



MSMR

Medical Surveillance Monthly Report

Table of Contents

<i>Plasmodium vivax</i> malaria of Korean origin, 1997	2
Selected sentinel reportable diseases, July 1997	4
Selected sentinel reportable diseases, 2 year trends	5
Reportable sexually transmitted diseases, July 1997	6
Reportable sexually transmitted diseases, 2 year trends	7
<i>E.coli</i> O:157:H7, Fort Lewis	8
Adult Respiratory Distress Syndrome, Fort Lewis	9
<i>Shigella sonnei</i> , Fort Bragg, North Carolina	10
ARD surveillance update	11
HIV-2, Walter Reed Army Medical Center	12
Supplement #1: HIV-1 in the Army	13
HIV-1 testing program, 1985-1996	13
Status of HIV-1 infected patients	14
Prevalence of HIV-1, civilian applicants	15
Supplement #2: Reportable diseases	16
Sentinel reportable diseases, 1997(vs 1996)	17
Sentinel reportable STDs, 1997(vs 1996)	18
Force strength (March 1997)	19

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 Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE AUG 1997		2. REPORT TYPE		3. DATES COVERED 00-07-1997 to 00-08-1997	
4. TITLE AND SUBTITLE Medical Surveillance Monthly Report (MSMR). Volume 3, Number 5, July/August 1997				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Center for Health Promotion and Preventive Medicine, Armed Forces Health Surveillance Center (AFHSC), 2900 Linden Lane, Suite 200, Silver Spring, MD, 20910				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 20	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

Epicon report: update***Plasmodium vivax* Malaria of Korean Origin, 1997**

Background: *Plasmodium vivax* malaria re-emerged along the Demilitarized Zone (DMZ) in the Republic of Korea in 1993. In 1996, between June and September, twelve cases occurred among US soldiers in Korea; and at least two cases presented in the United States among soldiers who had served in Korea the previous transmission season.^{1,2}

In the late summer of 1996, a multi-disciplinary Epidemiologic Consultation (EPICON) team and Army preventive medicine authorities in Korea determined that the malaria risk to US troops was confined to areas north of the Imjin River. The team provided specific recommendations regarding, for example, mosquito surveillance and control, personal protective measures, troop education, and early recognition, diagnosis, and treatment of cases. The goal of the recommended control measures was to reduce the impact of malaria on US forces who lived and trained in the high risk region.² 18th Medical Command implemented the recommendations for the 1997 malaria season (routine chemoprophylaxis was not recommended nor initiated). This report summarizes the recent experience of US soldiers regarding *vivax* malaria of Korean origin.

Results: Malaria continues to threaten US forces who live, train, or travel north of the Imjin River. In 1997 to date, five cases (April: 1; July: 1;

Aug: 3) of *vivax* malaria have been reported among US soldiers in Korea. In addition, four cases (Fort Lewis: 2; Fort Bragg: 1; Fort Stewart: 1) have been diagnosed among soldiers who served in Korea during the 1996 malaria season. Thus, of 14 cases of malaria reported Armywide this year, nine are associated with service in Korea during 1996 or 1997.

Discussion: In healthy, nonimmune young adults, *P. vivax* of Korean origin causes a debilitating but not life threatening acute febrile illness. Korean strains of *P. vivax* have not shown resistance to standard antimalarial drugs (i.e., chloroquine, primaquine) — indeed, all recent cases among US soldiers have responded to standard treatment regimens.

Temperate-climate *vivax* malaria — which includes strains re-emerging in Korea — may have short (15-17 days) or long (6-9 months) incubation times. Thus, for example, troops infected late in a transmission season (September-October) may not clinically manifest their primary infections until the following spring or summer — when they may no longer be in Korea. Rapid diagnosis and treatment of malaria among soldiers (and recent Korean service veterans) is necessary to minimize personal debility, limit military operational disruption, and preclude the theoretical risk of autochthonous transmission in US civilian communities. Thus, it is

John F. Brundage, MD, MPH
Executive Editor

LTC Mark V. Rubertone, MD, MPH
Editor

Kimmie Kohlhasse, MS
Managing Editor

Prepared by the Medical Surveillance Activity, Directorate of Epidemiology and Disease Surveillance, United States Army Center for Health Promotion and Preventive Medicine. Inquiries regarding content or material to be considered for publication should be directed to the editor, Army Medical Surveillance Activity, Bldg. T-20, Rm 213, Washington DC, 20307-5100.

E-mail: "maj_mark_rubertone@wrsmtg-ccmail.army.mil"

Publishing office is the Executive Communications Division, U.S. Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, Maryland 21010-5422.

To be added to the mailing list, contact the Army Medical Surveillance Activity @ DSN 662-0471, Comm: (202) 782-0471.

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

imperative that health care providers worldwide include malaria in differential diagnoses of acute febrile illnesses among soldiers who are or were (within the past year) stationed in Korea.

The figure below shows cases of malaria (by species) diagnosed in soldiers during calendar years 1993-1997 (sources: IPDS and MSS). Although malaria is acquired outside the US, most cases present for diagnosis and treatment at medical facilities in the United States.

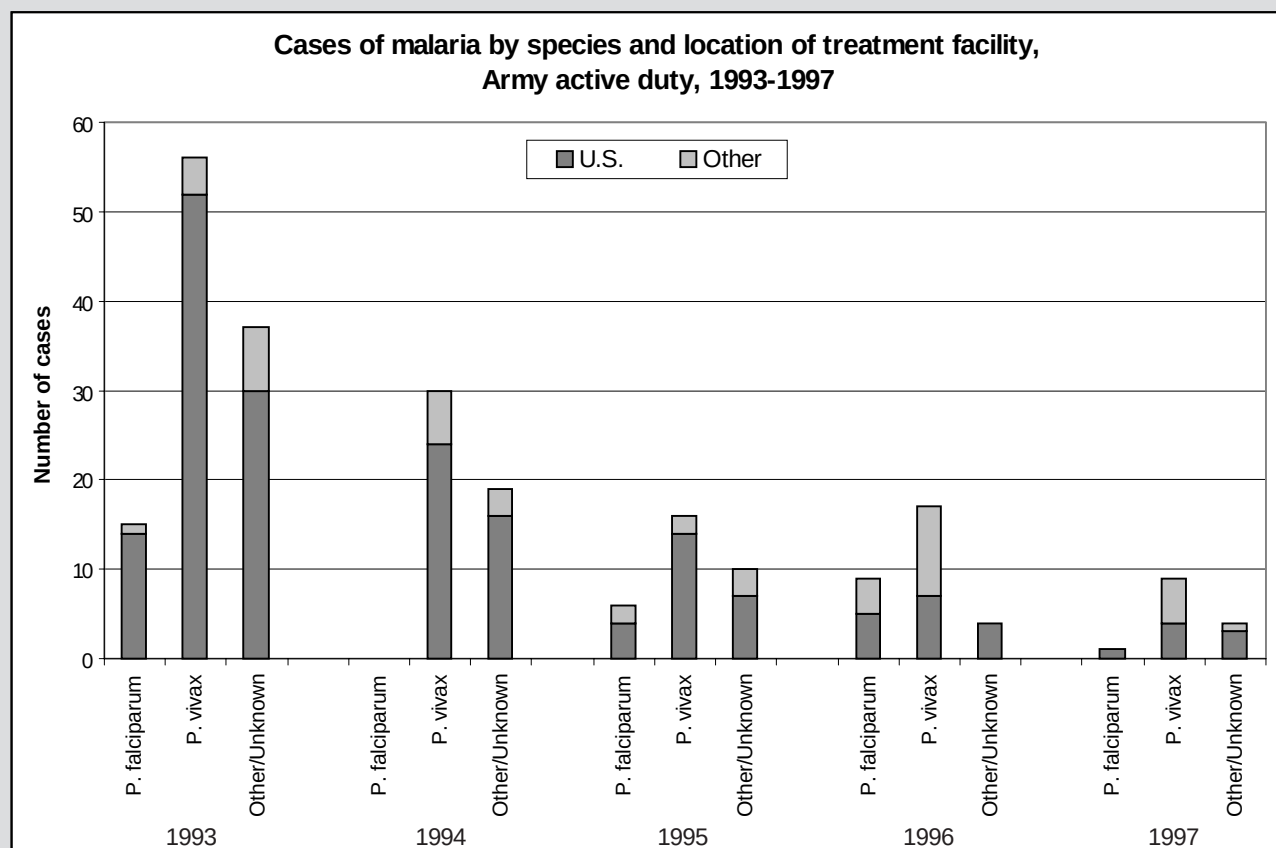
Malaria cases among soldiers should be thoroughly investigated and expeditiously reported through the Army's automated disease reporting system (MSS). Epidemiologic assessments of vivax malaria cases of possible Korean origin should include dates and locations of presumed exposures (e.g., north of Imjin River); exposures — other than in Korea — during military and personal

travels; personal protective measures during periods of significant exposures (e.g., DEET, permethrin, bednets, uniform wear); and, if applicable, prescribed chemoprophylactic regimens and compliance — in Korea (e.g., 1996) and elsewhere. Effective control of malaria in Korea depends significantly on Armywide efforts to detect, assess, diagnose, treat, and report all cases of Korean origin.

Information provided by Jeffrey Gunzenhauser, LTC, MC, Fort Lewis, Washington, and Brian Feighner, LTC, MC, 18th Medical Command, Korea, and Stephen Craig, LTC, MC, USACHPPM.

References

1. Vivax malaria in US forces, Korea. MSMR, 2:8(October), 1996, 2-3,8.
2. Craig, S, Ockenhouse, C, Evans, E, Keep, L, Hewitson, W, Bell, C. Epidemiology Consultation (EPICON) Report: Malaria in the ROK. September 1996.



**TABLE I. Selected sentinel reportable diseases, US Army medical treatment facilities*
July, 1997**

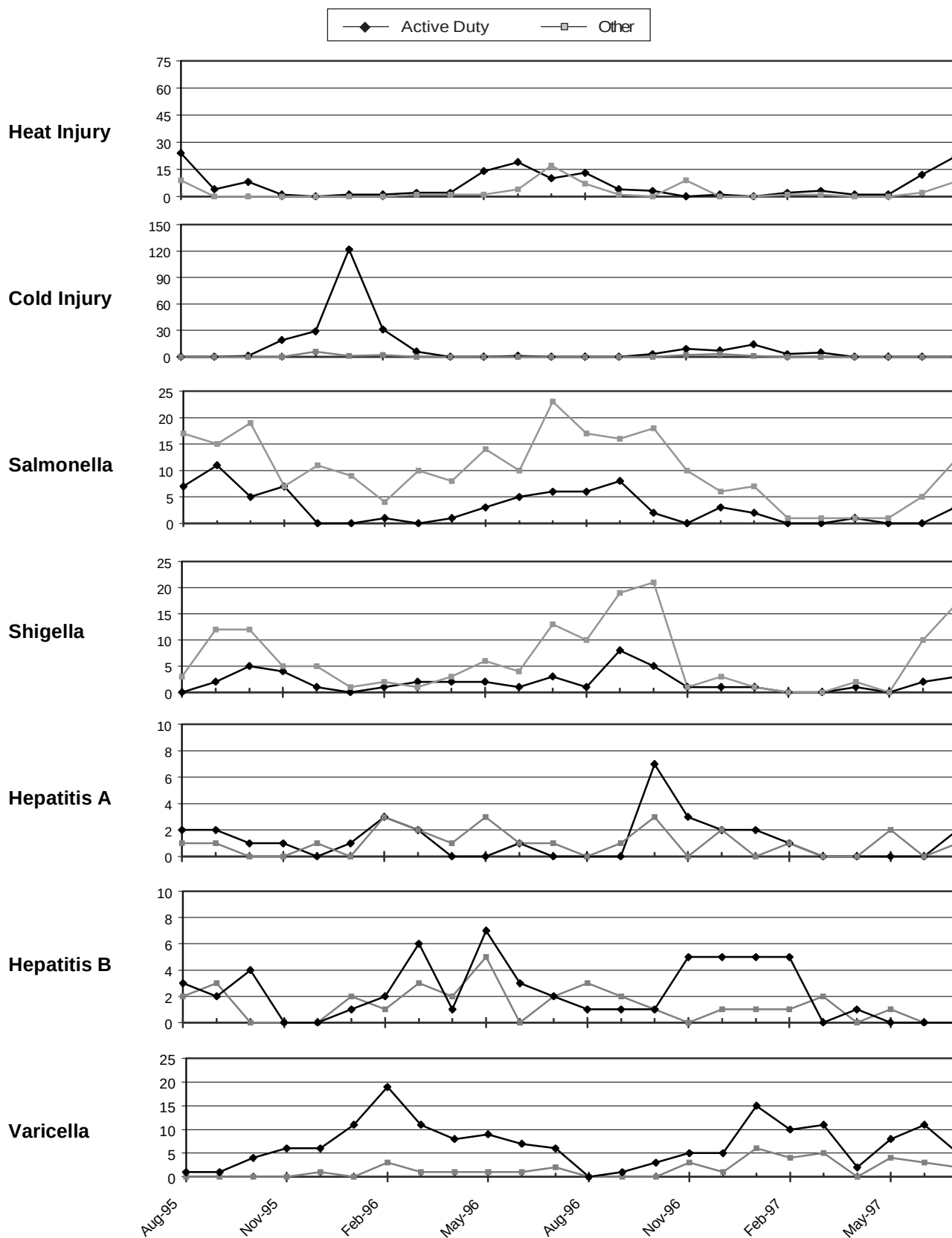
Reporting MTF/Post**	Total number of reports submitted July 1997	Environmental Injuries		Viral Hepatitis		Salmonellosis		Shigella		Varicella	
		Active Duty				Active Duty	Other	Active Duty	Other	Active Duty	Other Adult
		Heat	Cold	A	B						
		Cum. 1997	Cum. 1997	Cum. 1997	Cum. 1997	Cum. 1997	Cum. 1997	Cum. 1997	Cum. 1997	Cum. 1997	Cum. 1997
NORTH ATLANTIC RMC											
Walter Reed AMC	20	0	0	0	1	1	2	0	1	2	3
Aberdeen Prov. Ground, MD	9	1	0	0	0	0	0	0	0	0	0
FT Belvoir, VA	0	0	0	0	1	0	0	0	0	0	0
FT Bragg, NC	89	4	8	0	0	1	16	6	54	0	0
FT Drum, NY	0	0	1	0	0	0	0	0	0	4	0
FT Eustis, VA	40	7	0	1	0	0	2	0	3	3	0
FT Knox, KY	47	7	0	0	0	0	0	0	0	0	0
FT Lee, VA	0	0	0	0	0	0	0	0	0	0	0
FT Meade, MD	0	0	0	0	0	0	1	0	0	0	0
West Point, NY	0	0	0	0	0	0	0	0	0	0	0
GREAT PLAINS RMC											
Brooke AMC	3	1	0	3	0	1	1	0	4	0	0
FT Carson, CO	56	1	0	1	0	0	1	0	0	0	0
FT Hood, TX	95	0	0	2	2	0	2	0	0	2	0
FT Leavenworth, KS	5	0	0	0	1	1	0	0	0	0	0
FT Leonard Wood, MO	23	2	2	2	0	0	0	0	0	14	7
FT Polk, LA	15	7	1	0	0	0	0	0	0	0	0
FT Riley, KS	29	7	0	0	0	0	1	0	0	0	0
FT Sill, OK	0	7	0	2	3	0	0	0	0	0	0
SOUTHEAST RMC											
Eisenhower AMC	7	0	0	0	1	0	0	0	0	0	0
FT Benning, GA	43	10	0	0	0	0	0	0	0	11	1
FT Campbell, KY	51	0	13	0	0	1	2	2	0	10	5
FT Jackson, SC	75	0	0	0	1	1	1	0	0	12	0
FT McClellan, AL	1	0	0	0	0	0	0	0	0	0	0
FT Rucker, AL	20	0	0	0	0	0	0	0	0	0	0
FT Stewart, GA	205	0	0	0	0	0	0	0	0	1	0
SOUTHWEST RMC											
Wm Beaumont AMC	63	0	0	1	1	0	2	0	0	10	3
FT Huachuca, AZ	6	0	0	0	0	0	0	0	0	0	0
FT Irwin, CA	1	0	0	0	0	0	0	0	0	0	0
NORTHWEST RMC											
Madigan AMC	68	0	0	2	0	1	4	1	0	0	0
FT Wainwright, AK	0	0	0	0	0	0	0	0	0	0	0
PACIFIC RMC											
Tripler AMC	55	0	0	0	1	0	1	0	0	0	0
OTHER LOCATIONS											
Europe	131	1	1	2	15	8	17	0	5	23	0
Korea	72	0	0	0	7	1	0	1	0	2	0
Total	1229	55	26	16	34	16	53	10	67	94	19

* Based on date of onset.

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

Date of Report: 7-Aug-97

FIGURE I. Selected sentinel reportable diseases, US Army medical treatment facilities*
Cases per month, Aug 95 - Jul 97



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

**TABLE II. Reportable sexually transmitted diseases, US Army medical treatment facilities*
July, 1997**

Reporting MTF/Post**	Chlamydia		Urethritis non-spec.		Gonorrhea		Herpes Simplex		Syphilis Prim/Sec		Syphilis Latent		Other STDs**	
	Cur. Month	Cum. 1997	Cur. Month	Cum. 1997	Cur. Month	Cum. 1997	Cur. Month	Cum. 1997	Cur. Month	Cum. 1997	Cur. Month	Cum. 1997	Cur. Month	Cum. 1997
NORTH ATLANTIC RMC														
Walter Reed AMC	2	39	0	6	2	17	3	17	0	1	0	0	0	0
Aberdeen Prov. Ground, MD	3	14	0	1	2	18	0	5	0	0	0	0	0	0
FT Belvoir, VA	0	2	0	0	0	0	0	0	0	0	0	0	0	0
FT Bragg, NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FT Drum, NY	0	15	0	4	0	9	0	1	0	0	0	0	0	0
FT Eustis, VA	15	75	0	0	5	11	0	0	0	0	0	0	0	0
FT Knox, KY	8	62	0	0	1	29	1	27	0	0	0	0	0	0
FT Lee, VA	1	15	0	0	0	3	0	0	0	0	0	0	0	0
FT Meade, MD	0	6	0	3	0	1	0	2	0	0	0	0	0	0
West Point, NY	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GREAT PLAINS RMC														
Brooke AMC	19	79	0	0	14	30	1	6	0	0	0	0	0	0
FT Carson, CO	11	174	26	161	4	50	3	27	0	0	0	1	0	0
FT Hood, TX	0	233	2	102	2	119	0	28	0	1	0	0	0	4
FT Leavenworth, KS	1	14	0	0	0	5	0	0	0	0	0	0	0	0
FT Leonard Wood, MO	6	51	2	11	3	18	0	0	0	0	0	1	0	0
FT Polk, LA	4	39	0	0	1	11	0	3	0	0	2	2	0	3
FT Riley, KS	15	105	0	0	8	27	0	0	0	0	0	1	0	0
FT Sill, OK	20	102	9	27	8	43	1	9	0	0	0	0	0	3
SOUTHEAST RMC														
Eisenhower AMC	0	55	0	0	0	14	0	31	0	0	0	0	0	7
FT Benning, GA	1	36	0	0	7	40	0	22	0	0	0	2	0	0
FT Campbell, KY	27	168	0	0	16	99	6	18	0	0	0	1	0	1
FT Jackson, SC	63	498 [§]	0	0	0	14	4	35	0	1	0	0	0	2
FT McClellan, AL	1	1	0	0	0	0	0	0	0	0	0	0	0	0
FT Rucker, AL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FT Stewart, GA	0	59	1	86	0	65	0	35	0	0	0	2	1	27
SOUTHWEST RMC														
Wm Beaumont AMC	13	162	0	0	1	18	2	27	0	1	0	1	0	2
FT Huachuca, AZ	0	19	0	0	0	2	0	1	0	0	0	0	0	0
FT Irwin, CA	0	21	0	0	0	5	0	4	0	1	0	0	0	0
NORTHWEST RMC														
Madigan AMC	25	156	11	58	4	46	6	33	0	0	0	0	0	0
FT Wainwright, AK	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PACIFIC RMC														
Tripler AMC	15	68	0	0	7	27	13	45	0	0	0	0	0	0
OTHER LOCATIONS														
Europe	18	327	1	10	3	94	0	19	0	3	0	0	0	1
Korea	0	12	0	0	0	0	0	0	0	0	0	0	0	0
Total	268	2607	52	469	88	815	40	395	0	8	2	11	1	50

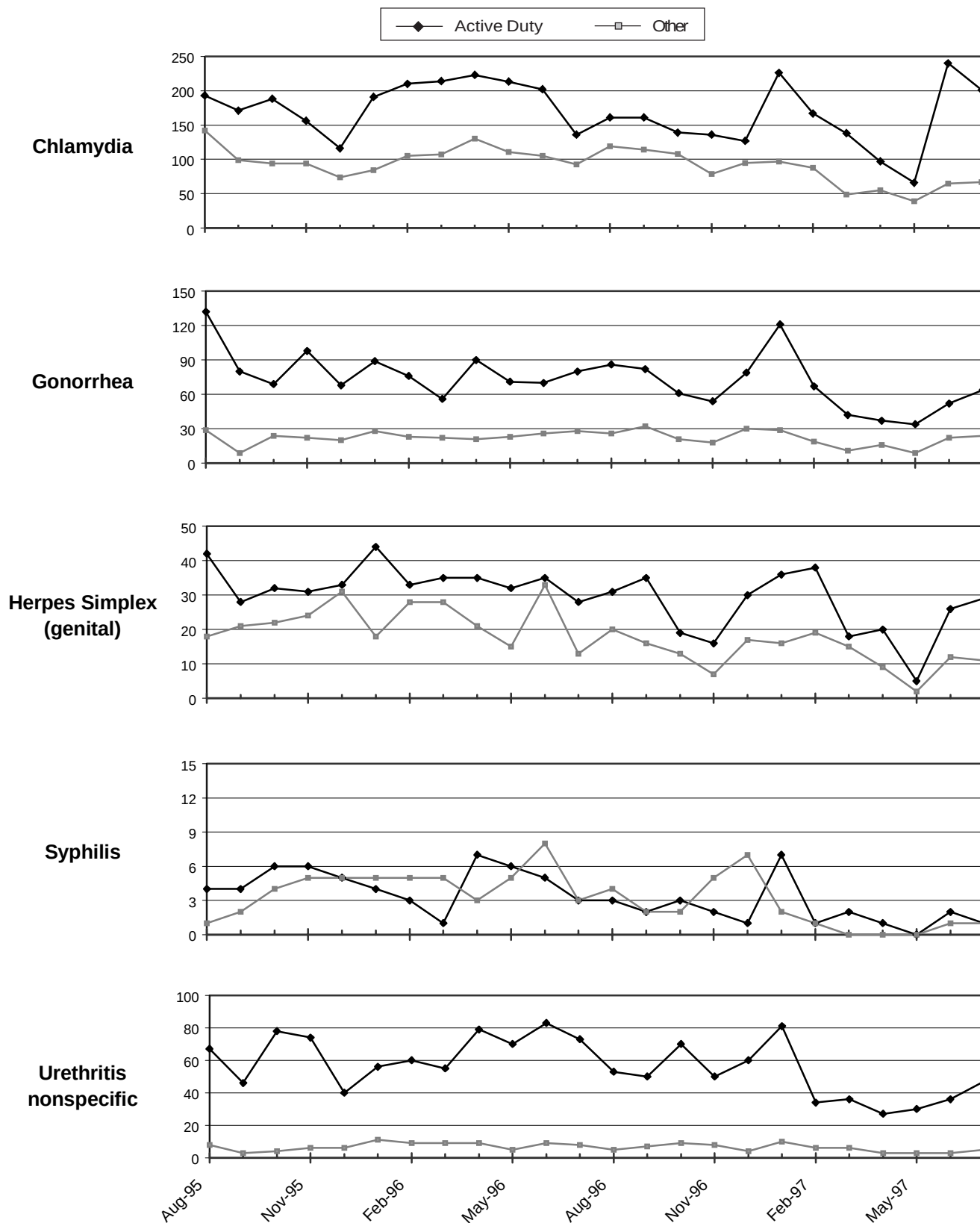
* Reports are included from main and satellite clinics. Not all sites reporting.

Date of Report: 7-Aug-97

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

§ Includes participants in a large-scale ongoing chlamydia study.

FIGURE II. Reportable sexually transmitted diseases, US Army medical treatment facilities*
Cases per month, Aug 95 - Jul 97



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

Case report

***E. coli* O:157:H7, Fort Lewis, Washington**

On a recent weekend morning, a three-year-old child became suddenly ill with diarrhea, abdominal pain, and chills. She presented to the emergency room with mild tachycardia and low-grade fever and was rehydrated with intravenous and oral fluids.

The patient is her family's only child. No suspicious illnesses (e.g., diarrhea) were noted among other family members or among children or staff at the child's daycare. The evening prior to her illness, the child ate leftover lasagna that contained thoroughly cooked ground beef and cheese – the meal was heated approximately ten minutes in a microwave oven before it was served. The lasagna was initially prepared and consumed at a local pizza restaurant. The child did not eat fruit, vegetables, or other salad items at the pizza restaurant, and the family did not eat at other restaurants the week prior to the illness. The mother did not recall recent exposures to rare or barbecued meats, fruit juices, or unpasteurized milk.

Within a few days, the child was asymptomatic except for frequent soft stools (one possibly with a small amount of blood)—within a week, her diarrhea had also ceased. A stool culture taken during the child's clinical evaluation confirmed infection with *E. coli* O:157:H7.

Discussion: *E. coli* O:157:H7 was first identified as a cause of illness in 1982 when an outbreak of bloody diarrhea was linked to the consumption of contaminated hamburger.¹ Between November 1992 and February 1993, in four states of the western US (including Washington), there were four deaths and more than 500 culture-confirmed cases of *E. coli* O:157:H7 related to hamburger served through a chain of fast-food restaurants.² Since then, there have been approximately 50 documented outbreaks of *E. coli* O:157:H7 in the US, and the Centers for Disease Control and Prevention estimates that there are as many as 20,000 illnesses attributable to *E. coli* O:157:H7 annually.

Escherichia coli are ubiquitous gram-negative bacteria that are part of the normal enteric flora of many animals, including man. However, in humans, the strain of *E. coli* designated O:157:H7 causes a spectrum of illnesses ranging from asymptomatic infection, to mild cramps and diarrhea, to severe bloody diarrhea, thrombocytopenia, hemolytic anemia, and renal failure. The incubation period ranges from 3-8 days (median: 3-4), and the usual clinical course without specific treatment is 5 to 10 days. Children and the elderly are at greatest risk of severe illness. Hemolytic uremic syndrome (HUS), a life threatening complication of *E. coli* O:157:H7 infection, is the most common cause of acute renal failure in children.

Cattle are the most significant natural reservoir of *E. coli* O:157:H7 since they may carry the bacteria without symptoms. In turn, beef may be contaminated during slaughtering or butchering of infected cattle; dairy products may be contaminated during collection and processing of milk from infected herds; and fruits and vegetables may be contaminated from direct contact with manure-tainted soil (e.g., organic fertilizers). Lakes and streams may also be contaminated by run-offs from pastures, barnyards, or waste disposal systems. Outbreaks of *E. coli* O:157:H7 have been associated with swimming in and drinking sewage-contaminated surface water.

To prevent foodborne outbreaks of *E. coli* O:157:H7, beef should be cooked thoroughly — at temperatures greater than 160°F.—until the pink is gone from the interior, and all juices run clear. Fruits and vegetables should be carefully washed before they are eaten. Dairy products and fruit juices should be pasteurized before they are consumed. Water should be disinfected before it is used for cooking or drinking. To prevent cross-contaminations, food handlers should wash their hands with soap and hot water before handling food and after each use of the restroom; and hands, utensils, and work surfaces should be thoroughly

cleaned after each contact with raw meat or other potentially contaminated items.

Finally, person-to-person transmission can occur by fecal–oral spread, particularly within families and among children in daycare. Thus, daycare staffs should scrupulously follow guidelines for sanitation, infection control, and clinical screening. In particular, hands (especially of children and their caregivers) should be washed with hot, soapy water after each diaper change and each toilet use.

Case reports

Adult Respiratory Distress Syndrome (ARDS), Fort Lewis, Washington

Adult respiratory distress syndrome (ARDS) is a term that describes the clinical state of acute hypoxic respiratory failure (with normal levels of carbon dioxide). ARDS has many possible causes including infectious agents, toxins, drugs, metabolic and hematologic disorders, shock, and trauma. Recently, two cases of ARDS of unknown etiology occurred among previously healthy soldiers from Fort Lewis, Washington.

Case 1: On 23 June 1997, a 19-year-old infantryman was treated symptomatically for nausea, vomiting, and diarrhea. The following evening, he presented to the emergency room with fever and respiratory symptoms. A chest x-ray revealed multinodular infiltrates, and he was hospitalized for presumed pneumonia. During the night of admission, he developed respiratory failure and was transferred to the intensive care unit. Before his eventual recovery, his clinical course was characterized by mechanical support of ventilation, fever (>102 degrees), mild thrombocytopenia, hemococoncentration, and radiographic findings characteristic of ARDS. To date, laboratory tests—including serologic tests for Hantavirus—have failed to identify a specific etiology.

The soldier had no underlying conditions known to predispose to or cause ARDS. Of interest, he had returned from a month long field training exer-

Report submitted by Peter Rumm, MAJ (P), MC, while assigned as Public Health Resident, Preventive Medicine Service, Madigan Army Medical Center, Fort Lewis, Washington; Doctor Rumm is currently Chief, Epidemiology Division, USACHPPM-Europe, Landstuhl, Germany.

References

1. Riley, LW, Remis, RS, Helgerson, SD, et al. Hemorrhagic colitis associated with a rare *Escherichia coli* serotype. *N Engl J Med*, 308, 1983, 681-5.
2. CDC. Update: Multistate outbreak of *Escherichia coli* O157:H7 infections from hamburgers – Western United States, 1992-1993. *MMWR*, 42:14(April 16), 1993, 258-63.

cise at a location remote from Fort Lewis approximately one week prior to the onset of his symptoms.

Case 2: On 29 June 1997, a female soldier from Fort Lewis was hospitalized with interstitial pneumonitis, pleural effusion, and hypoxia. She required mechanical ventilatory support. To date, laboratory tests—including serologic tests for Hantavirus—have failed to identify the etiology of her illness. She had no identifiable risk factors for ARDS, but of note, she had participated in the same field training exercise as case 1.

Report submitted by Jeffrey Gunzenhauser, LTC, MC, Preventive Medicine Residency Program Director, Preventive Medicine Service, Madigan Army Medical Center, Fort Lewis, Washington.

Editorial comment: ARDS is infrequently diagnosed among active duty soldiers. These case reports suggest the possibility that the affected soldiers had common exposures to a respiratory pathogen endemic to the site of their recent field training. Epidemiologic and laboratory assessments are planned or underway to assess characteristics of the implicated training areas, document background rates and trends of ARDS among soldiers, and identify potential risk factors and etiologic agents of recent ARDS cases.

Outbreak report***Shigella sonnei*, Fort Bragg, North Carolina**

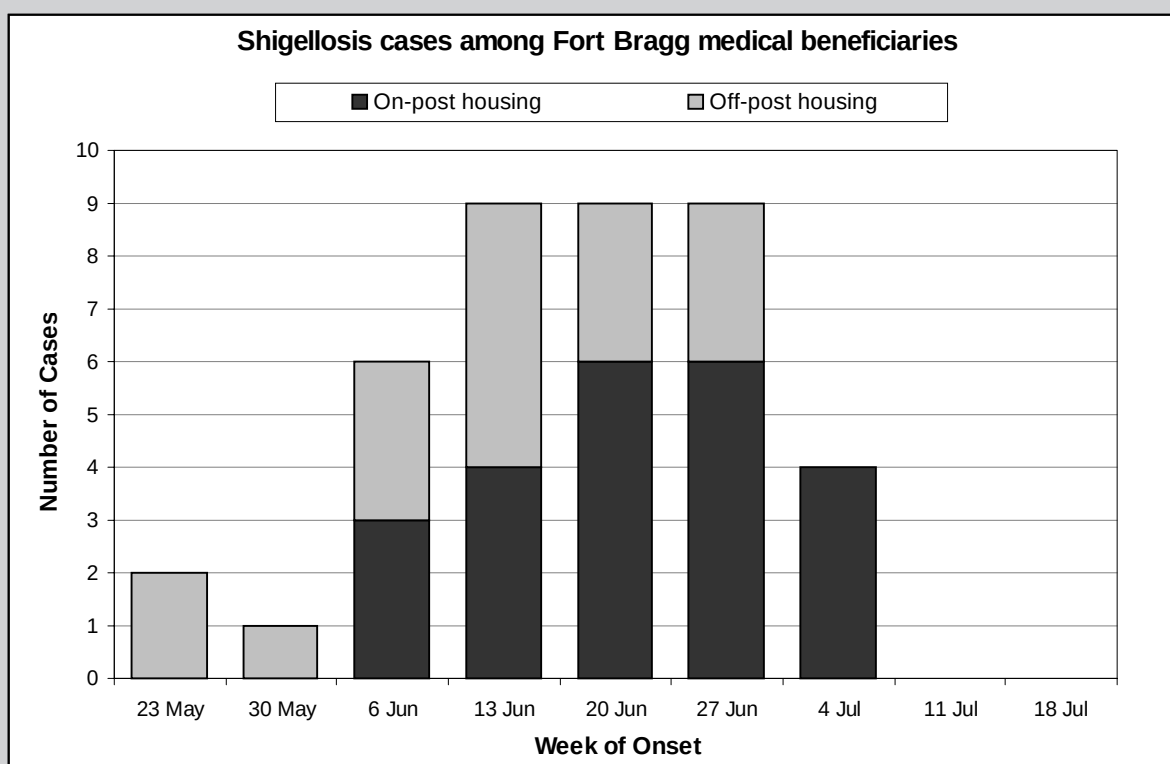
Between 23 May and 12 July 1997, 42 isolates of *Shigella sonnei* were obtained from beneficiaries of health care at Womack Army Medical Center, Fort Bragg, North Carolina. Of 42 cases confirmed to date, 40 were symptomatic — 2 were identified based on cultures of asymptomatic family member contacts. Twenty-three (55%) of the 42 cases occurred among persons residing in quarters on Fort Bragg (figure).

To more thoroughly and rapidly assess the geographic distribution of cases and their relative locations over time, a Geographic Information Systems (GIS) software program currently under study in the Fort Bragg Epidemiology and Disease Control Clinic — mainly to enhance sexually transmissible diseases control — was applied to data obtained from the outbreak. With collaborators from the Johns Hopkins School of Hygiene and

Public Health, the Fort Bragg staff rapidly determined that nineteen of the 23 on-post cases (83%) were residents of a single housing area — and that all 19 of the geographically-associated cases resided in a single section of the affected area.

Epidemiologic assessments of the affected neighborhood are ongoing, and specific interventions will be guided by the findings. Of note, the large on-post child development facilities have remained free of epidemic disease, most likely due to intensive monitoring and meticulous attention to clinical screening, handwashing, and cleaning practices.

Report submitted by Kelly T. McKee, COL, MC, Chief, Preventive Medicine Service, Womack Army Medical Center, Fort Bragg, North Carolina.



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

Figure III. 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.

Case report**HIV-2, Walter Reed Army Medical Center**

At the request of her physician, a patient submitted blood to the laboratory at Walter Reed Army Medical Center for HIV-1 antibody testing. The patient denied histories of intravenous drug use or blood transfusion. She did, however, report a longstanding relationship with a man who had emigrated from Senegal.

In initial testing, the patient's serum reacted with HIV-specific antigens by both EIA and western blot (WB) assays. On the WB, however, antibodies were detected against only one of the two immunodominant glycoproteins in the envelope of HIV-1. A recombinant EIA (rEIA) assay was conducted to enhance the reliability of the final laboratory assessment – the rEIA was negative. The equivocal results were thought to possibly reflect the earliest stages (i.e., seroconversion) of the natural course of HIV-1 infection. To followup, another specimen was requested, drawn, and tested approximately six weeks later.

The second specimen also provided inconsistent results: in duplicate tests run in parallel, the WB was indeterminate (i.e., there were antibodies against some but not all major HIV-1 specific antigens), and the rEIA was both reactive and nonreactive. A polymerase chain reaction (PCR) test to detect genetic sequences of HIV-1 was negative on both the initial and followup samples.

Finally, by both EIA and WB, the patient's serum strongly reacted against HIV-2 specific antigens. In addition, genetic sequences specific for HIV-2 were unequivocally detected by PCR.

Report submitted by Bernice B. Friedman, MA, RNC, Walter Reed Medical Center, Washington, DC

Editorial comment: This report demonstrates the importance of laboratory capabilities to detect and characterize human retroviruses other than HIV-1. Most laboratories in the US and throughout the world would have reported the patient's first specimen as "positive" for HIV-1 (CDC criteria). Fortunately, in this case, the detection of antibodies against only one of the two major envelope glyco-

proteins of HIV-1 – plus a negative result on the rEIA confirmatory assay — led to further testing and, ultimately, to confirmation of HIV-2, a retrovirus with a more favorable prognosis than HIV-1.

Human immunodeficiency virus, type 2 (HIV-2) is one of the family of retroviruses known to infect humans ("human retroviruses"). HIV-2 is closely related to the prototypic human immunodeficiency virus, HIV-1, the virus responsible for the worldwide pandemic of acquired immunodeficiency syndrome (AIDS). While HIV-1 and HIV-2 share common pathophysiologic mechanisms and clinical consequences, long term studies have shown that adults with HIV-2 progress more slowly to severe immunodeficiency than those with HIV-1.¹

HIV-1 and HIV-2 also share modes of transmission (i.e., sexual, blood-borne, perinatal). However, unlike HIV-1, HIV-2 has not spread widely beyond its initial endemic focus in West Africa (including Senegal). Indeed, HIV-2 is still uncommon in the United States - as of 31 December 1996, there were only 67 confirmed cases of HIV-2 nationwide, and of these confirmed cases, 47 were known to have been born in West Africa.⁴

Finally, from several research perspectives, it is significant that HIV-2 is less transmissible^{2,3} and virulent¹ than HIV-1. Studies are underway to identify the biologic mechanisms that underlie the clinical and epidemiologic differences between these closely related viruses.

Editorial comment submitted by Hee-Choon S. Lee, MAJ, MC, Public Health Resident, Madigan Army Medical Center, Fort Lewis, Washington.

References

1. Marlink, R, Kanki, P, Thior, I, et al. Reduced rate of disease development after HIV-2 infection as compared to HIV-1. *Science*, 265:5178(Sep 9), 1994, 1587-90.
2. Kanki, PJ, Travers, KU, M'Boup, S, et al. Slower heterosexual spread of HIV-2 than HIV-1. *Lancet*, 343:8903(April 16), 1994, 943-6.
3. DeCock, KM, Adjuorlolo, G, Ekpini E, et al. Epidemiology and transmission of HIV-2. Why there is no HIV-2 pandemic. *JAMA*, 270:17(Nov 3), 1993, 2083-6.
4. Centers for Disease Control and Prevention. Facts about human immunodeficiency virus type 2. *HIV/AIDS Prevention*. February, 1997, 1-2.

Supplement #1**HIV-1 in the Army**

During 1996, there were 63 active and 21 reserve component soldiers diagnosed with infections with HIV-1 (table S2, page 14). The prevalence (0.23 per 1000) of HIV-1 among active soldiers in 1996 continued the flat trend that has persisted through the 1990s (figure S1). The prevalence of HIV-1 (0.21 per 1000) among 102,288 reserve component soldiers tested was remarkably similar to that among active duty soldiers.

Since most soldiers on active duty were previously screened for and documented as negative for HIV-1 (e.g., pre-induction, routine periodic medical examination), most new diagnoses represent infections acquired on active duty. As during previous years, males and soldiers representing racial/

ethnic minorities were overrepresented among those diagnosed with HIV-1 in 1996 (data not shown).

As of March 1997, of 4,688 active and reserve component soldiers diagnosed with HIV-1 infection since routine testing began, nearly one-fourth were known to be deceased and nearly one-fifth were retired from military service. Only 306 soldiers with documented HIV-1 infections remained on active duty (table S3, page 14).

Finally, prevalences of HIV-1 infection among civilian applicants for military service, overall and in each gender and racial/ethnic-defined subgroup, were lower in 1996 than in any other year since routine screening of military applicants began in 1985 (figures S2, S3, page 15).

Table S1. Rates of new diagnoses of HIV-1 infections, Army active duty, 1985 - 1996

Year	Persons Tested	Number of Newly Identified Positives
1985/86	367,372	1040
1987	351,439	407
1988	380,563	189
1989	385,249	172
1990	432,746	145
1991	382,674	135
1992	422,691	125
1993	356,574	91
1994	338,980	65
1995	299,958	67
1996	277,271	63

Figure S1. Rates of new diagnoses of HIV-1 infections, Army active duty, 1985 - 1996

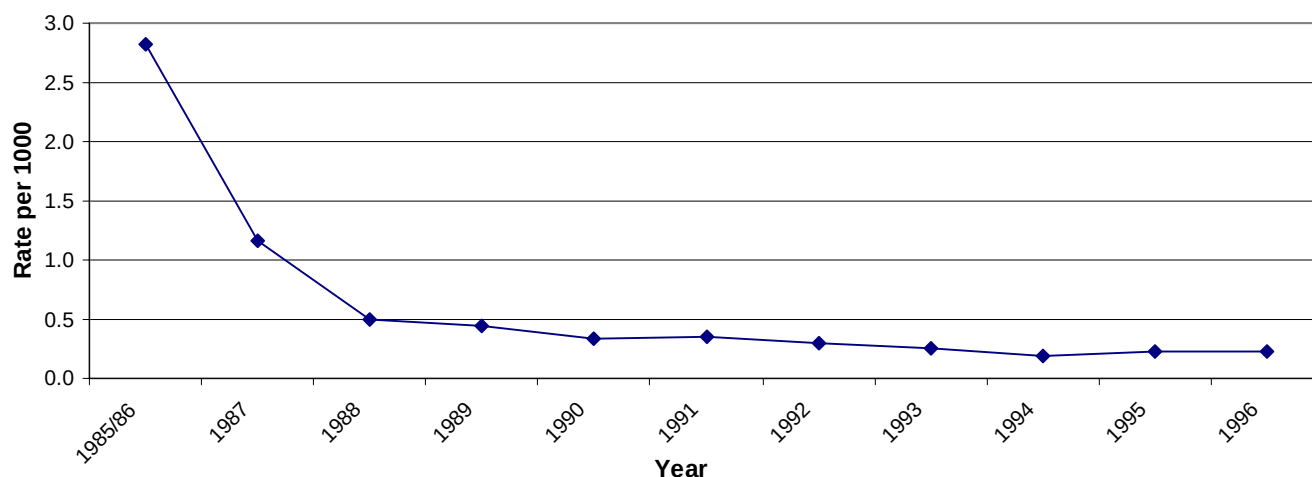


Table S2. HIV-1 tests performed for active duty and reserve component, 1996

<u>Test purpose</u>	<u>Active</u>	<u>Reserve</u>	<u>Total</u>
Clinical / STD	23,166		23,166
Force testing	188,825	109,126	297,951
Physical exam	78,369		78,369
Other / Unknown	46,638		46,638
Total tests	336,998	109,126	446,124
Total persons tested	277,271	102,288	379,559
Number positive	63	21	84
Prevalence per 1000	0.23	0.21	0.22

Table S3. Last known status of Army active duty and AR/NG soldiers infected with HIV-1, 1985-1997

Year diagnosed	Active Duty	Former AD *	AR/NG	Former AR/NG *	Retired**	Deceased**	Total
1985/86	26	277	4	202	329	508	1346
1987	8	95	7	462	155	231	958
1988	7	49	8	180	93	109	446
1989	11	63	7	145	76	98	400
1990	17	75	3	129	58	54	336
1991	20	61	5	111	58	70	325
1992	28	59	9	95	57	33	281
1993	24	40	6	74	35	13	192
1994	39	30	13	47	17	6	152
1995	51	23	12	48	8	1	143
1996	55	9	15	6	1	0	86
1997	20	1	2	0	0	0	23
Total	306	782	91	1499	887	1123	4688

* No longer a beneficiary of DoD health care.

** Includes both active duty and AR/NG.

Figure S2. Prevalence of antibody to HIV-1, civilian applicants for US military service, by gender and year of screening, 1986 - 1996

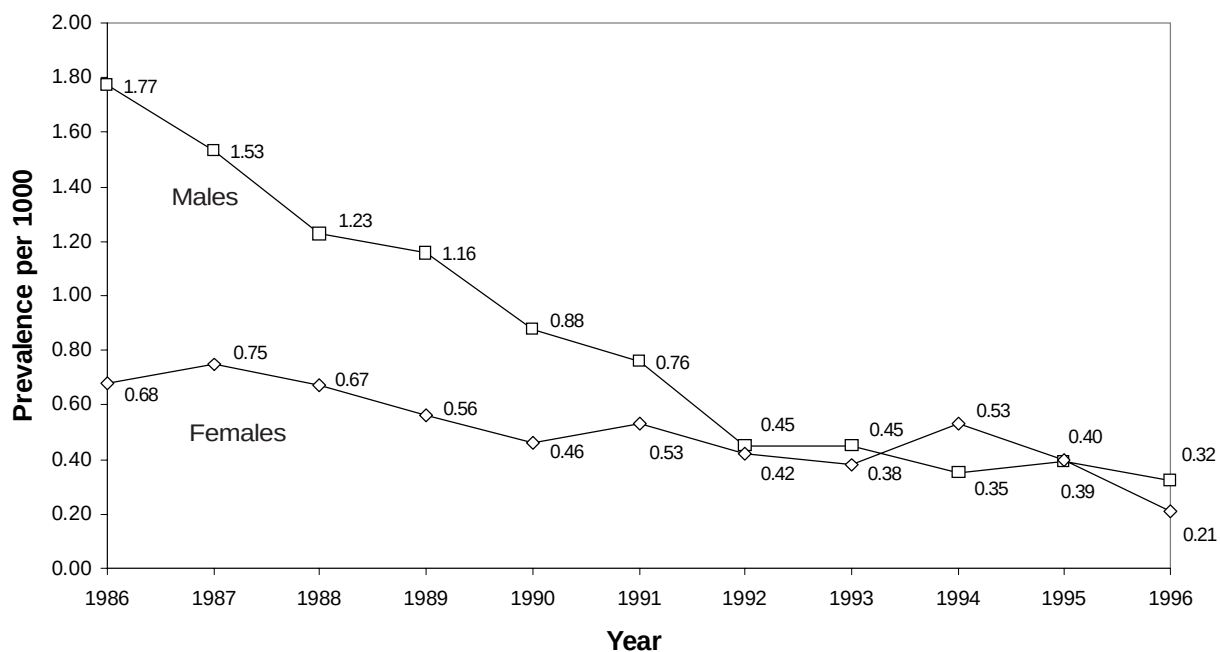
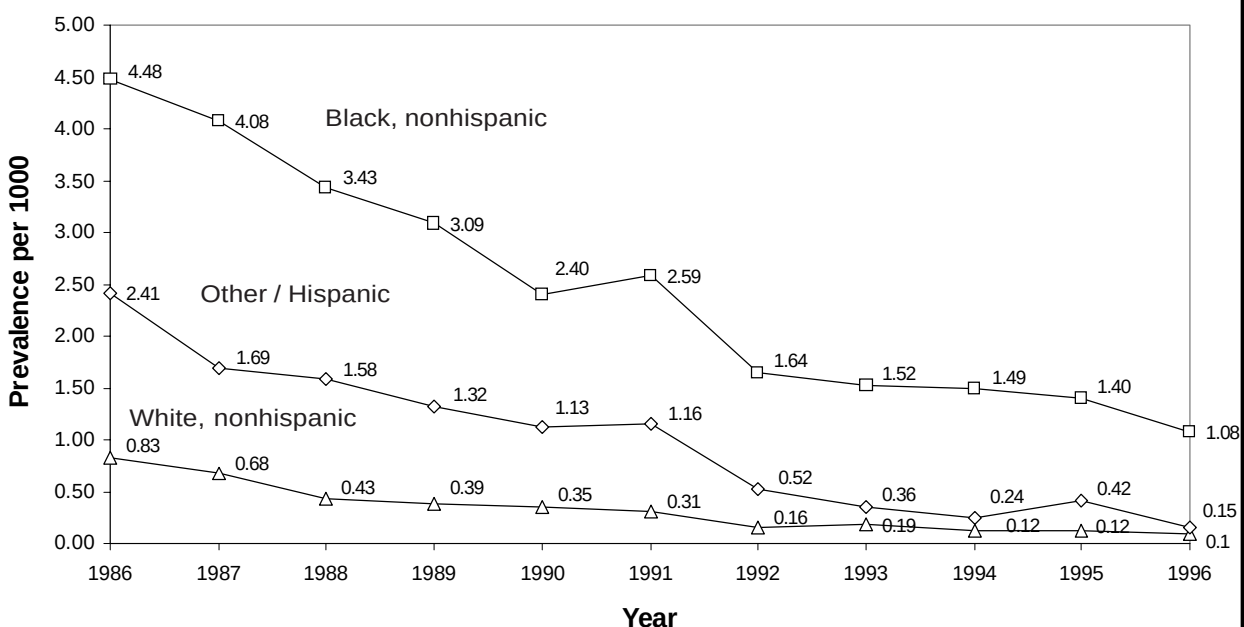


Figure S3. Prevalence of antibody to HIV-1, civilian applicants for US military service by race/ethnicity and year of screening, 1986 - 1996

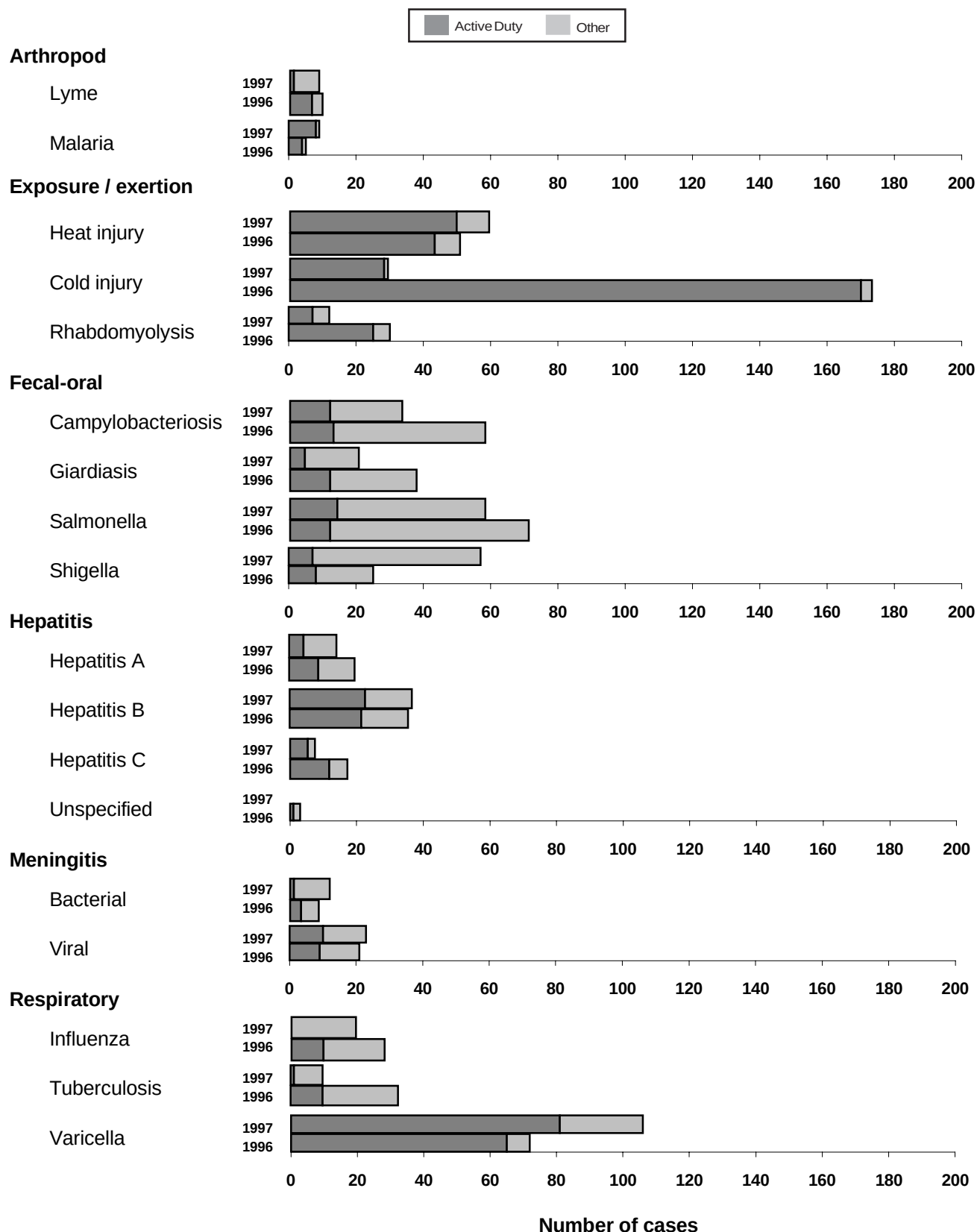


*Supplement #2: Reportables Diseases***TABLE S1. Reportable conditions reported through Medical Surveillance System, Jan-Jun 1997***

Diagnosis	1st Quarter	2nd Quarter	Total	Diagnosis	1st Quarter	2nd Quarter	Total
Amebiasis	0	0	0	Malaria, unspecified	0	5	5
Anthrax	0	0	0	Malaria, vivax	1	3	4
Arboviral fever, unsp.	0	0	0	Malaria, falciparum	0	0	0
Asbestosis	0	0	0	Malaria, malariae	0	0	0
Botulism	0	1	1	Malaria, ovale	0	0	0
Brucellosis	0	0	0	Measles	0	4	4
Campylobacteriosis	17	14	31	Meningitis, Viral	6	19	25
Carbon monoxide intx.	4	4	8	Meningitis, Bact.	5	6	11
Chancroid	0	0	0	Mercury intoxication	0	0	0
Chemical agent exp.	0	1	1	Mumps (adults only)	3	1	4
Chlamydia	1186	1153	2339	Mycobacterial inf.	1	1	2
Cholera	0	0	0	Pertussis	2	0	2
Coccidioidomycosis	2	1	3	Plague	0	0	0
CWI, unspecified	1	0	1	Pneumococcal pneum.	0	0	0
CWI, frostbite	26	0	26	Poliomyelitis	0	0	0
CWI, hypothermia	0	0	0	Psittacosis	0	0	0
CWI, immersion type	0	0	0	Q fever	0	0	0
Dengue fever	0	0	0	Rabies, human	0	0	0
Diphtheria	0	0	0	Radiation injury	0	0	0
Ehrlichiosis	0	0	0	Relapsing fever	0	0	0
Encephalitis	1	1	2	Reye syndrome	0	0	0
Giardiasis	14	5	19	Rhabdomyolysis	7	5	12
Gonorrhea	386	341	727	Rheumatic fever	0	0	0
Granuloma Inguinale	8	2	10	Rift Valley Fever	0	0	0
Guillain-Barre Syndrome	4	1	5	RMSF	0	0	0
H. influenzae, inv.	2	3	5	Rubella	1	1	2
Heat exhaustion	4	34	38	Salmonellosis	14	40	54
Heat stroke	6	11	17	Schistosomiasis	0	0	0
Hemorrhagic fever	0	0	0	Shigellosis	7	50	57
Hepatitis A, Acute	4	9	13	Syphilis, unspec.	6	3	9
Hepatitis B, Acute	24	10	34	Syphilis, prim/sec	6	2	8
Hepatitis C, Acute	2	5	7	Syphilis, latent	6	3	9
Hepatitis, unspec.	0	0	0	Syphilis, tertiary	0	2	2
Herpes Simplex	195	160	355	Syphilis, congenital	1	1	2
Influenza	18	0	18	Tetanus	0	0	0
Kawasaki syndrome	2	0	2	Toxic shock syndrome	0	0	0
Lead poisoning	1	0	1	Toxoplasmosis	0	1	1
Legionellosis	0	0	0	Trichinellosis	3	0	3
Leish, unspecified	0	0	0	Trypanosomiasis, Afr.	0	0	0
Leish, cutaneous	9	3	12	Trypanosomiasis, Amer.	0	0	0
Leish, mucocutaneous	0	0	0	Tuberculosis, pulmonary	4	5	9
Leish, visceral	0	0	0	Tularemia	1	0	1
Leish, viscerotropic	0	0	0	Typhoid fever	0	0	0
Leprosy	0	1	1	Typhus fever	0	0	0
Leptospirosis	0	0	0	Urethritis, non-specific	210	207	417
Listeriosis	0	0	0	Vaccine advrs event	0	0	0
Lyme disease	4	4	8	Varicella, adult only	68	38	106
Lymphogranuloma Vnrm	12	14	26	Yellow fever	0	0	0
Total				2284	2175	4459	

* Based on date of onset.

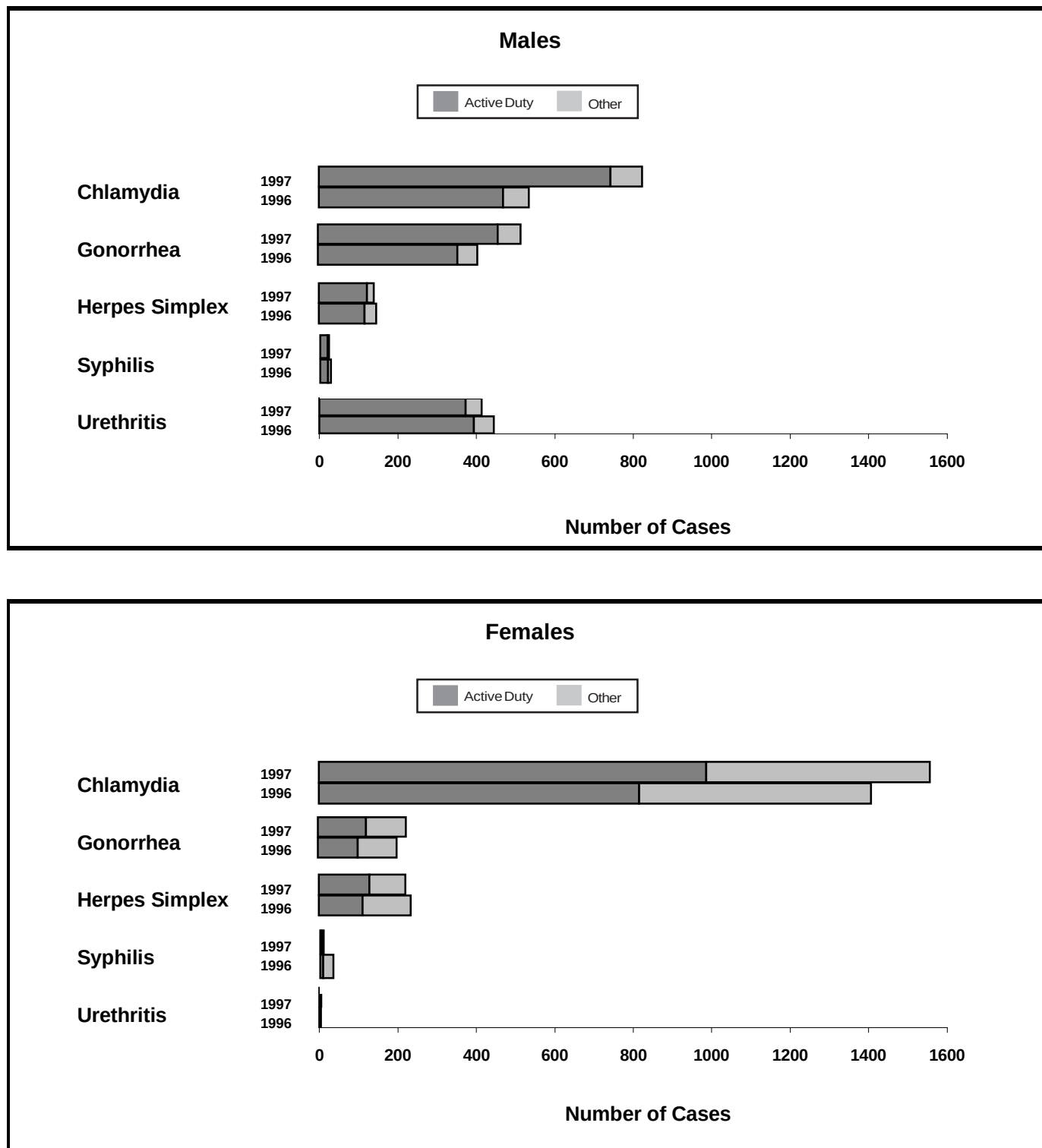
FIGURE S1. Sentinel Reportable Diseases, United States Army*
Comparison of first and second quarters calendar year 1997 to 1996



* Based on date of onset.

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

FIGURE S2. Sentinel Reportable STDs, United States Army*
Comparison of first and second quarters, by gender, calendar year 1997 to 1996



* Based on date of onset.

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

TABLE III. Active duty force strength by MTF, United States Army, March, 1997*

MTF/Post**	Males							Females							All
	< 20	20-24	25-29	30-34	35-39	>= 40	Total M	< 20	20-24	25-29	30-34	35-39	>= 40	Total F	
NORTH ATLANTIC RMC															
Walter Reed AMC	161	1284	1446	1581	1857	3229	9558	28	395	553	506	472	576	2530	12088
Aberdeen Prov. Ground, MD	404	654	362	405	436	340	2601	108	132	91	61	47	35	474	3075
FT Belvoir, VA	37	314	364	313	307	360	1695	17	98	136	92	80	56	479	2174
FT Bragg, NC	2032	12015	9421	6626	4212	2378	36684	282	1592	1324	715	480	228	4621	41305
FT Drum, NY	528	3459	2309	1389	944	480	9109	72	430	237	129	85	40	993	10102
FT Eustis, VA	452	1487	1155	963	854	865	5776	149	459	319	195	138	98	1358	7134
FT Knox, KY	1138	2635	1510	1298	1225	748	8554	49	191	179	135	93	73	720	9274
FT Lee, VA	440	846	662	623	484	383	3438	255	341	225	176	116	79	1192	4630
FT Meade, MD	78	765	1068	961	785	940	4597	51	279	287	236	199	161	1213	5810
West Point, NY	26	276	269	687	621	608	2487	5	64	68	119	96	76	428	2915
GREAT PLAINS RMC															
Brooke AMC	323	983	989	1032	825	961	5113	279	547	462	373	296	310	2267	7380
FT Carson, CO	618	3972	3255	2211	1543	794	12393	147	583	401	239	145	88	1603	13996
FT Hood, TX	2258	12567	8963	5726	3971	2323	35808	398	2164	1513	873	565	295	5808	41616
FT Leavenworth, KS	27	277	225	516	870	592	2507	22	81	58	81	107	51	400	2907
FT Leonard Wood, MO	967	1940	1075	1071	845	511	6409	463	558	289	177	94	72	1653	8062
FT Polk, LA	447	2168	1508	1160	744	405	6432	103	361	233	136	80	58	971	7403
FT Riley, KS	887	3418	2081	1378	893	448	9105	136	417	243	161	96	55	1108	10213
FT Sill, OK	1631	4101	2614	1792	1398	797	12333	107	372	292	183	110	72	1136	13469
Panama	95	751	778	704	599	471	3398	9	127	133	88	71	37	465	3863
SOUTHEAST RMC															
Eisenhower AMC	1144	2151	1454	1191	1379	1187	8506	307	591	457	374	332	229	2290	10796
FT Benning, GA	1866	4629	3200	2103	1390	734	13922	139	472	366	229	137	69	1412	15334
FT Campbell, KY	1222	6725	5778	3581	2295	1125	20726	181	995	698	409	231	105	2619	23345
FT Jackson, SC	1007	1676	872	882	645	421	5503	735	916	443	307	175	93	2669	8172
FT McClellan, AL	521	866	522	587	494	396	3386	191	262	179	111	98	51	892	4278
FT Rucker, AL	79	598	925	617	503	442	3164	50	146	127	78	60	34	495	3659
FT Stewart, GA	1110	6125	4478	2732	1902	1031	17378	183	976	717	346	221	93	2536	19914
SOUTHWEST RMC															
Wm Beaumont AMC	509	2131	1641	1207	1152	1098	7738	137	586	388	213	150	166	1640	9378
FT Huachuca, AZ	276	1085	1059	785	669	483	4357	146	376	228	172	134	87	1143	5500
FT Irwin, CA	162	1249	901	773	517	306	3908	26	172	111	77	42	27	455	4363
NORTHWEST RMC															
Madigan AMC	875	5054	4083	2867	1982	1337	16198	184	843	666	374	278	186	2531	18729
FT Wainwright, AK	294	1921	1661	1007	628	323	5834	52	293	222	156	105	48	876	6710
PACIFIC RMC															
Tripler AMC	767	3988	3480	2290	1509	1035	13069	124	696	666	405	317	202	2410	15479
OTHER LOCATIONS															
Europe	1516	11016	10721	7492	5631	3707	40083	314	2176	1851	1192	908	520	6961	47044
Korea	2087	8149	6017	4371	3400	2104	26128	538	1553	1094	689	494	283	4651	30779
Unknown	1793	9031	8657	9198	6810	4444	39933 [§]	602	1771	1407	1175	800	432	6187 [§]	46120 [§]
Total	27777	120306	95503	72119	54319	37806	407830	6589	22015	16663	10982	7852	5085	69186	477016

* 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 (DMDC)

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

OFFICIAL BUSINESS
MCHB-DC-EDM

BULK RATE
U.S. POSTAGE
PAID
APG, MD
PERMIT NO. 1