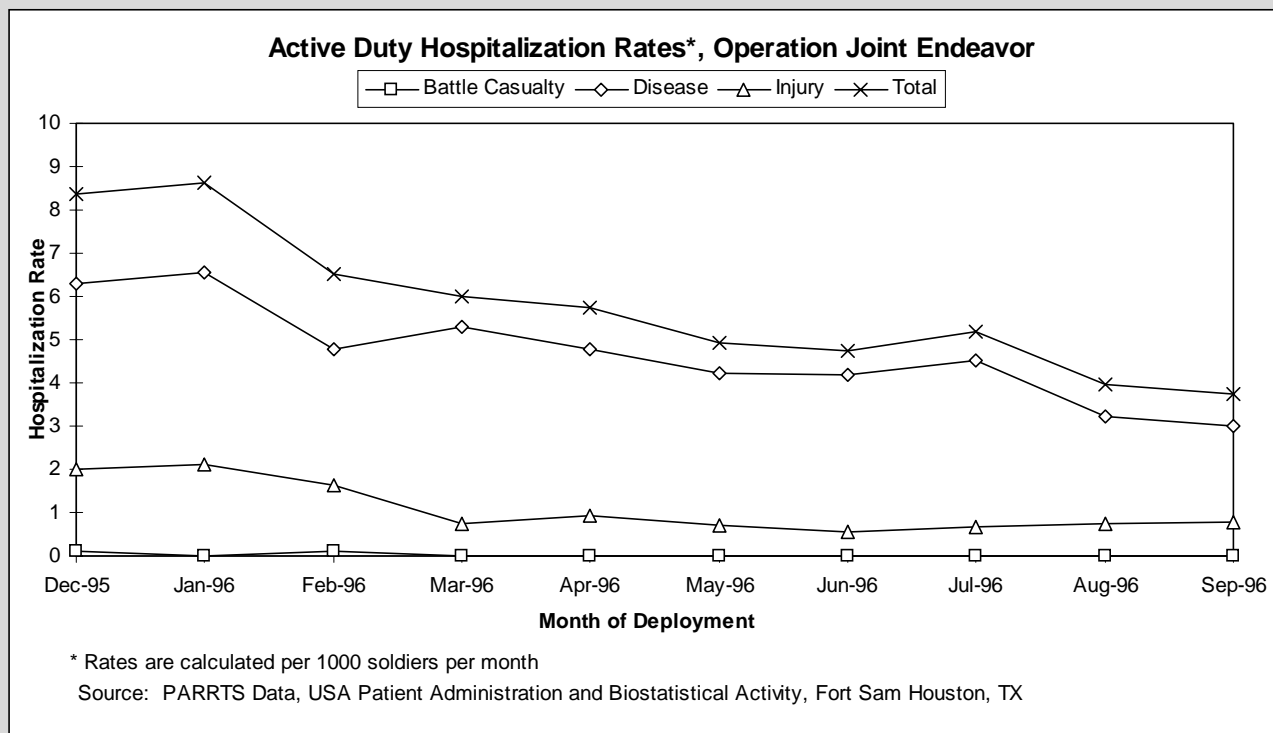
presented outside of the highest transmission season. Cases have been treated with the standard vivax malaria regimen: chloroquine x 3 days followed by primaquine x 14 days. There have been no reports of clinical failures or relapses.

The reemergence of malaria in Korea presents a challenging disease control problem. The Army routinely deploys soldiers to tropical areas where malaria transmission occurs year round. In these instances, the malaria prevention strategy is relatively straightforward: chemoprophylaxis against endemic malaria strain(s) and personal protective measures against competent mosquito vectors of malaria. In contrast, in Korea, the climate is temperate, malaria transmission is seasonal, and the deployment is relatively permanent. Thus far, all US and Korean cases have been confirmed as *P. vivax*, and all have responded to the standard therapeutic regimen.

Still, the prevention strategy in Korea must consider the ability of vivax malaria to initially present or to relapse months or years after a soldier leaves the country.

In summary, *Plasmodium vivax* malaria has reemerged as a significant medical threat in Korea. During the past three years, its incidence has accelerated. The reemerging *P. vivax* is chloroquine sensitive. US and other military forces operating north of the Imjin River are at greatest risk from late spring to early-fall, especially when operating out of doors during peak biting hours (midnight to approximately 3AM). A comprehensive malaria control strategy that incorporates larval and adult vector control, personal protective measures (e.g., DEET, pyrethroid sprays, permethrin impregnated uniforms and bednets), chemoprophylaxis, and case surveillance is under development for implementation prior to the 1997 malaria season.

### Surveillance Trends, Bosnia\*\*



\*\* Note: Due to the length of the deployment, monthly rates will now be graphed instead of weekly rates.



*Bosnia Update***TABLE III. Active Duty Hospitalization Rates\*, Operation Joint Endeavor, 11Dec95 - 7Oct96**

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	
<b>Infectious and Parasitic Diseases</b>	17.8	5.0	3.5	4.1	2.4	1.2	<b>3.9</b>	12.0	4.6	6.6	10.1	0.0	0.0	<b>5.2</b>	<b>4.1</b>
<b>Neoplasms</b>	2.2	0.3	0.5	0.5	0.4	1.2	<b>0.5</b>	12.0	2.3	0.0	0.0	2.7	0.0	<b>1.4</b>	<b>0.6</b>
<b>Endocrine, Nutritional, and Metabolic Disease and Immunity Disorders</b>	2.2	0.3	0.7	0.3	0.4	0.8	<b>0.5</b>	0.0	1.2	0.0	4.1	0.0	0.0	<b>1.0</b>	<b>0.6</b>
<b>Diseases of the Blood and Blood-Forming Organs</b>	0.0	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>	0.0	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>	<b>0.0</b>
<b>Mental Disorders</b>	6.7	3.9	2.8	1.3	0.8	1.2	<b>2.5</b>	0.0	4.6	7.9	0.0	2.7	3.0	<b>4.1</b>	<b>2.7</b>
<b>Diseases of the Nervous System and Sense Organs</b>	8.9	2.8	3.3	1.3	3.2	1.2	<b>2.7</b>	0.0	3.5	7.9	4.1	5.5	0.0	<b>4.5</b>	<b>2.9</b>
<b>Diseases of the Circulatory System</b>	0.0	1.6	2.2	4.6	5.6	3.2	<b>2.9</b>	0.0	0.0	1.3	0.0	5.5	3.0	<b>1.4</b>	<b>2.7</b>
<b>Diseases of the Respiratory System</b>	0.0	4.2	2.8	3.6	2.0	2.8	<b>3.2</b>	0.0	11.6	5.3	0.0	5.5	3.0	<b>5.9</b>	<b>3.5</b>
<b>Diseases of the Digestive System</b>	13.3	11.5	8.0	7.2	4.4	4.3	<b>8.2</b>	47.9	12.7	9.2	0.0	10.9	3.0	<b>9.3</b>	<b>8.3</b>
<b>Diseases of the Genitourinary System</b>	4.4	2.8	4.6	3.9	2.4	4.3	<b>3.7</b>	0.0	33.5	17.1	6.1	8.2	9.1	<b>17.6</b>	<b>5.3</b>
<b>Complications of Pregnancy, Childbirth, and the Puerperium**</b>	0.0	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>	0.0	3.5	1.3	2.0	0.0	0.0	<b>1.7</b>	<b>0.2</b>
<b>Diseases of the Skin and Subcutaneous Tissue</b>	6.7	3.6	1.3	2.1	1.2	0.8	<b>2.2</b>	0.0	1.2	0.0	4.1	2.7	0.0	<b>1.4</b>	<b>2.1</b>
<b>Diseases of Musculoskeletal System and Connective Tissue</b>	6.7	6.4	7.0	7.0	3.6	3.2	<b>6.0</b>	0.0	4.6	3.9	0.0	8.2	9.1	<b>4.5</b>	<b>5.8</b>
<b>Congenital Abnormalities</b>	2.2	0.3	0.5	0.3	0.4	0.0	<b>0.4</b>	0.0	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>	<b>0.3</b>
<b>Symptoms, Signs, and Ill-Defined Conditions</b>	6.7	8.1	6.5	7.0	5.2	3.9	<b>6.6</b>	71.9	33.5	10.5	16.2	8.2	3.0	<b>19.0</b>	<b>8.0</b>
<b>Injury and Poisoning</b>	13.3	16.5	11.9	11.1	7.2	3.6	<b>11.6</b>	36.0	25.4	6.6	6.1	8.2	0.0	<b>12.4</b>	<b>11.7</b>
<b>All Hospitalizations</b>	<b>91.1</b>	<b>67.1</b>	<b>55.5</b>	<b>54.2</b>	<b>39.2</b>	<b>31.6</b>	<b>54.8</b>	<b>179.8</b>	<b>142.3</b>	<b>77.7</b>	<b>52.7</b>	<b>68.3</b>	<b>33.4</b>	<b>89.4</b>	<b>58.8</b>

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

\*\* Includes normal delivery

*Continued from page 7*

seasonal trend (figure). Nontyphoid salmonellosis generally presents as a nonspecific gastroenteritis with fever, headache, nausea, vomiting, diarrhea, and abdominal cramps. The clinical course is usually mild and self limited in previously healthy, young adults.

Salmonellosis is one of the most common and ubiquitous bacterial diseases of man. While salmonella can be spread from person to person, salmonellosis is usually considered a foodborne disease since contaminated food is the usual mode of transmission to humans. Salmonella grow in the intestinal tracts of many domestic and wild animals including cattle, swine, and poultry. Meat, eggs, and the unpasteurized milk of infected animals are often contaminated. Outbreaks occur when widely distributed food items (e.g., milk, eggs, chicken) are contaminated at a single source (e.g., processing plant, kitchen of

a dining facility).

Salmonellosis, distributed worldwide, is a significant military medical threat, particularly to deployed forces. Prevention of salmonellosis during military operations depends on rigid compliance with basic food sanitation guidelines. Refrigeration should maintain temperatures that inhibit the growth of bacteria. Cooking should thoroughly heat animal-derived food items to ensure that temperatures throughout the items exceed bacteriacidal levels. Procurement, storage, preparation and serving procedures should preclude the potential for cross-contamination by equipment, utensils or human handlers. Hand washing discipline should be rigidly enforced among all who handle food, including cooks, servers, and diners. Finally, training and supervision of food service workers should establish and maintain high standards of sanitation and hygiene.

### 1996-97 Influenza Immunization Program

The annual influenza immunization program commenced 1 October 1996 and will extend through 31 March 1997.

The immunization is mandatory (unless medically contraindicated) for all active duty military and reservists on active duty for 30 days or more during the influenza season.

Vaccine is scheduled for delivery to the depot on 1 October (10 dose vials) and 1 November (50 dose vials).

Since the antigenic composition has changed, last year's vaccine will not be used for this year's program and should be appropriately destroyed.

Details of the program are specified in USAMEDCOM memorandum, subject: 1996-97 Influenza Immunization Program.

ARD Surveillance Update

<i>Legend</i>	
—	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 S1. Notifiable conditions reported through Medical Surveillance System, Jan-Sep 1996\***

Diagnosis	Jan '96	Feb '96	Mar '96	Apr '96	May '96	Jun '96	Jul '96	Aug '96	Sep '96	Total
Amebiasis	1	-	1	3	2	1	-	-	-	8
Anthrax	-	-	-	-	-	-	-	-	-	0
Arboviral infection, unspecified	-	-	-	-	-	-	-	-	-	0
Asbestosis	-	-	-	-	-	-	-	-	-	0
Botulism	-	-	-	-	-	-	-	-	-	0
Brucellosis	-	-	-	-	-	-	-	-	-	0
Campylobacteriosis	11	9	7	10	10	12	15	19	4	97
Carbon monoxide intoxication	-	-	-	-	-	-	-	-	-	0
Chancroid	-	-	-	-	-	-	-	-	-	0
Chemical agent exposure	-	-	1	-	-	-	-	-	-	1
Chlamydia	298	306	309	325	293	305	220	215	159	2430
Cholera	-	-	-	-	-	-	-	-	-	0
Coccidioidomycosis	-	-	-	-	-	-	-	-	-	0
Cold weather inj, unspecified	9	4	2	-	-	-	-	-	-	15
Cold weather inj, frostbite	100	21	4	-	-	-	-	-	-	125
Cold weather inj, hypothermia	-	-	-	-	-	-	-	-	-	0
Cold weather inj, immersion typ	13	2	-	-	-	1	-	-	-	16
Dengue fever	-	-	-	-	-	-	-	-	-	0
Diphtheria	-	-	-	-	-	-	-	-	-	0
Ehrlichiosis	-	-	-	1	-	-	-	-	-	1
Encephalitis	-	-	-	1	-	-	-	-	-	1
Giardiasis	6	2	7	5	4	8	9	6	4	51
Gonorrhea	107	84	70	100	89	94	87	88	56	775
Granuloma inguinale	-	-	-	-	-	1	-	-	-	1
Guillain-Barre Syndrome	-	-	1	-	1	-	-	-	-	2
Haemophilus influenzae, invasiv	-	-	-	-	-	-	-	-	-	0
Heat exhaustion	1	-	2	2	6	13	16	16	3	59
Heat stroke	-	1	1	1	7	8	2	3	2	25
Hemorrhagic fever	-	-	-	1	-	-	-	-	-	1
Hepatitis A, Acute	1	6	4	1	2	2	1	-	2	19
Hepatitis B, Acute	1	1	7	2	10	4	4	4	2	35
Hepatitis C, Acute	2	5	2	2	1	-	2	1	-	15
Hepatitis, unspecified	-	1	-	1	-	1	2	-	-	5
Herpes Simplex (genital)	68	59	59	55	45	63	34	41	17	441
Influenza	2	11	14	-	-	1	2	11	-	41
Influenza unspec.	-	-	-	-	-	-	-	-	-	0
Kawasaki syndrome	1	-	-	-	1	4	-	-	-	6
Lead poisoning	1	-	-	-	-	3	-	-	-	4
Legionellosis	-	-	-	-	-	-	-	2	-	2
Leishmaniasis, cutaneous	1	-	5	3	2	4	1	-	-	16
Leishmaniasis, mucocutanaeou	-	-	-	-	1	-	-	-	-	1
Leishmaniasis, unspecified	-	-	1	2	1	-	-	-	-	4
Leishmaniasis, visceral	-	-	-	-	-	-	-	-	-	0
Leprosy	-	-	-	-	-	-	-	-	-	0
Leptospirosis	-	-	-	-	-	-	-	-	-	0
Listeriosis	-	-	-	-	-	-	-	1	-	1
Lyme disease	-	-	-	1	-	4	2	1	1	9
Lymphogranuloma venereum	-	-	-	1	1	-	-	-	-	2

(Continued)

**TABLE S1. Notifiable conditions reported through Medical Surveillance System\* (continued).**

Diagnosis	Jan '96	Feb '96	Mar '96	Apr '96	May '96	Jun '96	Jul '96	Aug '96	Sep '96	Total
Malaria, falciparoum	1	-	-	3	3	-	1	2	-	10
Malaria, malariae	-	-	-	-	-	-	-	-	-	0
Malaria, ovale	-	-	-	-	-	-	-	-	-	0
Malaria, unspecified	-	-	-	-	-	1	-	1	-	2
Malaria, vivax	1	1	1	-	-	1	-	2	5	11
Measles	-	-	-	-	1	1	-	-	1	3
Meningitis, aseptic/viral	2	1	10	5	3	-	2	7	2	32
Meningitis, bacterial	2	-	1	3	1	1	1	1	-	10
Mercury intoxication	-	-	-	-	-	-	-	-	-	0
Mumps (adults only)	2	-	-	1	-	-	-	-	-	3
Mycobacterial infection, atypica	-	-	-	-	-	-	-	-	-	0
Pertussis	-	-	-	-	-	-	-	-	-	0
Plague	-	-	-	-	-	-	-	-	-	0
Pneumococcal pneumonia	-	-	-	-	-	-	-	-	-	0
Poliomyelitis	-	-	-	-	-	-	-	-	-	0
Psittacosis	-	-	-	-	-	-	-	-	-	0
Q fever	-	-	-	-	-	-	-	-	-	0
Rabies, human	-	-	-	-	-	-	-	-	-	0
Radiation injury	-	-	-	-	-	-	-	-	-	0
Relapsing fever	-	-	-	-	-	-	-	-	-	0
Reye's syndrome	-	-	-	-	-	-	-	-	-	0
Rhabdomyolysis	8	5	4	4	5	2	3	2	1	34
Rheumatic fever	-	-	-	-	-	-	-	-	-	0
Rift Valley fever	-	-	-	-	-	-	-	-	-	0
Rocky mountain spotted fever	-	1	1	1	-	-	-	1	1	5
Rubella	-	1	-	-	-	-	-	-	-	1
Salmonellosis	10	6	12	8	17	14	25	17	12	121
Schistosomiasis	-	-	-	-	-	-	-	-	-	0
Shigellosis	1	3	3	6	8	5	13	11	11	61
Smallpox	-	-	-	-	-	-	-	-	-	0
Syphilis, congenital	-	-	-	-	-	-	-	-	-	0
Syphilis, late (tertiary)	-	-	-	-	2	-	-	-	-	2
Syphilis, latent	-	1	3	2	2	-	-	-	2	10
Syphilis, primary/secondary	3	2	1	3	1	-	1	1	-	12
Syphilis, unspecified	5	2	-	6	2	9	3	3	-	30
Tetanus	-	-	-	-	-	-	-	-	-	0
Toxic shock syndrome	-	-	-	-	-	-	-	-	-	0
Toxoplasmosis	-	-	-	-	-	-	-	-	-	0
Trichinellosis	-	-	-	1	-	-	-	-	-	1
Trypanosomiasis, African	-	-	-	-	-	-	-	-	-	0
Trypanosomiasis, American	-	-	-	-	-	-	-	-	-	0
Tuberculosis, pulmonary	7	6	2	2	6	1	2	1	-	27
Tularemia	-	-	-	-	-	-	-	-	-	0
Typhoid fever	-	-	-	-	-	-	-	-	-	0
Typhus fever	-	-	-	-	-	-	-	-	-	0
Urethritis, non-specific	41	51	43	83	68	70	55	34	22	467
Vaccine adverse event report	-	1	22	-	-	2	-	-	-	25
Varicella, adult only	10	21	11	9	8	7	6	-	-	72
Yellow fever	-	-	-	-	-	-	-	-	-	0
<b>Total</b>	<b>716</b>	<b>614</b>	<b>611</b>	<b>654</b>	<b>603</b>	<b>643</b>	<b>509</b>	<b>491</b>	<b>307</b>	<b>5148</b>

\* Based on date of onset.

**TABLE S2. Reported heat and cold weather injuries, United States Army, \*  
January, 1996 - September, 1996**

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 RMC</b>												
Walter Reed AMC	-	-	1	-	-	-	-	-	-	-	-	-
Aberdeen Prov. Ground	1	-	-	-	-	-	-	-	-	-	3	-
FT Belvoir, VA	-	-	-	-	-	-	-	-	-	-	-	-
FT Bragg, NC	4	2	10	1	3	-	-	-	1	-	4	-
FT Drum, NY	6	-	-	-	14	-	-	-	9	1	-	-
FT Eustis, VA	-	-	1	-	-	-	-	-	-	-	-	-
FT Knox, KY	-	-	-	-	2	-	-	-	-	-	-	-
FT Lee, VA	-	-	-	-	-	-	-	-	-	-	-	-
FT Meade, MD	-	-	-	-	-	-	-	-	-	-	1	-
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-	-
<b>CENTRAL RMC</b>												
Fitzsimons AMC	-	-	-	-	-	-	-	-	-	-	-	-
<b>GREAT PLAINS RMC</b>												
Brooke AMC	-	-	-	-	-	-	-	-	-	-	-	-
FT Carson, CO	-	-	-	-	22	6	-	-	-	-	4	-
FT Hood, TX	1	-	1	-	-	-	-	-	-	-	-	1
FT Leavenworth, KS	-	-	-	-	-	-	-	-	-	-	-	-
FT Leonard Wood, MO	-	-	-	-	1	-	-	-	1	-	-	-
FT Polk, LA	-	-	-	-	-	-	-	-	-	-	-	-
FT Riley, KS	1	-	-	-	-	-	-	-	-	-	-	-
FT Sill, OK	4	-	-	-	-	-	-	-	-	-	-	-
Panama	1	-	-	-	-	-	-	-	-	-	-	-
<b>SOUTHEAST RMC</b>												
Eisenhower AMC	1	-	1	-	-	-	-	-	-	-	-	-
FT Benning, GA	2	-	6	-	-	-	-	-	-	-	-	-
FT Campbell, KY	1	-	1	-	-	-	-	-	-	-	-	-
FT Jackson, SC	-	-	-	-	-	-	-	-	-	-	-	-
FT McClellan, AL	-	-	-	-	-	1	-	-	-	-	-	-
FT Rucker, AL	4	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	-	-	-	-	-	-	-	-	-	-	-	-
<b>SOUTHWEST RMC</b>												
Wm Beaumont AMC	-	-	-	-	-	-	-	-	-	-	-	-
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	6	-	-	-	-	-	-	-	-	-	-	-
<b>NORTHWEST RMC</b>												
Madigan AMC	-	-	-	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	-	-	-	-	61	15	-	-	3	-	2	-
<b>PACIFIC RMC</b>												
Tripler AMC	-	-	-	-	-	-	-	-	1	-	-	-
<b>OTHER LOCATIONS</b>												
Europe	1	-	-	-	1	-	-	-	-	-	-	-
Korea	1	-	-	-	1	-	-	-	-	-	-	-
<b>Total</b>	<b>34</b>	<b>2</b>	<b>21</b>	<b>1</b>	<b>105</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>1</b>	<b>14</b>	<b>1</b>

\* Army active duty cases only.

\*\* Reports are included from parent and daughter clinics. Not all sites reporting.

Date of Report: 7-Oct-96

TABLE S3. Cases of notifiable sexually transmitted diseases, United States Army, Jan-Sep 1996\*

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 RMC</b>	9	11	6	37	22	-	8	-	7	2	7	17	4	13	13	12	1	-	-	1	-	-	-	1
Walter Reed AMC																								
Aberdeen Prov. Ground	-	5	1	5	10	-	1	-	11	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-
FT Belvoir, VA	12	14	5	15	-	-	-	-	3	3	3	3	1	1	-	-	-	-	-	-	-	-	-	-
FT Bragg, NC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Drum, NY	18	24	1	9	17	-	-	-	39	8	1	5	7	4	-	2	-	-	-	-	-	-	-	-
FT Eustis, VA	8	19	4	23	-	-	-	-	5	2	5	6	-	-	-	-	-	-	-	-	-	-	-	-
FT Knox, KY	28	20	4	42	-	-	-	-	27	9	1	7	23	3	1	16	-	-	-	-	1	-	-	1
FT Lee, VA	11	36	7	16	-	-	1	-	16	7	7	3	-	2	-	-	-	-	-	-	-	-	-	-
FT Meade, MD	1	2	4	8	7	-	11	-	-	-	2	1	4	2	4	6	-	-	-	1	-	-	-	-
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>CENTRAL RMC</b>	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Fitzsimons AMC																								
<b>GREAT PLAINS RMC</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brooke AMC																								
FT Carson, CO	86	60	9	59	192	-	18	-	48	7	3	12	5	5	3	9	-	-	-	-	-	-	-	1
FT Hood, TX	91	85	2	53	78	1	2	-	47	17	4	8	15	11	1	3	1	-	-	1	1	-	-	-
FT Leavenworth, KS	1	3	1	9	-	-	-	-	2	-	-	5	-	1	-	2	-	-	-	-	-	-	-	-
FT Leonard Wood, MO	8	18	2	33	25	-	11	-	7	5	3	4	1	-	-	2	-	-	-	-	-	-	-	-
FT Polk, LA	3	14	-	6	-	-	-	-	8	3	-	1	1	1	-	-	-	-	-	-	-	-	-	-
FT Riley, KS	35	26	6	34	-	-	-	-	16	7	-	5	1	1	-	-	-	-	-	-	-	-	-	-
FT Sill, OK	53	17	5	30	29	1	2	1	33	10	6	9	11	3	-	1	-	-	-	-	-	-	-	-
Panama	5	5	8	57	-	-	-	-	1	1	-	2	3	-	1	1	-	-	-	-	-	-	-	-
<b>SOUTHEAST RMC</b>	33	32	10	40	1	-	-	-	22	9	6	10	18	19	-	25	2	-	-	-	-	-	-	-
Eisenhower AMC																								
FT Benning, GA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Campbell, KY	56	148	2	105	-	-	-	-	67	23	4	12	18	1	-	1	2	-	-	1	-	-	-	-
FT Jackson, SC	9	265	1	5	-	-	-	-	6	7	1	1	-	10	1	-	-	-	-	-	-	-	-	-
FT McClellan, AL	3	6	3	7	-	-	-	-	2	2	7	4	-	-	-	-	-	-	1	-	-	-	-	-
FT Rucker, AL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	1	8	1	4	23	-	1	-	7	4	-	-	2	3	-	2	1	-	-	-	-	-	-	-
<b>SOUTHWEST RMC</b>	35	34	4	94	-	-	-	-	9	2	3	4	5	20	2	30	-	-	-	-	-	-	-	3
Wm Beaumont AMC																								
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	3	1	1	5	-	-	-	-	4	-	-	3	2	-	-	-	-	-	-	-	-	-	-	-
<b>NORTHWEST RMC</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Madigan AMC																								
FT Wainwright, AK	5	7	-	9	-	-	-	-	1	-	-	1	1	2	-	-	-	-	-	-	-	-	-	-
<b>PACIFIC RMC</b>	59	37	5	56	-	-	-	-	23	1	1	8	12	18	8	26	-	-	-	-	-	-	2	-
Tripler AMC																								
<b>OTHER LOCATIONS</b>	31	34	5	32	6	-	-	-	21	4	1	7	6	3	-	1	-	-	-	-	-	-	-	-
Europe																								
Korea	1	10	-	1	-	-	-	-	1	1	2	-	1	3	-	1	-	-	-	-	-	-	-	-
<b>Sub-Total</b>	<b>605</b>	<b>941</b>	<b>97</b>	<b>795</b>	<b>410</b>	<b>2</b>	<b>55</b>	<b>1</b>	<b>433</b>	<b>135</b>	<b>67</b>	<b>138</b>	<b>141</b>	<b>128</b>	<b>34</b>	<b>140</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>6</b>
<b>Total</b>	<b>1546</b>		<b>892</b>		<b>412</b>		<b>56</b>		<b>568</b>		<b>205</b>		<b>269</b>		<b>174</b>		<b>7</b>		<b>5</b>		<b>4</b>		<b>7</b>	

\* Active Duty refers to Army Active Duty only.

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

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

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