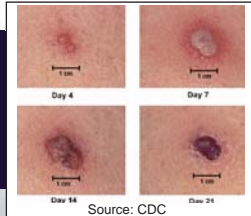




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Contact Transfer of Vaccinia Virus from U.S. Military Smallpox Vaccinees, U.S. Armed Forces, December 2002-May 2010

Smallpox is a contagious, life-threatening infectious disease that is caused by the variola virus. In general, smallpox transmission requires close and prolonged interaction between a contagious, infected host and an immunologically susceptible contact; the virus can also be transmitted through contact with contaminated body fluids or physical objects. For centuries, smallpox caused massive outbreaks and numerous deaths in civilian and military populations and was a persistent and significant threat to military operations. Although a worldwide vaccination program was able to eradicate the disease in 1977, stored specimens could be used to develop smallpox-based weapons, and such weapons could be used to produce mass terror and deaths.

Smallpox vaccine is a live virus vaccine; it consists of vaccinia virus which is closely related to, but much milder in its clinical expression than, variola virus. Routine vaccination of the U.S. general population ceased in 1972. However, since the 1940s (except from 1990 to 1998), members of the U.S. Armed Forces have been routinely vaccinated against smallpox. In December 2002, due to renewed concerns that smallpox virus might be used as a bioweapon, the U.S. Department of Defense (DoD) implemented the current smallpox vaccination program.¹ According to the Military Vaccine Agency (MILVAX), between December 2001 and September 2010, approximately two million designated U.S. service members had been vaccinated against smallpox; for 89 percent of these individuals, the vaccination during military service was their first exposure to smallpox vaccine.

Nearly all first-time vaccinees (and a large proportion of revaccinees) experience significant skin reactions at the vaccinia injection site; in the usual case, vaccination produces

a vesicle (9-10 days post vaccination) and then a scab that separates two to three weeks post vaccination.² During this two- to three-week period, vaccinia virus can be transmitted from the healing injection site to other parts of the vaccinee's body (primary transfer), to other individuals who have close contact with the vaccinee (secondary transfer) and, in rare cases from secondary contacts to other individuals (tertiary transfer). Such vaccinia virus transmissions usually result in mild, local skin reactions; extreme cases may cause serious (and potentially fatal) adverse reactions.^{3,4} To prevent vaccinia transfers, recipients of smallpox vaccine are counseled to keep injection sites covered and avoid unnecessary contact with infants, immunocompromised individuals, and those with dermatologic conditions that contraindicate smallpox immunization.

This report summarizes cases of secondary and tertiary transfers of vaccinia virus where the source was a U.S. military member who had recently received a smallpox vaccination.

Methods:

The surveillance period was 1 December 2002 to 31 May 2010. Probable and possible cases of vaccinia virus transmission from a U.S. military member to another individual were identified from reviews of three data sources: case reports published in peer-reviewed medical journals; reports to the Vaccine Adverse Event Reporting System (VAERS)⁵ accessed through the CDC Wonder online database; and reports of vaccine adverse events to the notifiable event reporting systems of the Services (which are transmitted to, and archived in, the Defense Medical Surveillance System [DMSS]). Each probable and possible

Table 1. Types of contact with vaccinee and anatomic locations of infection, probable cases of vaccinia transfer from U.S. service members (n=58), December 2002-May 2010

Type of contact with vaccinated service member	No. of men (n=17)	No. of women (n=35)	No. of children (n=6)
Household contact or sharing a bed	.	35	6
Wrestling, grappling, basketball, football ^a	14	.	.
Unknown type	3	.	.
Anatomic locations of vaccinia infections ^b	No. of men (n=17)	No. of women (n=35)	No. of children (n=6)
Face, neck	10	9	1
Arm, shoulder	7	11	2
Genitals (labia, vulva or perineum)	.	11	.
Trunk	4	4	2
Hand, wrist	1	4	2
Leg	.	6	.
Mouth, lip	.	3	1
Eye (ocular infection)	.	2	.
More than 2 sites of infection	5	6	2

^aTwo wrestlers also shared a household with the source case

^bIncludes multiple sites per individual

case was identified by reviewing narrative descriptions (in published case reports or text fields of adverse event reports) of vaccinia transfers to a presumably non-vaccinated contact. For surveillance purposes, case reports that specifically stated that a U.S. military member was the source of vaccinia transfer were considered “probable cases”. Case reports in which the source of contact transfer was not explicitly identified as a military member were classified as “possible cases” and analyzed separately.

The following information regarding each vaccinia infected contact was ascertained from narrative descriptions and relevant data fields of adverse event reports: demographic characteristics; relationship to vaccinee; anatomic site(s) of vaccinia infection(s); smallpox vaccination status; type of contact with the index vaccinee; relevant laboratory results, treatments and clinical outcomes. For surveillance purposes, the month of each vaccinia transfer was considered to be either the month of the initial clinical presentation of the contact patient (if reported) or the month in which the case report was submitted.

Because many cases were documented in more than one of the three data sources, temporal, demographic, geographic and clinical details of each probable and possible case were compared to those of all other cases. Case reports that closely matched other reports were considered duplicates and excluded from the analysis.

Results:

Eighty-nine reports of contact transfer were identified in VAERS; 16 cases were described in peer-reviewed medical journals;^{2,6-13} and eight reports were identified in the DMSS. After duplicate reports were removed, 58 unique reports of vaccinia virus transfer from a vaccinated service member to a contact were considered “probable cases”. Laboratory confirmation was available for 23 of the 58 probable cases; laboratory results were pending for four others.

For 42 other vaccinia transfer cases, the source was not specifically identified as a U.S. service member. These cases were considered “possible cases” and are summarized separately in this report.

Probable Cases

Of the 58 vaccinia contact transfers where the index vaccinee was identified as a U.S. service member, 53 were secondary (i.e., from a service member to a close contact) and five were tertiary (i.e., from a service member to a contact to another individual) transfers. For summary purposes, secondary and tertiary cases were grouped for analysis.

Nearly one-half (n=27, 46.6%) of all probable vaccinia transfer cases occurred in 2003 (the first year of the current DoD smallpox vaccination program). There were ten cases in 2004, and two to five cases in each subsequent year of the

period (**Figure 1a**). The numbers of vaccinia transfer cases were similar during the two years before (n=7) and after (n=9) introduction of a newer, second-generation smallpox vaccine (ACAM2000™).

Age, gender and military status

Two-thirds (n=38; 65.5%) of vaccinia transfer contacts were females; most by far were 18-29 years old (n=52; 86.7%). Six children were transfer contact cases: two were less than 1 year, and four were between 1 and 8 years old. Only one transfer contact had a reported history of smallpox vaccination: a female in her fifties had been vaccinated as a child.

Ten vaccinia transfer contacts, all male, were active duty military members serving in the Air Force (n=2), Marine Corps (n=1), Coast Guard (n=1), or in an unspecified service (n=6). Vaccinia transfers to military members comprised approximately 20 percent of all adult contact cases and nearly 60 percent of all transfers to males.

Only ten vaccinia transfer contacts were reported as civilians or persons who sought care at a civilian medical facility (hence, probably civilian). Of note, a majority (61.5%) of all vaccinia transfer case reports among adults did not specify the status (military, civilian) of the transfer contact.

Relationships of vaccinia contacts to vaccinees

More than 70 percent of the contacts were women (n=35, 60.3%) or children (n=6, 10.3%) who lived in the same household and/or shared a bed with a recently vaccinated service member (**Table 1**). All adult female contacts except one (a tertiary transfer case inoculated by her brother) were described as a spouse, partner, fiancée, girlfriend or intimate contact of the service member.

Nearly 30 percent of all transfer contacts (n=17) were men who had recently wrestled or played other sports with a vaccinee (n=14) or whose relationship to a vaccinee was not mentioned (n=3). At least two male wrestling-associated contacts lived in the same household or barracks as the service member who was the source of the vaccinia (**Table 1**).

Geographic locations

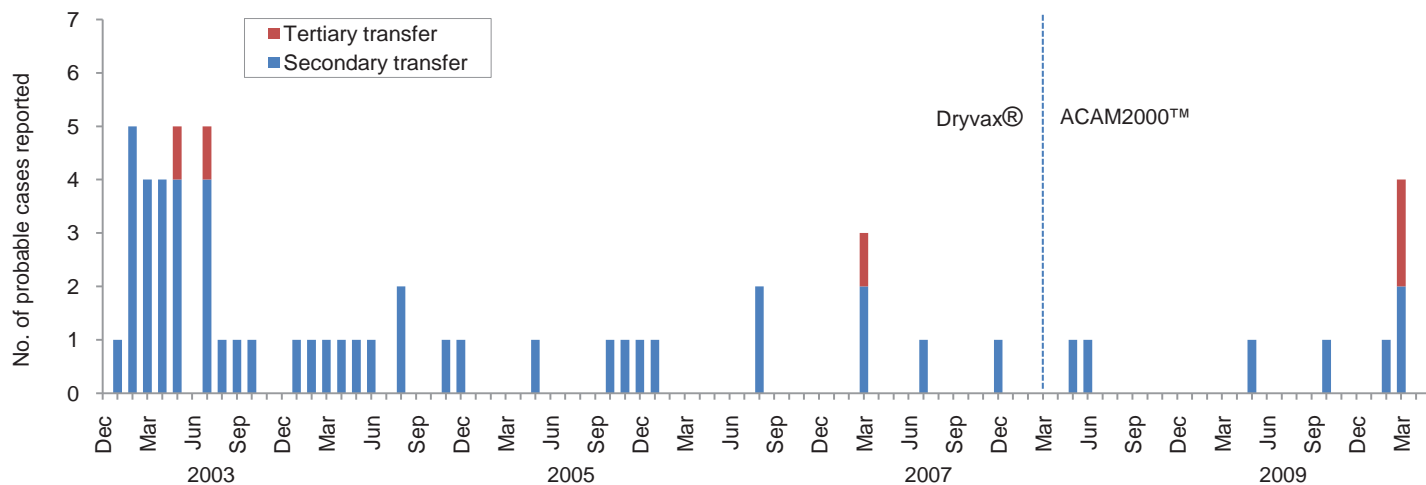
In 49 cases (84.5%), the residence of the transfer contact was reported. The states with the most transfer contacts were New York (n=6) and North Carolina (n=5); four of the New York cases — two secondary and two tertiary — were linked to the same military vaccinee. Hawaii, California, Washington and Texas were the home states of four transfer contacts each. One transfer contact was a U.S. military member overseas.

Type of contact

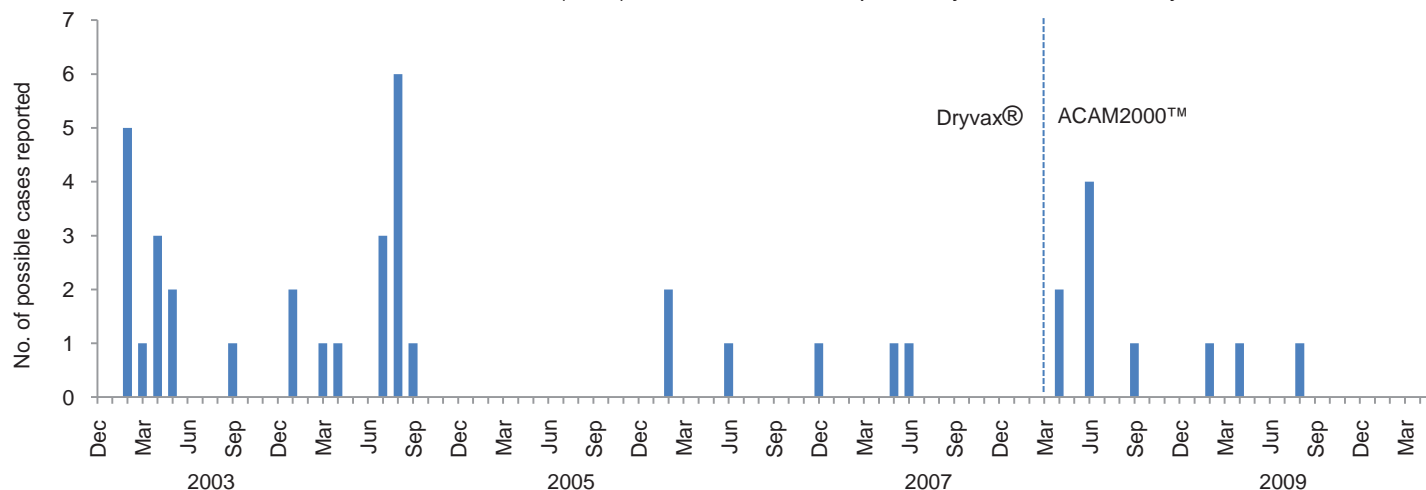
In most adult female transfer cases, the affected women reported close physical/intimate contact with a recently vaccinated service member; in other cases, close contact was inferred by the case's relationship to the vaccinee or the

Figure 1. Probable and possible cases of vaccinia virus contact transfer, by month, December 2002-May 2010

1a. Probable cases of vaccinia virus contact transfer (n=58) from U.S. military members



1b. Possible cases of vaccinia virus contact transfer (n=42) from individuals not specifically identified as military members



anatomic site of inoculation (e.g., 11 women had genital lesions). Other activities that were implicated in vaccinia virus transfers to women included sleeping beside a vaccinee (n=3), handling laundry of a vaccinee (n=2) and changing vaccination site dressings (n=2).

Of the 17 adult male transfer cases, wrestling, grappling or rough-housing were the activities most frequently implicated in the transfers (n=12). Three reports cited basketball or football; and one male contact reportedly changed the bandage of a recently-vaccinated barracks-mate (with whom he also grappled). Three reports of transfers to adult males mentioned only "contact" with a vaccinated military member. Activities that were implicated in vaccinia transfers to children included hugging, wrestling, sharing a bed, bathing and diaper changing. One four-year old touched her father's injection site and was treated for lesions on her index finger. Two of the five cases of tertiary transfer involved children.

Bandages or other coverings of smallpox vaccination sites were mentioned in fewer than half of all case reports

(n=26). Of these reports, 42 percent (n=11) stated that the vaccinee kept the injection site covered (though one report cited oozing through the bandage) and 58 percent (n=15) described some exposure to an uncovered injection site. Some reports noted bandages that had fallen off during activities (e.g. wrestling, swimming); others reported that vaccinees had left their injection sites bare.

Clinical manifestations

The majority (n=51, 87.9%) of vaccinia transfer cases manifested mild local skin reactions with slight edema, pain, redness, and itching at lesion sites. "Flu-like symptoms" (e.g., fever, malaise) (n=12) and swollen lymph nodes (n=7) were also noted on multiple case reports.

Two vaccinia transfer cases resulted in serious complications. A two-year-old developed eczema vaccinatum after contact with a recently vaccinated service member. The child was treated during a six-week hospitalization with vaccine immunoglobulin (VIG) and an investigational drug

(ST-246).⁹ Another transfer contact was treated with VIG for ocular vaccinia during a one-week hospitalization.¹² Four additional vaccinia transfer contacts were hospitalized: a 5-month old child was treated for vaccinia lesions in the mouth^{8,11}; an infant was hospitalized with a scattered papular rash and fever; an airman was treated for fever, vomiting and swollen lymph nodes; and a woman was hospitalized to rule out generalized vaccinia.

Anatomic sites of infection

Among adult females, the anatomic sites most frequently affected were the genitals (n=11), arm/shoulder (n=11), face/neck (n=9) and leg (n=6) (**Table 1**). Six women (17.1%) had vaccinia lesions at three or more anatomic sites. Most men were inoculated on the face/neck (n=10) or arm/shoulder (n=7); five men (29.4%) had three or more infection sites. Two of six children were infected on either the wrist or hand; two others (33.3%) had three or more infection sites (**Table 1**).

Temporal relationships

In the 13 cases with relevant data, the mean period between vaccination and transfer contact was 12 days (range 0-39 days). In the 12 cases with relevant data, the mean period between transfer contact and initial symptoms was 7 days (range: 1-26 days); and in eight cases, the mean time from vaccination of the index to initial symptoms of the transfer contact was 17 days (range: 6-36 days). In the 18 cases with relevant data, the mean time from transfer contact to the first clinical encounter for evaluation and treatment was 12 days (range: 1-31 days); and in 10 cases, the time from the first clinical visit of the transfer contact to the diagnosis of vaccinia was 17 days (range: 0-80 days).

Possible Cases

For 42 vaccinia transfer cases (all identified from VAERS reports), the vaccinee was not specifically identified as a U.S. military member; hence, they are considered "possible cases" for surveillance purposes (Figure 1b). The infected contacts of vaccinees who were possibly military members included 24 women (57.1%), 11 men (26.2%) and 7 children (16.7%). The most common residences of "possible" transfer contacts were North Carolina (n=8) and California (n=6). Three-quarters of the "possible contact cases" were women or children who shared a household or bed with a recent vaccinee. All of the adult female contacts (except one health care worker) were described as the spouse, fiancée, girlfriend or intimate contact of a vaccinee; all of the affected children were offspring of a vaccinee. One-third of the affected adult males (n=4, 36.3%) were either household contacts or wrestling partners of a vaccinee; relationships between the other affected men (n=7) and vaccinees were not specified.

Most reports of possible cases described mild local skin reactions; swollen lymph nodes (n=5) and flu-like

symptoms (n=3) were other reported clinical manifestations. In general, the most frequently affected anatomic sites were similar among probable and possible transfer contact cases. Eight possible cases (19.0%) had laboratory confirmation of vaccinia (per the case reports). Two of the possible cases were hospitalized, and none had life-threatening manifestations or were treated with VIG.

Editorial comment:

This surveillance summary documents 100 reports of transfers of vaccinia virus from a recent vaccinee to a close contact. The affected contacts included family members, U.S. military members, and other close contacts (e.g., sexual partners). In 58 of the case reports, the index vaccinee was specifically identified as a U.S. military member (i.e., probable cases); it is likely, however, that most if not all of the other possible cases also involved U.S. military vaccinees.

Of the 100 cases overall, 39 occurred during the first year of the current U.S. military smallpox vaccination program. This is not surprising because many more U.S. military members were vaccinated during the first compared to subsequent years of the program.

For several reasons, the cases summarized here likely represent a fraction of the actual number of vaccinia transfers through contact with a military member. For example, vaccinia infection through contact transmission is not a notifiable event; health care providers are not required to report such cases.^{6,14} Also, several vaccinia transfer case reports documented initial misdiagnoses and multiple clinic encounters with multiple care providers before the diagnosis of vaccinia infection was made.^{6,11,12} Many of the cases were intimate contacts of recent vaccinees; thus, they were not eligible for care in the military health system, and civilian providers may be relatively unlikely to clinically suspect vaccinia virus infections in unvaccinated patients. In addition, vaccinia transfers from service members who deploy soon after smallpox vaccinations may not be known or reported to U.S. based surveillance systems. Of note in this regard, only one transfer case in this summary (reported to the CDC) involved a military member outside the U.S. Finally, transfer contacts with only mild clinical manifestations or STI-like symptoms may not seek medical treatment.

Cases of contact transfer of vaccinia virus have been described since 1907.¹⁵ In modern times, contact transfer of vaccinia is considered an infrequent complication of vaccination. Since December 2002, the rate of vaccinia contact transfer from U.S. military members is approximately 3.3 cases per 100,000 primary (first-time) vaccinees (58 transfers of vaccinia from approximately 2 million vaccinees, of whom 89 percent were primary vaccinees). If possible cases were included in the estimate, the vaccinia transfer rate would be 5.7 per 100,000 primary vaccinees. The estimates are comparable

to the rates of contact transfers during the 1960s in the United States: 2 to 6 cases per 100,000 primary vaccinees.¹⁶

Vaccinia virus persists at sites of vaccination in primary and secondary vaccinees for at least three weeks after vaccination; primary vaccinees produce higher viral loads than those with previous exposures.^{17,18} Viral shedding is thought to be greatest during the first two-weeks after vaccination. This report documents vaccinia transmissions from recently vaccinated U.S. military members to household members, other intimate contacts, and individuals that engage in wrestling or other contact sports with recent vaccinees. With only one exception, all of the contacts to whom vaccinia virus was transferred were under the age of 30. In the United States, routine childhood smallpox vaccinations ended in 1972; hence, there is a large population of individuals (i.e., under 38 years old in 2010) with no immunity to vaccinia virus.

The findings and implications of this report should be used to reiterate the guidance that is given to military members at times of vaccination. The “contagiousness” of the vaccine rash, the importance of covering the vaccination site with a clean dressing, and the possibility of transmitting a potentially dangerous infection to a family member or friend through close physical contact should be emphasized. In particular, for example, vaccinees should be reminded that bandages, clothing, sheets and other items that directly contact vaccination sites could spread vaccinia infection. Health care providers – particularly those who provide primary care to service members and their family members – should be alerted to the usual clinical presentations of contact transfer vaccinia infections; in addition, they should be encouraged to report clinically suspected cases to supporting public health officials. Information regarding the smallpox vaccine and the U.S. military’s vaccination program is available at: <http://www.vaccines.mil/>.

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Updates: Routine Screening for Antibodies to HIV-1, Civilian Applicants for U.S. Military Service and U.S. Armed Forces, Active and Reserve Components

Human immunodeficiency virus, type 1 (HIV-1), causes a life threatening illness with a prolonged clinical course. The virus is generally transmitted from person-to-person in blood (e.g., transfusions, contaminated needles) or during sexual encounters. The immune deficiency that occurs after HIV-1 infection degrades the health and military operational capabilities of affected service members.

In order to provide appropriate medical evaluations, treatment, and counseling, prevent unwitting HIV-1 infection transmissions, and protect the battlefield blood supply, service members in the active and reserve components are routinely and periodically screened to detect newly acquired HIV-1 infections. Also, infection with HIV-1 is a medically disqualifying condition for military service.

Since October 1985, the U.S. military has conducted routine screening for antibodies to HIV-1 among civilian applicants for U.S. military service. Since 1986, all members of the active and reserve components of the U.S. Armed Forces have been periodically screened for antibodies to HIV-1. In 2004, the Department of Defense set a standard testing interval of two years for all service members.

This report summarizes prevalences and trends of HIV-1 antibody seropositivity among civilian applicants for military service who have been screened since 1990. It also summarizes incident (first time per individual) diagnoses of HIV-1 antibody seropositivity among members of the active and reserve components of the Services.

Methods:

Among civilian applicants for U.S. military service and U.S. service members, prevalences of HIV-1 antibody seropositivity were assessed by matching specimen numbers and serologic test results to the personal identifiers of the individuals who provided the specimens. All results (except those from U.S. Air Force members) were accessed from records routinely maintained in the Defense Medical Surveillance System. Summary data from U.S. Air Force testing from 1 January 1996 through 31 July 2010 were provided by the U.S. Air Force for use in this report.

For summary purposes, an incident diagnosis of HIV-1 antibody seropositivity was defined as two "positive" results from serologic testing of two different specimens from the same individual (or one "positive" result from serologic testing of the most recent specimen provided by an individual).

Annual prevalences of HIV-1 seropositivity among civilian applicants for service were calculated by dividing

the number of applicants identified as HIV-1 antibody seropositive during each calendar year by the number of applicants tested during the corresponding year. Of note, because of refinements in the methods used to identify HIV tests among civilian applicants for U.S. military service, the numbers of applicants tested each year as reported in this summary differ from those reported in previous HIV updates in the *MSMR*. For annual summaries of routine screening among U.S. service members, denominators were the numbers of individuals in each component of each Service who were tested at least once during the relevant calendar year. For summaries of results by gender, the 10-year average gender ratios of each service were used to impute genders for the relatively few test records in which they were missing or miscoded.

Civilian applicants for U.S. military service

During the 18-month period from January 2009 to June 2010, 424,325 tests for antibodies to HIV-1 were conducted among 421,743 civilian applicants for military service. During the period, 126 applicants were detected with antibodies to HIV-1 (seroprevalence: 0.30 per 1,000 tested) (**Table 1**).

Among civilian applicants overall, annual prevalences of HIV-1 antibody seropositivity were relatively stable between 1996 and 2006 and then increased in 2007 (0.47 per 1,000) and 2008 (0.47 per 1,000). Among male applicants, seroprevalences generally increased from 2003 to 2007 (0.32 per 1,000 to 0.55 per 1,000) and then slightly decreased (2008: 0.53 per 1,000; 2009: 0.40 per 1,000) (**Table 1, Figure 1**). Among female applicants, annual seroprevalences have been relatively low and stable since 2002 compared to previous years (**Table 1, Figure 1**).

As in the past, in 2009, the seroprevalence was sharply higher among applicants who were black non-Hispanic (1.35 per 1,000) compared to white non-Hispanic (0.19 per 1,000) or Hispanic/other (0.17 per 1,000) racial/ethnic identities (**Table 2, Figure 2**).

U.S. Army

Active component: During the 18-month period from January 2009 through June 2010, 865,989 tests for antibodies to HIV-1 were conducted among 690,578 soldiers in the active component of the U.S. Army. During the period, 120 soldiers (0.17 per 1,000 persons tested) were detected with antibodies to HIV-1 (**Table 3**).

Table 1. Diagnoses of HIV-1 infections by gender, civilian applicants for U.S. military service, January 1990-June 2010

Year	Total HIV tests	Total persons tested	Males tested	Females tested	Total HIV-1(+)	HIV-1(+) Male	HIV-1(+) Female	Overall rate per 1000 tested	Male rate per 1000 tested	Female rate per 1000 tested
1990	369,747	358,913	303,560	55,353	318	288	30	0.89	0.95	0.54
1991	347,878	337,428	287,920	49,508	277	253	24	0.82	0.88	0.48
1992	326,304	309,939	255,990	53,949	151	129	22	0.49	0.50	0.41
1993	298,024	287,837	235,714	52,123	137	116	21	0.48	0.49	0.40
1994	266,368	260,710	208,040	52,670	103	71	32	0.40	0.34	0.61
1995	232,489	226,465	180,503	45,962	113	88	25	0.50	0.49	0.54
1996	259,046	255,417	201,406	54,011	91	75	16	0.36	0.37	0.30
1997	274,389	272,004	216,239	55,765	91	76	15	0.33	0.35	0.27
1998	270,434	266,297	209,807	56,490	88	72	16	0.33	0.34	0.28
1999	291,941	288,498	226,975	61,523	102	83	19	0.35	0.37	0.31
2000	312,913	310,437	243,367	67,070	103	79	24	0.33	0.32	0.36
2001	325,985	323,174	255,661	67,513	104	84	20	0.32	0.33	0.30
2002	335,987	333,627	262,774	70,853	102	87	15	0.31	0.33	0.21
2003	291,565	289,356	232,796	56,560	88	74	14	0.30	0.32	0.25
2004	233,741	232,143	186,902	45,241	84	73	11	0.36	0.39	0.24
2005	235,330	233,433	186,955	46,478	89	79	10	0.38	0.42	0.22
2006	264,049	262,043	209,949	52,094	96	84	12	0.37	0.40	0.23
2007	244,766	243,131	196,052	47,079	114	107	7	0.47	0.55	0.15
2008	290,365	288,694	235,018	53,676	137	125	12	0.47	0.53	0.22
2009	285,603	283,710	229,521	54,189	100	91	9	0.35	0.40	0.17
2010 ^a	138,722	138,033	111,102	26,931	26	25	1	0.19	0.23	0.04
Total	5,895,646	5,801,289	4,676,249	1,125,040	2,514	2,159	355	0.43	0.46	0.32

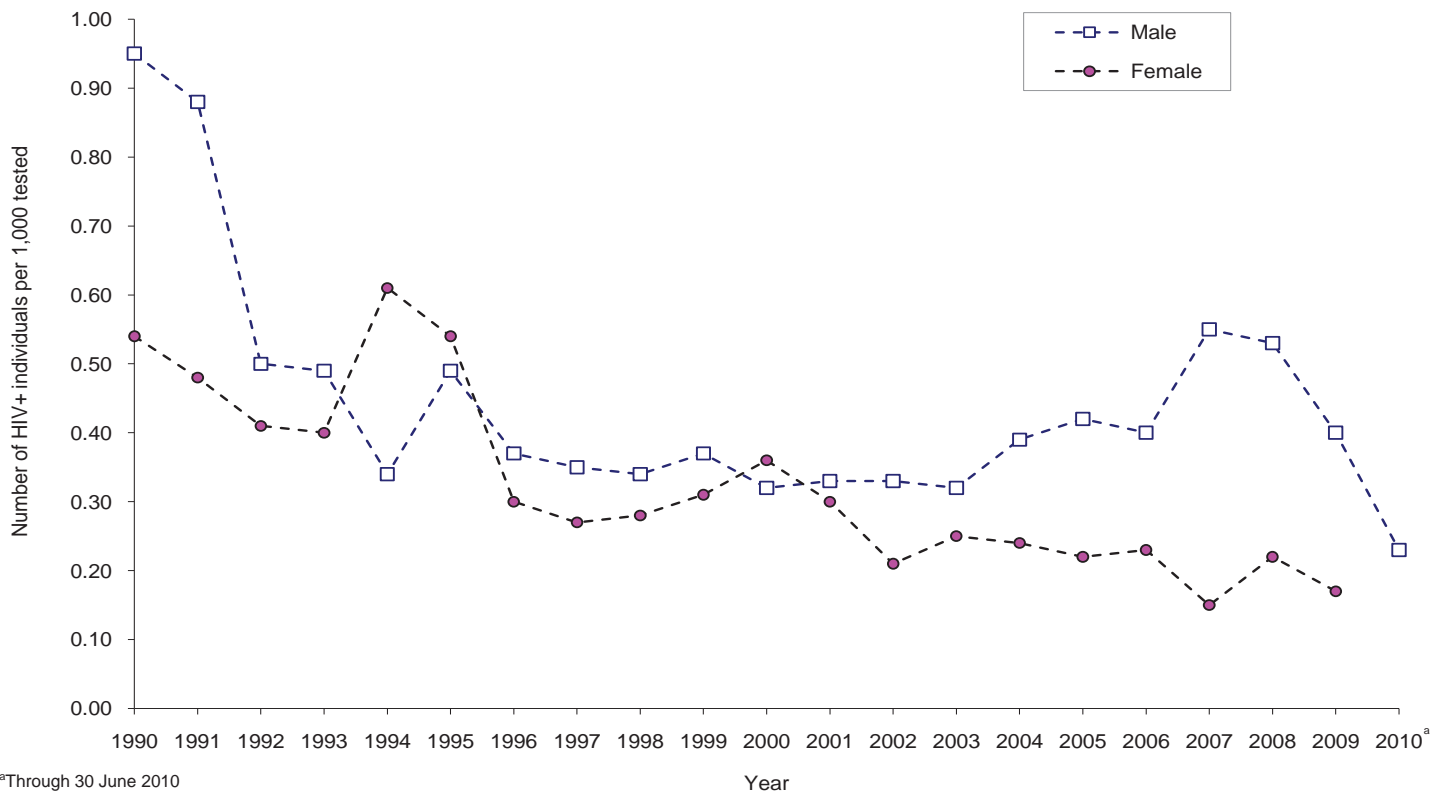
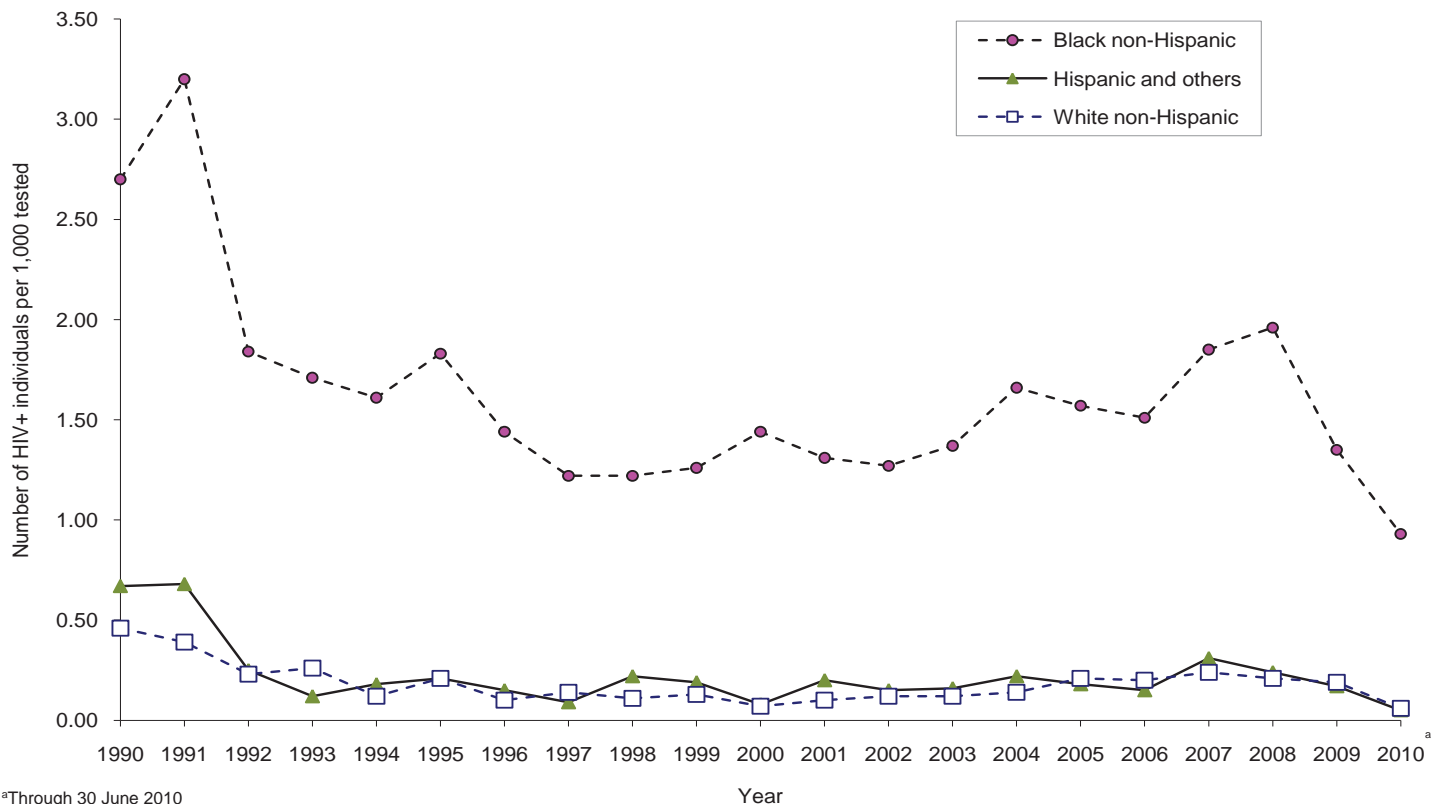
^aThrough 30 June 2010**Figure 1.** Diagnoses of HIV-1 infections by gender, civilian applicants for U.S. military service, January 1990-June 2010^aThrough 30 June 2010

Table 2. Diagnoses of HIV-1 infections by race/ethnicity, civilian applicants for U.S. military service, January 1990-June 2010

Year	Total HIV tests	Total persons tested	White non-Hispanic tested	Black non-Hispanic tested	Hispanic and others tested	Total HIV-1(+)	White non-Hispanic HIV-1(+)	Black non-Hispanic HIV-1(+)	Hispanic and others HIV-1(+)	Overall rate per 1000 tested	White non-Hispanic rate per 1000 tested	Black non-Hispanic rate per 1000 tested	Hispanic and others rate per 1000 tested
1990	369,747	358,913	256,600	64,743	37,570	318	118	175	25	0.89	0.46	2.70	0.67
1991	347,878	337,428	254,231	47,791	35,406	277	100	153	24	0.82	0.39	3.20	0.68
1992	326,304	309,939	224,817	49,013	36,109	151	52	90	9	0.49	0.23	1.84	0.25
1993	298,024	287,837	207,392	46,072	34,373	137	54	79	4	0.48	0.26	1.71	0.12
1994	266,368	260,710	174,900	46,649	39,161	103	21	75	7	0.40	0.12	1.61	0.18
1995	232,489	226,465	148,625	40,515	37,325	113	31	74	8	0.50	0.21	1.83	0.21
1996	259,046	255,417	167,522	47,361	40,534	91	17	68	6	0.36	0.10	1.44	0.15
1997	274,389	272,004	175,607	51,636	44,761	91	24	63	4	0.33	0.14	1.22	0.09
1998	270,434	266,297	170,666	49,242	46,389	88	18	60	10	0.33	0.11	1.22	0.22
1999	291,941	288,498	188,398	53,833	46,267	102	25	68	9	0.35	0.13	1.26	0.19
2000	312,913	310,437	202,522	58,480	49,435	103	15	84	4	0.33	0.07	1.44	0.08
2001	325,985	323,174	218,696	54,777	49,701	104	22	72	10	0.32	0.10	1.31	0.20
2002	335,987	333,627	228,346	52,743	52,538	102	27	67	8	0.31	0.12	1.27	0.15
2003	291,565	289,356	199,392	40,728	49,236	88	24	56	8	0.30	0.12	1.37	0.16
2004	233,741	232,143	156,095	31,319	44,729	84	22	52	10	0.36	0.14	1.66	0.22
2005	235,330	233,433	158,812	29,892	44,729	89	34	47	8	0.38	0.21	1.57	0.18
2006	264,049	262,043	179,267	34,986	47,790	96	36	53	7	0.37	0.20	1.51	0.15
2007	244,766	243,131	164,643	33,009	45,479	114	39	61	14	0.47	0.24	1.85	0.31
2008	290,365	288,694	192,229	42,326	54,139	137	41	83	13	0.47	0.21	1.96	0.24
2009	285,603	283,710	190,934	40,857	51,919	100	36	55	9	0.35	0.19	1.35	0.17
2010 ^a	138,722	138,033	97,434	20,326	20,273	26	6	19	1	0.19	0.06	0.93	0.05
Total	5,895,646	5,801,289	3,957,128	936,298	907,863	2,514	762	1,554	198	0.43	0.19	1.66	0.22

^aThrough 30 June 2010

Figure 2. Diagnoses of HIV-1 infections by race/ethnicity, civilian applicants for U.S. military service, January 1990-June 2010



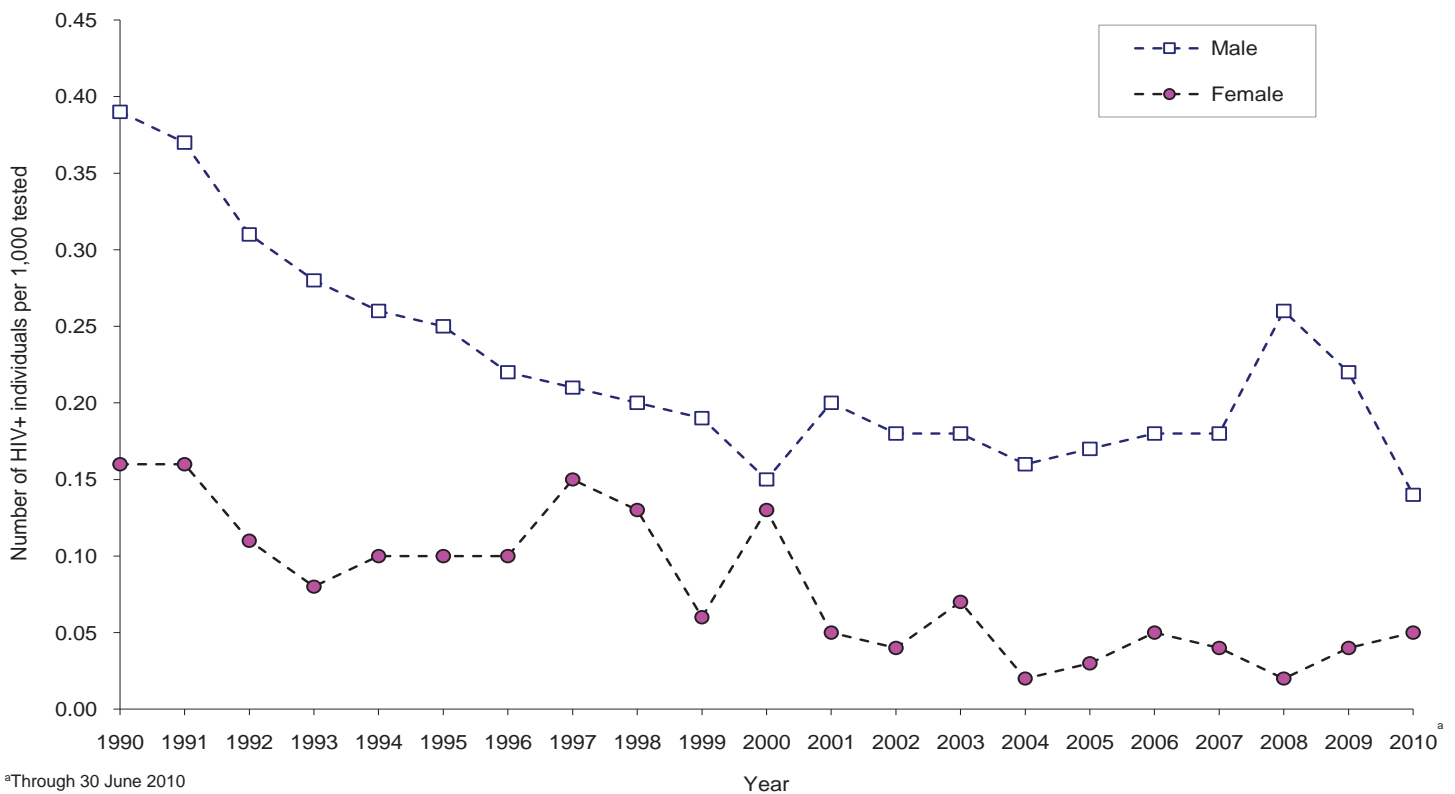
^aThrough 30 June 2010

Table 3. New diagnoses of HIV-1 infections, by gender, active component, U.S. Army, January 1990-June 2010

Year	Total HIV tests	Total persons tested	Males tested	Females tested	Total new HIV-1 (+)	New HIV-1 (+) Male	New HIV-1 (+) Female	Overall rate per 1000 tested	Male rate per 1000 tested	Female rate per 1000 tested	HIV-1(+) still in active service at year 2010
1990	522,034	433,671	378,673	54,998	155	146	9	0.36	0.39	0.16	2
1991	456,189	389,953	340,980	48,973	136	128	8	0.35	0.37	0.16	2
1992	524,825	435,522	380,158	55,365	125	119	6	0.29	0.31	0.11	3
1993	474,927	380,281	329,250	51,032	95	91	4	0.25	0.28	0.08	7
1994	433,095	350,053	301,024	49,029	84	79	5	0.24	0.26	0.10	5
1995	478,014	346,797	297,613	49,184	78	73	5	0.22	0.25	0.10	10
1996	456,276	338,720	288,171	50,549	68	63	5	0.20	0.22	0.10	9
1997	460,511	335,081	282,407	52,674	67	59	8	0.20	0.21	0.15	10
1998	425,276	329,811	277,108	52,703	62	55	7	0.19	0.20	0.13	10
1999	392,669	315,936	264,116	51,820	54	51	3	0.17	0.19	0.06	6
2000	396,745	319,646	266,248	53,398	48	41	7	0.15	0.15	0.13	18
2001	430,961	344,133	287,962	56,171	61	58	3	0.18	0.20	0.05	17
2002	452,650	350,058	294,399	55,659	56	54	2	0.16	0.18	0.04	19
2003	512,158	374,898	315,840	59,058	61	57	4	0.16	0.18	0.07	21
2004	518,954	399,477	339,696	59,781	54	53	1	0.14	0.16	0.02	23
2005	485,121	382,792	325,443	57,349	58	56	2	0.15	0.17	0.03	27
2006	502,953	411,413	352,518	58,895	66	63	3	0.16	0.18	0.05	33
2007	454,180	381,056	324,779	56,277	60	58	2	0.16	0.18	0.04	37
2008	511,130	420,023	361,163	58,860	94	93	1	0.22	0.26	0.02	66
2009	558,240	430,917	373,797	57,120	86	84	2	0.20	0.22	0.04	77
2010 ^a	307,749	259,661	223,040	36,621	34	32	2	0.13	0.14	0.05	34
Total	9,754,657	7,729,899	6,604,383	1,125,516	1,602	1,513	89	0.21	0.23	0.08	436

^aThrough 30 June 2010

Figure 3. New diagnoses of HIV-1 infections by gender, active component, U.S. Army, January 1990-June 2010



^aThrough 30 June 2010

During 2009, there were 86 incident diagnoses of HIV-1 infection among active component soldiers. The overall prevalence of seropositivity was 0.20 per 1,000 soldiers tested; on average, one new HIV-1 infected soldier was detected per 6,491 screening tests (Table 3).

From 2000 through 2007, annual seroprevalences were relatively stable; in 2008, there were more incident diagnoses of HIV-1 infections and a higher prevalence of HIV-1 antibody seropositivity than in any year since 1995. The increases in the numbers and prevalences of incident diagnoses of HIV-1 overall in 2008 were entirely attributable to increases among men; of note, in 2009, the prevalence of HIV-1 antibody seropositivity among male soldiers slightly declined. Annual seroprevalences of HIV-1 seropositivity have been relatively stable among active component female soldiers since 2001 (Figure 3). Finally, of the 1,602 active component soldiers diagnosed with HIV-1 infections since 1990, 436 (27.2%) remain in service in 2010 (Table 3).

Army National Guard: During the 18-month period from January 2009 through June 2010, 370,806 tests for antibodies to HIV-1 were conducted among 321,137 members of the U.S. Army National Guard. During the period, 72 soldiers (0.22 per 1,000 persons tested) were detected with antibodies to HIV-1 (Table 4).

During 2009, there were 56 incident diagnoses of HIV-1 infection among National Guard soldiers. The overall prevalence of seropositivity was 0.28 per 1,000 soldiers tested. The annual prevalence in 2009 was consistent with the annual prevalences documented in the Army National Guard since 2006. In 2009, on average, one new HIV-1 infected National Guard soldier was detected per 4,327 screening tests. Of the 940 National Guard soldiers diagnosed with HIV-1 infections since 1990, 156 (16.6%) remain in service in 2010 (Table 4).

Army Reserve: During the 18-month period from January 2009 through June 2010, 172,596 tests for antibodies to HIV-1 were conducted among 148,990 soldiers in the U.S. Army Reserve. During the period, 45 soldiers (0.30 per 1,000 tested) were detected with antibodies to HIV-1 (Table 5).

During calendar year 2009, there were 32 incident diagnoses of HIV-1 infection among U.S. Army Reserve soldiers; the overall seropositivity was 0.34 per 1,000 soldiers tested. In 2009, on average, one new HIV-1 infected soldier was detected per 3,492 screening tests. The prevalence of HIV-1 antibody seropositivity among females remains low; among female reserve soldiers, there were two incident diagnoses of HIV-1 seropositivity in 2009 and none in the first half of 2010. Of the 837 Army Reservists diagnosed with HIV-1 infections since 1990, 166 (19.8%) remain in service in 2010 (Table 5).

U.S. Navy

Active component: During the 18-month period from January 2009 through June 2010, 430,731 tests for antibodies to HIV-1 were conducted among 376,865 sailors of the active component of the U.S. Navy. During the period, 121 sailors (0.32 per 1,000 persons tested) were detected with antibodies to HIV-1 (Table 6).

During 2009, there were 83 incident diagnoses of HIV-1 infections among active component sailors. The overall prevalence of seropositivity was 0.35 per 1,000 sailors tested. Rates in females have remained low; among female active component sailors, there was one incident diagnosis of HIV-1 seropositivity in 2009 and none in the first half of 2010 (Table 6, Figure 4). In 2009, on average, one new HIV-1 infected sailor was detected per 3,383 screening tests. Of the 2,138 active component sailors diagnosed with HIV-1 infections since 1990, 454 (21.2%) remain in service in 2010 (Table 6).

Navy Reserve: During the 18-month period from January 2009 through June 2010, 84,006 tests for antibodies to HIV-1 were conducted among 72,408 sailors in the U.S. Navy Reserve. During the period, 26 sailors (0.36 per 1,000 tested) were detected with antibodies to HIV-1 (Table 7).

During calendar year 2009, there were 10 incident diagnoses of HIV-1 infection among U.S. Navy Reserve sailors; the overall seropositivity was 0.22 per 1,000 sailors tested. Among female reserve sailors, there have been no incident diagnoses of HIV-1 seropositivity since 2007 (and only 13 reported in the past 20 years).

In 2009, on average, one new HIV-1 infected sailor was detected per 5,418 screening tests. Of the 371 reserve component sailors diagnosed with HIV-1 infections since 1990, 73 (19.7%) remain in service (Table 7).

U.S. Marine Corps

Active component: During the 18-month period from January 2009 through June 2010, 291,141 tests for antibodies to HIV-1 were conducted among 245,114 members of the active component of the U.S. Marine Corps. During the period, 32 Marines (0.13 per 1,000 persons tested) were detected with antibodies to HIV-1 (Table 8).

During 2009, there were 23 incident diagnoses of HIV-1 infection among active component Marines. The overall prevalence of seropositivity was 0.15 per 1,000 Marines tested (Table 8, Figure 5). In 2009, on average, one new HIV-1 infected Marine was detected per 8,354 screening tests. Of the 417 active component Marines diagnosed with HIV-1 infections since 1990, 94 (22.5%) remain in service in 2010 (Table 8).

Table 4. New diagnoses of HIV-1 infection, by gender, National Guard, U.S. Army, January 1990-June 2010

Year	Total HIV tests	Total persons tested	Males tested	Females tested	Total new HIV-1 (+)	New HIV-1 (+) Male	New HIV-1 (+) Female	Overall rate per 1000 tested	Male rate per 1000 tested	Female rate per 1000 tested	HIV-1(+) still in Guard at year 2010
1990	275,467	245,690	226,841	18,849	83	80	3	0.34	0.35	0.16	0
1991	232,945	211,634	196,008	15,626	68	63	5	0.32	0.32	0.32	1
1992	286,329	258,590	238,258	20,332	73	69	4	0.28	0.29	0.20	0
1993	202,429	184,313	169,432	14,881	52	51	1	0.28	0.30	0.07	0
1994	229,540	208,318	190,413	17,905	56	53	3	0.27	0.28	0.17	0
1995	172,236	159,991	146,645	13,346	42	39	3	0.26	0.27	0.22	3
1996	93,123	85,030	76,065	8,965	28	27	1	0.33	0.35	0.11	0
1997	106,478	98,365	86,890	11,475	30	29	1	0.30	0.33	0.09	1
1998	113,294	104,584	92,140	12,444	30	29	1	0.29	0.31	0.08	1
1999	121,754	112,042	98,515	13,527	31	30	1	0.28	0.30	0.07	4
2000	115,800	107,622	93,109	14,513	31	27	4	0.29	0.29	0.28	5
2001	144,110	130,062	113,268	16,794	32	29	3	0.25	0.26	0.18	1
2002	156,634	141,298	123,220	18,078	40	37	3	0.28	0.30	0.17	2
2003	264,369	206,086	181,588	24,498	47	43	4	0.23	0.24	0.16	9
2004	247,971	200,804	176,970	23,834	43	42	1	0.21	0.24	0.04	7
2005	262,376	215,796	191,112	24,684	41	40	1	0.19	0.21	0.04	12
2006	196,104	175,109	151,397	23,712	38	33	5	0.22	0.22	0.21	12
2007	201,772	182,377	157,842	24,535	52	49	3	0.29	0.31	0.12	19
2008	234,672	209,529	180,395	29,134	51	49	2	0.24	0.27	0.07	23
2009	242,317	201,754	174,596	27,158	56	54	2	0.28	0.31	0.07	40
2010 ^a	128,489	119,383	103,351	16,032	16	15	1	0.13	0.15	0.06	16
Total	4,028,209	3,558,377	3,168,053	390,324	940	888	52	0.26	0.28	0.13	156

^aThrough 30 June 2010**Table 5.** New diagnoses of HIV-1 infection, by gender, reserve component, U.S. Army, January 1990-June 2010

Year	Total HIV tests	Total persons tested	Males tested	Females tested	Total new HIV-1 (+)	New HIV-1 (+) Male	New HIV-1 (+) Female	Overall rate per 1000 tested	Male rate per 1000 tested	Female rate per 1000 tested	HIV-1(+) still in Reserve at year 2010
1990	211,703	181,512	143,399	38,114	104	101	3	0.57	0.70	0.08	0
1991	159,533	142,480	112,509	29,971	83	75	8	0.58	0.67	0.27	0
1992	215,184	184,429	145,535	38,894	77	64	13	0.42	0.44	0.33	1
1993	171,975	149,825	118,475	31,350	53	50	3	0.35	0.42	0.10	0
1994	156,878	138,566	108,134	30,432	32	26	6	0.23	0.24	0.20	0
1995	124,940	111,715	86,554	25,161	39	33	6	0.35	0.38	0.24	2
1996	75,858	67,918	50,823	17,095	19	19	0	0.28	0.37	0.00	0
1997	68,387	62,165	46,094	16,071	14	12	2	0.23	0.26	0.12	0
1998	61,246	55,993	41,169	14,824	20	19	1	0.36	0.46	0.07	1
1999	62,723	56,495	41,969	14,526	22	17	5	0.39	0.41	0.34	3
2000	65,227	59,693	43,756	15,937	13	10	3	0.22	0.23	0.19	4
2001	79,549	71,273	53,064	18,209	32	28	4	0.45	0.53	0.22	7
2002	89,328	80,706	60,878	19,828	40	31	9	0.50	0.51	0.45	9
2003	181,206	133,216	102,429	30,787	70	67	3	0.53	0.65	0.10	21
2004	138,055	114,218	88,687	25,531	33	31	2	0.29	0.35	0.08	6
2005	116,407	99,297	78,039	21,258	23	22	1	0.23	0.28	0.05	10
2006	96,668	84,682	66,145	18,537	34	31	3	0.40	0.47	0.16	18
2007	110,743	98,804	76,525	22,279	42	40	2	0.43	0.52	0.09	20
2008	109,183	97,455	74,534	22,921	42	37	5	0.43	0.50	0.22	27
2009	111,737	94,254	73,196	21,058	32	30	2	0.34	0.41	0.09	24
2010 ^a	60,859	54,736	42,877	11,859	13	13	0	0.24	0.30	0.00	13
Total	2,467,389	2,139,432	1,654,790	484,642	837	756	81	0.39	0.46	0.17	166

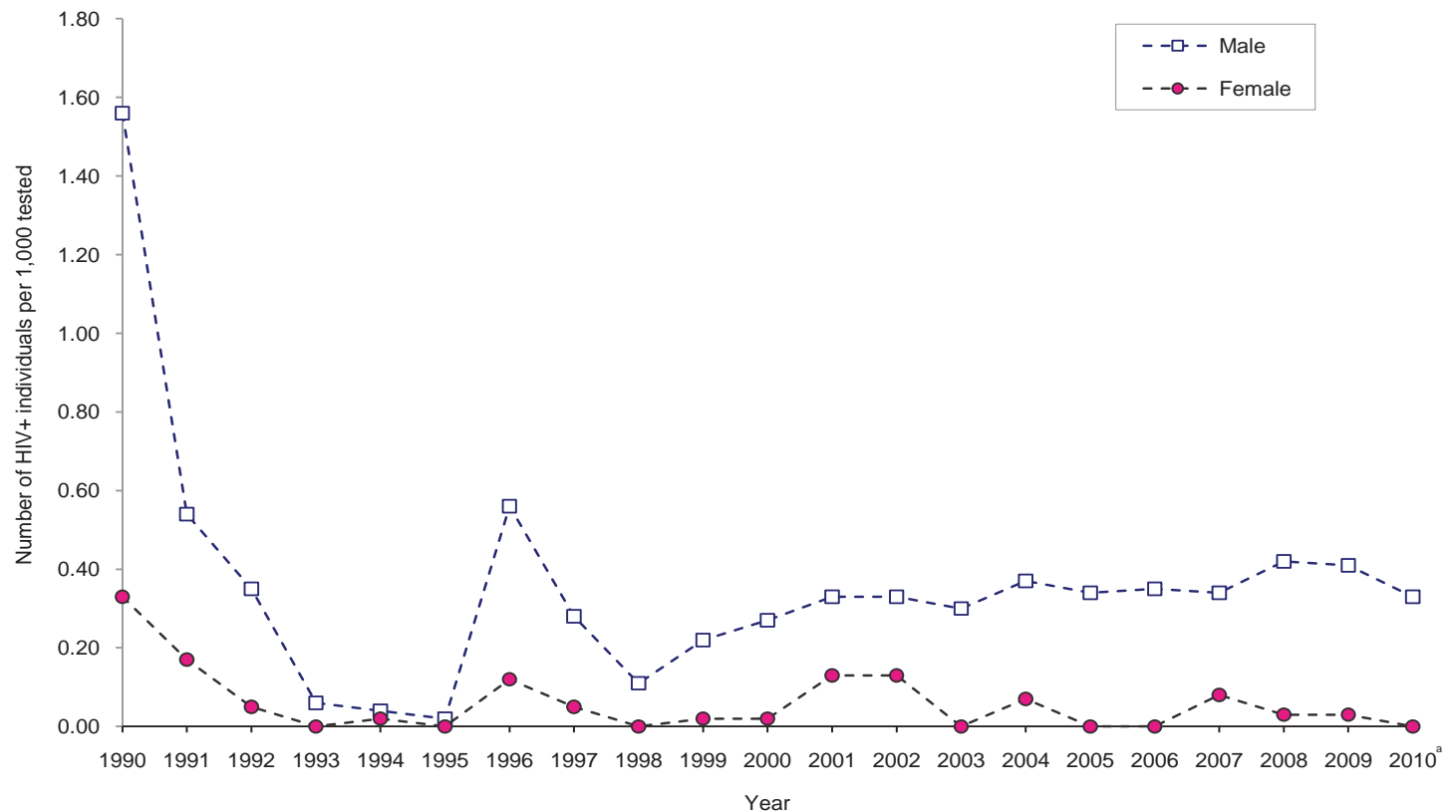
^aThrough 30 June 2010

Table 6. Diagnoses of HIV-1 infections, by gender, active component, U.S. Navy, January 1990-June 2010

Year	Total HIV tests	Total persons tested	Males tested	Females tested	Total new HIV-1 (+)	New HIV-1 (+) Male	New HIV-1 (+) Female	Overall rate per 1000 tested	Male rate per 1000 tested	Female rate per 1000 tested	HIV-1(+) still in active service at year 2010
1990	449,423	392,582	356,499	36,083	569	557	12	1.45	1.56	0.33	0
1991	442,873	385,321	349,327	35,994	195	189	6	0.51	0.54	0.17	0
1992	469,169	401,016	361,214	39,802	128	126	2	0.32	0.35	0.05	1
1993	492,371	411,890	369,964	41,926	24	24	0	0.06	0.06	0.00	0
1994	456,858	381,534	336,742	44,792	15	14	1	0.04	0.04	0.02	0
1995	390,385	329,332	289,194	40,138	5	5	0	0.02	0.02	0.00	1
1996	412,836	340,359	297,466	42,893	173	168	5	0.51	0.56	0.12	21
1997	404,712	333,755	289,835	43,920	82	80	2	0.25	0.28	0.05	11
1998	386,416	314,005	269,559	44,446	30	30	0	0.10	0.11	0.00	3
1999	352,590	287,455	245,654	41,801	55	54	1	0.19	0.22	0.02	8
2000	378,374	299,397	255,128	44,269	71	70	1	0.24	0.27	0.02	19
2001	381,556	304,287	257,845	46,442	92	86	6	0.30	0.33	0.13	20
2002	368,061	302,277	255,760	46,517	90	84	6	0.30	0.33	0.13	29
2003	388,560	312,016	264,668	47,348	79	79	0	0.25	0.30	0.00	19
2004	343,845	281,854	237,730	44,124	90	87	3	0.32	0.37	0.07	28
2005	356,282	288,236	243,323	44,913	82	82	0	0.28	0.34	0.00	33
2006	319,558	267,104	225,609	41,495	79	79	0	0.30	0.35	0.00	40
2007	282,501	239,413	201,472	37,941	72	69	3	0.30	0.34	0.08	51
2008	286,917	242,669	204,001	38,668	86	85	1	0.35	0.42	0.03	65
2009	280,771	238,092	198,846	39,246	83	82	1	0.35	0.41	0.03	67
2010 ^a	149,960	138,773	115,077	23,696	38	38	0	0.27	0.33	0.00	38
Total	7,794,018	6,491,367	5,624,913	866,454	2,138	2,088	50	0.33	0.37	0.06	454

^aThrough 30 June 2010

Figure 4. New diagnoses of HIV-1 infection, by gender, active component, U.S. Navy, January 1990-June 2010



^aThrough 30 June 2010

Table 7. New diagnoses of HIV-1 infections by gender, reserve component, U.S. Navy, January 1990-June 2010

Year	Total HIV tests	Total persons tested	Males tested	Females tested	Total new HIV-1 (+)	New HIV-1 (+) Male	New HIV-1 (+) Female	Overall rate per 1000 tested	Male rate per 1000 tested	Female rate per 1000 tested	HIV-1(+) still in Reserve at year 2010
1990	107,919	94,296	80,314	13,982	54	52	2	0.57	0.65	0.14	0
1991	108,691	96,090	81,786	14,304	38	37	1	0.40	0.45	0.07	1
1992	114,646	100,443	85,233	15,210	23	21	2	0.23	0.25	0.13	0
1993	111,818	97,525	82,186	15,339	6	6	0	0.06	0.07	0.00	0
1994	96,375	85,994	71,822	14,172	5	5	0	0.06	0.07	0.00	0
1995	76,580	68,962	57,016	11,946	0	0	0	0.00	0.00	0.00	0
1996	81,614	71,250	58,748	12,502	20	18	2	0.28	0.31	0.16	0
1997	81,167	71,314	58,580	12,734	16	15	1	0.22	0.26	0.08	2
1998	79,395	69,133	56,440	12,693	4	4	0	0.06	0.07	0.00	0
1999	76,858	67,053	54,370	12,683	24	22	2	0.36	0.40	0.16	4
2000	74,280	65,113	52,414	12,699	15	14	1	0.23	0.27	0.08	0
2001	79,820	67,844	54,711	13,133	22	22	0	0.32	0.40	0.00	3
2002	85,249	71,060	56,906	14,154	26	25	1	0.37	0.44	0.07	4
2003	93,421	73,876	59,064	14,812	25	25	0	0.34	0.42	0.00	5
2004	87,264	71,479	57,248	14,231	11	11	0	0.15	0.19	0.00	2
2005	85,073	68,377	54,628	13,749	18	18	0	0.26	0.33	0.00	3
2006	59,297	49,808	40,252	9,556	12	12	0	0.24	0.30	0.00	5
2007	57,492	48,959	39,693	9,266	15	14	1	0.31	0.35	0.11	10
2008	54,595	46,946	38,110	8,836	11	11	0	0.23	0.29	0.00	8
2009	54,179	45,292	36,839	8,453	10	10	0	0.22	0.27	0.00	10
2010 ^a	29,827	27,116	22,161	4,955	16	16	0	0.59	0.72	0.00	16
Total	1,695,560	1,457,930	1,198,520	259,410	371	358	13	0.25	0.30	0.05	73

^aThrough 30 June 2010

Reserve component: During the 18-month period from January 2009 through June 2010, 46,806 tests for antibodies to HIV-1 were conducted among 41,772 Marines in the U.S. Marine Corps Reserve. During the period, 11 Marine Corps Reservists (0.26 per 1,000 tested) were detected with antibodies to HIV-1 (Table 9). During 2009, there were six incident diagnoses of HIV-1 infection among Marine Corps Reservists; the overall seropositivity was 0.24 per 1,000 Marines tested. In 2009, on average, one new HIV-1 infected Marine was detected per 4,888 screening tests (Table 9). Of note, in the past 20 years, there have been no incident diagnoses of HIV-1 infection among female Marine Reservists. Of the 102 Marine Reservists diagnosed with HIV-1 infections since 1990, 25 (24.5%) remain in service in 2010 (Table 9).

U.S. Coast Guard

Active component: During the 18-month period from January 2009 through June 2010, 34,515 tests for antibodies to HIV-1 were conducted among 32,682 members of the active component of the U.S. Coast Guard. During the period, nine Coast Guard members (0.28 per 1,000 persons tested) were detected with antibodies to HIV-1 (data not shown).

During 2009, there were six incident diagnoses of HIV-1 infection among active component Coast Guard members.

The overall prevalence of seropositivity was 0.29 per 1,000 Coast Guardsmen tested. In 2009, on average, one new HIV-1 Coast Guard member was detected per 3,680 screening tests. Of the 48 active component Coast Guardsman diagnosed with HIV-1 infections since 1990, 21 (43.8%) remain in service. In the first half of 2010, two female Coast Guard members were diagnosed with HIV-1; these were the first incident diagnoses of seropositivity among females since 1996 (data not shown).

Reserve component: In the twenty year surveillance period, there were three incident diagnoses of HIV-1 seropositivity among male members of the Coast Guard Reserve; no members remain in service (data not shown).

U.S. Air Force

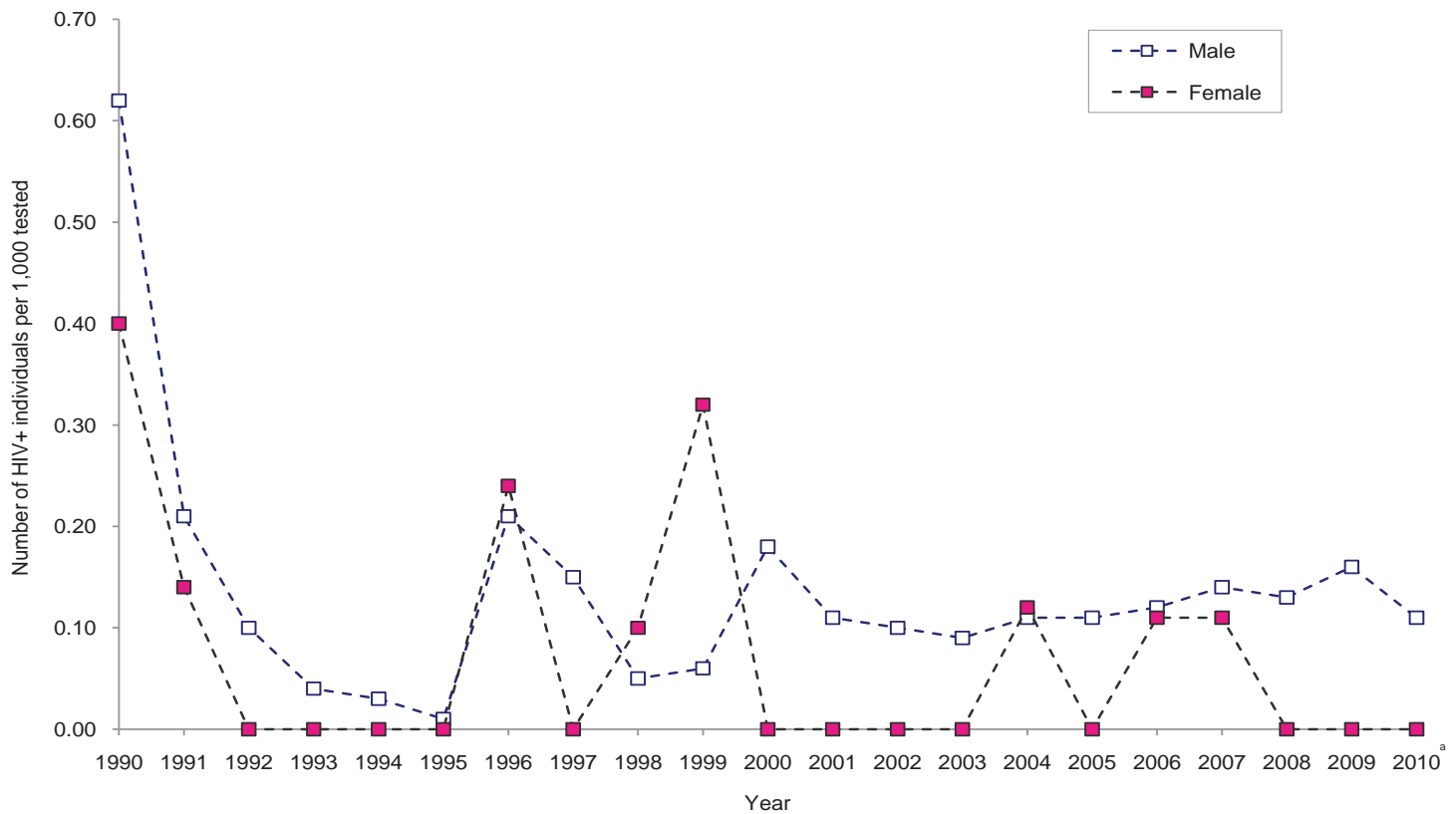
Active component: From January 2009 through July 2010, 464,246 tests for antibodies to HIV-1 were conducted among 404,272 members of the active component of the U.S. Air Force. During the period, 75 airmen (0.19 per 1,000 tested) were detected with antibodies to HIV-1. On average, one new HIV-1 infection was detected per 6,190 screening tests (Table 10). The seroprevalence among active component airmen tested in 2009 was slightly lower than in the prior two years. Of note, since 2000, there have been only 14 incident

Table 8. New diagnoses of HIV-1 infections by gender, active component, U.S. Marine Corps, January 1990-June 2010

Year	Total HIV tests	Total persons tested	Males tested	Females tested	Total new HIV-1 (+)	New HIV-1 (+) Male	New HIV-1 (+) Female	Overall rate per 1000 tested	Male rate per 1000 tested	Female rate per 1000 tested	HIV-1(+) still in active service at year 2010
1990	182,699	150,631	143,084	7,547	92	89	3	0.61	0.62	0.40	1
1991	183,317	156,201	149,044	7,157	32	31	1	0.20	0.21	0.14	1
1992	199,312	162,631	155,205	7,426	16	16	0	0.10	0.10	0.00	1
1993	198,216	164,958	157,291	7,667	6	6	0	0.04	0.04	0.00	0
1994	192,479	160,820	153,465	7,355	4	4	0	0.02	0.03	0.00	0
1995	182,689	152,133	144,783	7,350	2	2	0	0.01	0.01	0.00	0
1996	195,479	159,872	151,456	8,416	34	32	2	0.21	0.21	0.24	4
1997	196,273	161,986	152,504	9,482	23	23	0	0.14	0.15	0.00	2
1998	203,580	165,115	155,373	9,742	9	8	1	0.05	0.05	0.10	1
1999	181,313	148,921	139,472	9,449	12	9	3	0.08	0.06	0.32	3
2000	179,898	146,273	136,875	9,398	24	24	0	0.16	0.18	0.00	4
2001	192,237	155,146	145,369	9,777	16	16	0	0.10	0.11	0.00	5
2002	186,750	151,865	142,392	9,473	14	14	0	0.09	0.10	0.00	4
2003	206,894	158,105	148,336	9,769	13	13	0	0.08	0.09	0.00	3
2004	174,450	139,922	131,383	8,539	15	14	1	0.11	0.11	0.12	6
2005	204,044	159,537	149,520	10,017	16	16	0	0.10	0.11	0.00	5
2006	186,168	147,623	138,389	9,234	18	17	1	0.12	0.12	0.11	5
2007	183,477	148,826	139,602	9,224	20	19	1	0.13	0.14	0.11	12
2008	188,537	151,327	141,677	9,650	19	19	0	0.13	0.13	0.00	12
2009	192,131	153,998	143,819	10,179	23	23	0	0.15	0.16	0.00	16
2010 ^a	99,010	91,116	84,644	6,472	9	9	0	0.10	0.11	0.00	9
Total	3,908,953	3,187,006	3,003,683	183,323	417	404	13	0.13	0.13	0.07	94

^aThrough 30 June 2010

Figure 5. New diagnoses of HIV-1 infection, active component, U.S. Marine Corps, January 1990-June 2010



^aThrough 30 June 2010

Table 9. New diagnoses of HIV-1 infection by gender, reserve component, U.S. Marine Corps, January 1990-June 2010

Year	Total HIV tests	Total persons tested	Males tested	Females tested	Total new HIV-1 (+)	New HIV-1 (+) Male	New HIV-1 (+) Female	Overall rate per 1000 tested	Male rate per 1000 tested	Female rate per 1000 tested	HIV-1(+) still in Reserve at year 2010
1990	44,964	35,827	34,603	1,224	14	14	0	0.39	0.40	0.00	0
1991	35,791	30,646	29,628	1,018	5	5	0	0.16	0.17	0.00	0
1992	38,651	32,958	31,928	1,030	3	3	0	0.09	0.09	0.00	0
1993	41,336	33,612	32,470	1,142	0	0	0	0.00	0.00	0.00	0
1994	41,384	33,741	32,681	1,060	0	0	0	0.00	0.00	0.00	0
1995	38,778	31,572	30,435	1,137	1	1	0	0.03	0.03	0.00	0
1996	39,701	31,714	30,486	1,228	5	5	0	0.16	0.16	0.00	0
1997	38,620	30,585	29,360	1,225	4	4	0	0.13	0.14	0.00	0
1998	39,506	31,574	30,243	1,331	1	1	0	0.03	0.03	0.00	0
1999	37,440	30,535	29,237	1,298	3	3	0	0.10	0.10	0.00	0
2000	34,244	28,608	27,333	1,275	2	2	0	0.07	0.07	0.00	0
2001	37,201	30,581	29,253	1,328	7	7	0	0.23	0.24	0.00	1
2002	38,766	32,041	30,641	1,400	7	7	0	0.22	0.23	0.00	2
2003	46,739	33,573	32,171	1,402	7	7	0	0.21	0.22	0.00	2
2004	37,131	29,816	28,587	1,229	5	5	0	0.17	0.17	0.00	1
2005	42,537	33,990	32,495	1,495	8	8	0	0.24	0.25	0.00	1
2006	30,484	26,105	24,944	1,161	6	6	0	0.23	0.24	0.00	0
2007	29,871	25,542	24,413	1,129	6	6	0	0.23	0.25	0.00	3
2008	29,489	25,953	24,859	1,094	7	7	0	0.27	0.28	0.00	4
2009	29,327	25,028	23,988	1,040	6	6	0	0.24	0.25	0.00	6
2010 ^a	17,479	16,744	16,063	681	5	5	0	0.30	0.31	0.00	5
Total	769,439	630,745	605,818	24,927	102	102	0	0.16	0.17	0.00	25

^aThrough 30 June 2010

diagnoses of HIV-1 infections among active component Air Force females (Table 10, Figure 6).

Air National Guard: From January 2009 through July 2010, 46,322 tests for antibodies to HIV-1 were conducted among 40,649 members of the Air National Guard. During the period, four airmen (0.10 per 1,000 tested) were detected with antibodies to HIV-1. No female Air National Guard member has been diagnosed with HIV-1 infection since 2004 (and only one since 2000) (Table 11). The overall prevalence in 2009 was slightly higher than in 2008. In 2009, on average, one new HIV-1 infection was detected per 11,581 screening tests of Air National Guard members (Table 11).

Reserve component: From January 2009 through July 2010, 43,177 tests for antibodies to HIV-1 were conducted among 39,510 members of the U.S. Air Force Reserve. During the period, 13 airmen (0.33 per 1,000 tested) were detected with antibodies to HIV-1. In 2009, on average, one new HIV-1 infection was detected per 3,321 screening tests (Table 12). The seroprevalence among those tested in 2009 was relatively low compared to recent prior years (Table 12).

Data summaries for the U.S. Air Force provided by USAFSAM.

Editorial comment:

The U.S. military began routine screening for antibodies to HIV-1 among civilian applicants for all military services in October 1985. Routine periodic screening of all members of all components of the Services began shortly thereafter. During the “first rounds” of HIV-1 antibody testing in the Services, detections of “new” infections were relatively frequent because most service members had not previously been tested; both longstanding (prevalent) and recently acquired (incident) infections were subject to detection through routine screening. By 1990, nearly all service members had been tested for antibodies to HIV-1 at least once — as civilian applicants for military service and/or while serving in the military. As a result, since then, routine periodic screening has detected infections that were acquired since the last negative test of the service member (incident infections).

Results of routine, periodic screening for HIV-1 in dynamic (i.e., continuously changing) military populations must be interpreted cautiously; in particular, comparisons of annual rates and trends of seropositivity across services and components can be misleading. For example, prevalences of seropositivity in repeatedly screened populations depend not only on rates at which new infections are acquired but also on testing frequencies. Even if rates of acquisition of

Table 10. New diagnoses of HIV-1 infections, by gender, active component, U.S. Air Force, January 1996-July 2010

Year	Total HIV tests	Total persons tested	Males tested	Females tested	Total new HIV-1 (+)	New HIV-1 (+) Male	New HIV-1 (+) Female	Overall rate per 1000 tested	Male rate per 1000 tested	Female rate per 1000 tested
1996	123,922	123,801	93,143	30,385	36	34	2	0.29	0.37	0.07
1997	144,977	144,834	109,312	33,512	24	21	3	0.17	0.19	0.09
1998	179,396	178,826	134,975	39,489	34	34	0	0.19	0.25	0.00
1999	203,096	201,349	155,480	43,244	20	19	1	0.10	0.12	0.02
2000	228,590	226,224	175,157	48,578	26	24	2	0.11	0.14	0.04
2001	239,369	237,980	183,467	51,958	35	35	0	0.15	0.19	0.00
2002	258,981	257,756	198,449	56,132	38	36	2	0.15	0.18	0.04
2003	261,593	260,764	201,029	57,027	30	28	2	0.12	0.14	0.04
2004	271,384	271,297	208,618	59,835	19	18	1	0.07	0.09	0.02
2005	245,644	235,706	186,073	48,648	26	24	2	0.11	0.13	0.04
2006	246,073	224,566	180,212	44,354	33	32	1	0.15	0.18	0.02
2007	238,120	213,755	171,074	42,681	56	55	1	0.26	0.32	0.02
2008	268,263	237,393	190,215	47,178	49	49	0	0.21	0.26	0.00
2009	290,056	244,077	195,826	48,251	45	44	1	0.18	0.22	0.02
2010 ^a	174,190	160,195	128,589	31,606	30	28	2	0.19	0.22	0.06
Total	3,373,654	3,218,523	2,511,619	682,878	501	481	20	0.16	0.19	0.03

^aThrough 31 July 2010

Figure 6. New diagnoses of HIV-1 infection by gender, active component, U.S. Air Force, January 1996-July 2010



^aThrough 31 July 2010

Table 11. New diagnoses of HIV-1 infections, by gender, U.S. Air National Guard, January 1996-July 2010

Year	Total HIV tests	Total persons tested	Males tested	Females tested	Total new HIV-1 (+)	New HIV-1 (+) Male	New HIV-1 (+) Female	Overall rate per 1000 tested	Male rate per 1000 tested	Female rate per 1000 tested
1996	24,407	24,383	20,532	3,657	0	0	0	0.00	0.00	0.00
1997	24,473	24,454	20,137	3,494	0	0	0	0.00	0.00	0.00
1998	28,514	28,492	23,041	3,908	0	0	0	0.00	0.00	0.00
1999	28,787	28,761	23,893	4,173	0	0	0	0.00	0.00	0.00
2000	36,128	36,115	29,992	5,207	0	0	0	0.00	0.00	0.00
2001	43,087	43,075	34,180	5,882	1	1	0	0.02	0.03	0.00
2002	41,120	41,088	33,666	6,057	8	8	0	0.19	0.24	0.00
2003	41,956	41,922	34,808	6,036	7	7	0	0.17	0.20	0.00
2004	43,704	43,666	35,313	7,166	10	9	1	0.23	0.25	0.14
2005	37,999	35,643	28,903	6,093	11	11	0	0.31	0.38	0.00
2006	23,902	21,861	18,020	3,841	2	2	0	0.09	0.11	0.00
2007	29,692	26,729	22,338	4,391	1	1	0	0.04	0.04	0.00
2008	25,976	23,004	19,020	3,984	2	2	0	0.09	0.11	0.00
2009	31,577	27,083	22,684	4,399	4	4	0	0.15	0.18	0.00
2010 ^a	14,745	13,566	11,247	2,319	0	0	0	0.00	0.00	0.00
Total	476,067	459,842	377,774	70,607	46	45	1	0.10	0.12	0.01

^aThrough 31 July 2010**Table 12.** New diagnoses of HIV-1 infections, by gender, reserve component, U.S. Air Force, January 1996-July 2010

Year	Total HIV tests	Total persons tested	Males tested	Females tested	Total new HIV-1 (+)	New HIV-1 (+) Male	New HIV-1 (+) Female	Overall rate per 1000 tested	Male rate per 1000 tested	Female rate per 1000 tested
1996	16,614	16,612	12,790	3,709	1	1	0	0.06	0.08	0.00
1997	18,561	18,555	14,101	4,143	0	0	0	0.00	0.00	0.00
1998	19,027	19,003	14,346	4,141	2	2	0	0.11	0.14	0.00
1999	14,120	14,095	10,613	3,159	3	2	1	0.21	0.19	0.32
2000	13,283	13,272	10,157	2,719	0	0	0	0.00	0.00	0.00
2001	12,599	12,593	9,347	2,212	9	9	0	0.71	0.96	0.00
2002	22,452	22,432	16,989	4,440	10	10	0	0.45	0.59	0.00
2003	35,683	35,654	27,162	7,139	9	9	0	0.25	0.33	0.00
2004	31,237	31,234	23,675	6,584	6	6	0	0.19	0.25	0.00
2005	35,874	23,927	18,566	5,032	12	12	0	0.50	0.65	0.00
2006	25,545	23,636	18,279	5,357	4	4	0	0.17	0.22	0.00
2007	30,415	28,141	21,959	6,182	12	11	1	0.43	0.50	0.16
2008	26,487	24,054	18,581	5,473	5	5	0	0.21	0.27	0.00
2009	27,720	24,882	19,364	5,518	6	6	0	0.24	0.31	0.00
2010 ^a	15,457	14,628	11,292	3,336	7	7	0	0.48	0.62	0.00
Total	345,074	322,718	247,221	69,144	86	84	2	0.27	0.34	0.03

^aThrough 31 July 2010

HIV-1 infections (infection incidence rates) were identical in two serially tested populations, prevalences of seropositivity would be different if the intervals between testing rounds were not the same (because the longer the interval, the more undetected infections accumulate between testing rounds). Thus, for example, increases or declines in observed seroprevalences during routine periodic screening could reflect changes in rates of infection acquisition and/or decreases or increases, respectively, in test intervals. In turn, differences in observed seroprevalences across services or components could reflect differences in rates of infection acquisition and/or differences in testing policies and practices. Of note in this

regard, there is now a standard two-year interval (applicable to all services) between mandatory period HIV-1 antibody tests; still however, some service members are tested more frequently (given other indications for testing).

With the above caveats in mind, the monitoring of results and trends of HIV-1 seroprevalences in various military populations can help target and focus prevention initiatives. The results presented here suggest that, in general, prevalences of HIV-1 infection among civilian applicants for military service and among active and reserve component members of the Services remain relatively low, particularly among females.

Sentinel reportable events among service members and beneficiaries at U.S. Air Force medical facilities, cumulative numbers^a for calendar years through 31 August 2009 and 31 August 2010^b



Air Force

Reporting locations	Number of reports all events ^c		Food-borne						Vaccine preventable					
			Campylobacter		Salmonella		Shigella		Hepatitis A		Hepatitis B		Varicella ^d	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Air Combat Cmd	1,035	921	5	2	14	7	2	3	.	1	4	12	3	1
Air Education & Training Cmd	1,129	863	4	8	19	3	5	2	3	3	8	17	.	2
Air Force Dist. of Washington	140	124	.	4	2	.	.	1	.	.	2	2	.	.
Air Force Materiel Cmd	413	325	1	4	8	10	.	.	1	.	7	1	.	.
Air Force Special Ops Cmd	128	113	1	1	4	10	.	1	.	.	.	1	.	.
Air Force Space Cmd	222	202	2	.	6	5	.	.	1	1	1	1	.	.
Air Mobility Cmd	611	348	4	2	7	4	4	.	1	2	7	2	1	.
Pacific Air Forces	386	537	2	1	6	6	.	2	.	.	4	2	2	1
U.S. Air Forces in Europe	432	308	3	2	4	7	.	.	.	.	4	1	1	3
U.S. Air Force Academy	42	41	1	.	2	1	.	.	.	.	.	2	.	.
Other	70	51	1	1	3	5	.	2	.	.	.	.	.	.
Total	4,608	3,833	24	25	75	58	11	11	6	7	37	41	7	7

Reporting location	Arthropod-borne				Sexually transmitted						Environmental				Travel associated			
	Lyme disease		Malaria		Chlamydia		Gonorrhea		Syphilis		Cold ^d		Heat ^d		Q Fever		Tuberculosis	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Air Combat Cmd	9	9	.	.	908	780	77	83	3	5	5	4	5	13	.	.	.	1
Air Education & Training Cmd	6	.	2	2	961	738	104	82	4	4	3	.	9	1	.	.	1	1
Air Force Dist. of Washington	7	5	.	.	119	90	10	18	.	.	.	.	4	.	.	.	.	.
Air Force Materiel Cmd	11	2	.	.	348	270	32	30	3	2	.	.	2	6	.	.	.	.
Air Force Special Ops Cmd	1	.	.	.	115	94	5	4	1	1	1	1	.	.	.	.	.	.
Air Force Space Cmd	1	1	.	2	201	178	8	12	.	.	.	1	1	1	.	.	1	.
Air Mobility Cmd	21	12	1	2	497	291	51	26	2	3	14	2	1	2	.	.	.	.
Pacific Air Forces	.	.	1	1	317	483	35	34	3	1	10	.	6	5	.	.	.	1
U.S. Air Forces in Europe	16	12	1	2	366	253	32	27	2	.	1	.	.	.	.	.	2	1
U.S. Air Force Academy	1	2	1	1	36	34	1	1	.	.	.	.	.	.	.	.	.	.
Other	.	.	5	1	36	34	6	2	.	1	1	1	16	2	1	2	1	.
Total	73	43	11	11	3,904	3,245	361	319	18	17	35	9	40	34	1	2	5	4

^aEvents reported by Sep 8, 2010

^bAFRESS data interruption occurred in August/September of 2010 during scheduled relocation of USAFSAM servers.

^cSixty-seven medical events/conditions specified by Tri-Service Reportable Events Guidelines and Case Definitions, June 2009.

^dService member cases only.

Note: Completeness and timeliness of reporting vary by facility.

Sentinel reportable events among service members and beneficiaries at U.S. Army medical facilities, cumulative numbers^a for calendar years through 31 August 2009 and 31 August 2010



Army

Reporting locations	Number of reports all events ^b		Food-borne						Vaccine preventable					
			Campylobacter		Salmonella		Shigella		Hepatitis A		Hepatitis B		Varicella ^c	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
NORTHERN														
Aberdeen Proving Ground, MD	34	28	.	.	.	.	.	.	1	.	.	.	.	.
Fort Belvoir, VA	181	176	8	10	3	6	.	4	.	.	.	.	.	.
Fort Bragg, NC	1,266	1,035	6	20	16	9	.	2	.	.	2	.	.	.
Fort Dix, NJ	0	0	.	.	.	.	.	.	.	.	.	.	.	.
Fort Drum, NY	28	74	.	.	.	.	.	.	.	.	.	.	.	.
Fort Eustis, VA	175	151	.	.	2	1	.	.	.	.	.	.	.	.
Fort George G Meade, MD	34	13	.	.	.	.	.	.	.	.	.	.	.	.
Fort Knox, KY	149	246	.	1	.	2	.	2	.	.	.	.	.	1
Fort Lee, VA	331	406	.	.	.	.	.	.	.	.	.	.	.	.
Fort Monmouth, NJ	30	27	.	.	.	1	.	.	.	1	.	1	.	.
Walter Reed AMC, DC	130	115	1	1	.	3	.	.	.	.	1	.	1	.
West Point Military Reservation, NY	70	51	1	.	.	1	.	.	.	.	1	.	.	.
SOUTHERN														
Fort Benning, GA	242	81	1	.	.	.	1	1	1	.	.	.	.	.
Fort Campbell, KY	332	454	.	1	.	5	.	3	.	.	.	.	.	.
Fort Gordon, GA	492	521	1	3	7	16	3	4	.	.	2	.	1	.
Fort Hood, TX	1,417	1,497	7	5	14	9	10	38	.	.	2	1	.	.
Fort Jackson, SC	442	342	.	.	.	.	.	.	.	.	2	.	.	.
Fort Polk, LA	446	299	.	.	1	1	3	3	.	.	.	.	.	.
Fort Rucker, AL	54	74	7	1	1	5	.	.	.	.	.	1	.	.
Fort Sam Houston, TX	420	358	1	.	5	8	1	2	.	.	1	1	1	.
Fort Sill, OK	150	343	.	.	.	.	3	1	.	.	.	.	.	.
Fort Stewart, GA	803	459	.	1	22	23	13	5	.	.	.	2	.	2
WESTERN														
Fort Bliss, TX	253	520	.	4	1	2	1	1	1	.	5	4	.	.
Fort Carson, CO	510	532	5	5	3	3	.	2	1	.	.	.	.	.
Fort Huachuca, AZ	60	72	.	.	.	2	.	.	.	.	.	.	.	.
Fort Leavenworth, KS	48	30	.	.	1	.	.	.	.	.	.	.	.	.
Fort Leonard Wood, MO	273	264	1	1	.	2	.	.	1	.	.	.	1	.
Fort Lewis, WA	783	561	3	6	4	2	1	2	.	1	.	.	.	.
Fort Riley, KS	279	308	1	2	3	1	.	2	.	.	.	.	.	.
Fort Wainwright, AK	143	175	.	.	.	.	.	.	.	.	.	.	.	.
NTC and Fort Irwin, CA	87	80	.	.	1	.	1	.	.	.	.	.	.	.
PACIFIC														
Hawaii	567	586	27	30	12	19	4	4	.	1	2	.	.	.
Japan	3	4	.	.	.	.	.	.	.	.	.	.	.	.
Korea	306	328	.	2	.	.	.	.	.	.	.	.	.	.
EUROPEAN														
Heidelberg	129	134	6	14	4	9	.	2	1	.	.	.	.	.
Landstuhl	478	323	3	2	2	2	.	4	.	.	1	2	1	.
Bavaria	326	458	4	3	5	7	.	.	.	.	.	.	.	.
CENTCOM LOCATIONS														
CENTCOM	149	153	.	.	.	2	1	.	.	.	.	.	.	.
Total	11,620	11,278	83	112	107	141	42	82	6	3	19	12	5	3

^aEvents reported by Sep 8, 2009 and 2010^bSixty-seven medical events/conditions specified by Tri-Service Reportable Events Guidelines and Case Definitions, June 2009.^cService member cases only.

Note: Completeness and timeliness of reporting vary by facility.

Sentinel reportable events among service members and beneficiaries at U.S. Army medical facilities, cumulative numbers^a for calendar years through 31 August 2009 and 31 August 2010



Army

Reporting location	Arthropod-borne				Sexually transmitted						Environmental				Travel associated			
	Lyme disease		Malaria		Chlamydia		Gonorrhea		Syphilis		Cold ^c		Heat ^c		Q Fever		Tuberculosis	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
NORTHERN																		
Aberdeen Proving Ground, MD	.	.	.	.	27	24	4	4	2	.	.	.	.	.	.	.	.	.
Fort Belvoir, VA	.	.	.	.	154	137	16	19	.	.	.	.	.	.	.	.	.	.
Fort Bragg, NC	.	.	5	.	969	778	185	143	3	1	1	8	84	69	.	.	.	.
Fort Dix, NJ	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Fort Drum, NY	.	2	.	.	25	62	3	10	.	.	.	.	.	.	.	.	.	.
Fort Eustis, VA	.	1	.	.	148	129	25	14	.	2	.	.	.	4	.	.	.	.
Fort George G Meade, MD	1	.	.	.	33	8	.	5	.	.	.	.	.	.	.	.	.	.
Fort Knox, KY	1	.	.	1	127	215	21	17	.	.	.	.	.	6	.	.	.	1
Fort Lee, VA	1	.	.	.	297	371	31	34	2	.	.	.	.	1	.	.	.	.
Fort Monmouth, NJ	6	12	.	.	22	11	1	.	1	1	.	.	.	.	.	.	.	.
Walter Reed AMC, DC	10	8	.	.	91	84	14	14	11	3	.	.	.	1	.	.	1	1
West Point Military Reservation, NY	16	13	.	.	50	29	2	4	.	.	.	.	.	4	.	.	.	.
SOUTHERN																		
Fort Benning, GA	.	1	5	.	187	34	44	1	1	.	.	.	1	44	.	.	1	.
Fort Campbell, KY	5	.	.	.	221	400	60	36	1	.	.	.	45	9	.	.	.	.
Fort Gordon, GA	.	.	.	.	402	416	68	75	.	.	.	.	8	7	.	.	.	.
Fort Hood, TX	.	.	.	1	1,105	1,189	256	244	8	8	.	.	14	1	.	.	1	1
Fort Jackson, SC	.	1	.	.	223	168	36	26	2	.	.	.	8	179	139	.	.	.
Fort Polk, LA	.	.	.	1	277	214	41	35	1	.	.	.	123	45	.	.	.	.
Fort Rucker, AL	.	1	.	.	42	58	4	4	.	.	.	.	.	4	.	.	.	.
Fort Sam Houston, TX	.	.	.	1	319	294	66	43	10	9	.	.	16	.	.	.	.	.
Fort Sill, OK	.	.	.	1	113	252	15	37	.	1	.	.	19	51	.	.	.	.
Fort Stewart, GA	.	2	1	.	582	350	97	47	5	.	.	.	76	27	6	.	1	.
WESTERN																		
Fort Bliss, TX	.	.	.	3	206	431	33	64	5	4	.	.	.	6	.	.	1	1
Fort Carson, CO	.	.	.	2	457	485	44	35	.	.	.	.	.	.	.	.	.	.
Fort Huachuca, AZ	.	1	.	.	55	60	3	2	1	1	.	.	1	6	.	.	.	.
Fort Leavenworth, KS	3	1	.	.	39	26	3	2	1	1	.	.	1	.	.	.	.	.
Fort Leonard Wood, MO	.	.	.	.	238	220	25	33	.	1	.	.	5	7	.	.	1	1
Fort Lewis, WA	.	.	.	.	707	508	66	38	1	1	.	.	1	2	.	.	.	1
Fort Riley, KS	.	1	1	.	232	278	38	20	1	.	1	.	2	4	.	.	.	.
Fort Wainwright, AK	.	.	.	4	129	155	10	7	.	1	.	9	1	.	1	.	1	.
NTC and Fort Irwin, CA	.	.	.	.	78	71	2	6	2	1	.	.	3	2	.	.	.	.
PACIFIC																		
Hawaii	.	.	.	.	463	464	48	60	3	2	.	.	2	3	1	.	5	3
Japan	.	.	.	.	3	3	.	1	.	.	.	.	.	.	.	.	.	.
Korea	.	.	.	4	288	278	11	30	2	.	1	8	4	6	.	.	.	.
EUROPEAN																		
Heidelberg	6	7	.	.	99	88	13	13	.	1	.	.	.	.	.	.	.	.
Landstuhl	17	10	1	7	374	217	54	48	8	1	.	.	15	29	.	.	2	1
Bavaria	10	8	4	2	275	372	26	65	.	1	1	.	1	.	.	.	.	.
CENTCOM LOCATIONS																		
CENTCOM	.	.	.	2	139	130	7	15	1	3	.	.	.	.	1	1	.	.
Total	76	69	12	34	9,196	9,009	1,372	1,251	72	41	6	33	601	477	9	1	14	10

Sentinel reportable events among service members and beneficiaries at U.S. Navy medical facilities, cumulative numbers^a for calendar years through 31 August 2009 and 31 August 2010



Navy

Reporting locations	Number of reports all events ^b		Food-borne						Vaccine preventable					
			Campylobacter		Salmonella		Shigella		Hepatitis A		Hepatitis B		Varicella ^c	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
NATIONAL CAPITOL AREA														
NNMC Bethesda, MD	131	128	3	3	2	1	.	3	3	.	5	11	.	.
NHC Annapolis, MD	2	23	.	.	.	.	.	.	.	.	.	.	.	.
NHC Patuxent River, MD	27	11	.	.	.	2	.	.	.	.	.	.	.	.
NHC Quantico, VA	89	59	1	.	1	.	3	.	.	.	.	1	.	.
NAVY MEDICINE EAST														
NH Beaufort, SC	322	66	.	.	.	.	.	.	1	.	2	.	.	.
NH Camp Lejeune, NC	423	385	1	.	8	5	1	1	.	.	.	1	.	.
NH Charleston, SC	3	0	.	.	.	.	.	.	.	.	.	.	.	.
NH Cherry Point, NC	3	0	.	.	.	.	.	.	.	.	.	.	.	.
NH Corpus Christi, TX	2	10	.	.	.	.	.	.	.	.	.	.	.	.
NHC Great Lakes, IL	240	382	.	.	.	.	.	.	1	.	3	4	.	1
NH Guantanamo Bay, Cuba	0	0	.	.	.	.	.	.	.	.	.	.	.	.
NH Jacksonville, FL	202	160	.	2	15	14	1	.	.	.	.	7	.	.
NH Naples, Italy	1	0	.	.	.	.	.	.	.	.	.	.	.	.
NHC New England, RI	0	0	.	.	.	.	.	.	.	.	.	.	.	.
NH Pensacola, FL	160	100	1	1	5	2	2	.	.	.	.	.	.	.
NMC Portsmouth, VA	126	253	.	.	.	3	.	.	.	.	1	4	.	.
NH Rota, Spain	0	0	.	.	.	.	.	.	.	.	.	.	.	.
NH Sigonella, Italy	1	2	.	.	.	.	.	.	.	.	.	.	1	.
NAVY MEDICINE WEST														
NH Bremerton, WA	2	3	.	.	.	.	.	.	.	.	.	1	.	.
NH Camp Pendleton, CA	6	1	.	.	.	.	.	.	.	.	.	.	.	.
NH Guam-Agana, Guam	30	60	.	.	3	1	.	.	.	.	.	.	.	.
NHC Hawaii, HI	18	311	.	5	.	3	.	.	.	.	.	.	.	.
NH Lemoore, CA	45	2	.	.	.	.	.	.	.	.	.	.	.	.
NH Oak Harbor, WA	79	63	3	1	2	.	.	.	.	3	1	1	.	.
NH Okinawa, Japan	39	121	.	.	.	3	.	.	.	.	1	.	.	.
NMC San Diego, CA	599	810	1	9	10	12	.	2	.	.	44	21	1	.
NH Twentynine Palms, CA	1	2	.	.	.	.	.	.	.	.	.	.	.	.
NH Yokosuka, Japan	31	58	.	.	.	.	.	.	.	.	3	1	.	.
NAVAL SHIPS														
COMNAVAIRLANT/CINCLANTFLEET	21	19	.	.	.	.	.	.	.	.	.	.	.	.
COMNAVSURFPAC/CINCPACFLEET	60	33	.	.	.	.	.	.	.	.	.	.	.	.
OTHER LOCATIONS														
Other	2,754	2,407	12	11	13	8	5	1	1	.	9	17	2	5
Total	5,417	5,469	22	32	59	54	12	7	6	0	70	70	5	6

^aEvents reported by Sep 8, 2010^bSixty-seven medical events/conditions specified by Tri-Service Reportable Events Guidelines and Case Definitions, June 2009.^cService member cases only.

Note: Completeness and timeliness of reporting vary by facility.

Sentinel reportable events among service members and beneficiaries at U.S. Navy medical facilities, cumulative numbers^a for calendar years through 31 August 2009 and 31 August 2010



Navy

Reporting location	Arthropod-borne				Sexually transmitted						Environmental				Travel associated			
	Lyme disease		Malaria		Chlamydia		Gonorrhea		Syphilis		Cold ^c		Heat ^c		Q Fever		Tuberculosis	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
NATIONAL CAPITOL AREA																		
NNMC Bethesda, MD	8	21	.	2	101	58	8	8	1	19	.	.	.	.	.	1	.	1
NHC Annapolis, MD	.	2	.	.	2	20	.	.	.	1	.	.	.	.	.	.	.	.
NHC Patuxent River, MD	6	2	.	.	18	6	2	1	1	.	.	.	.	.	.	.	.	.
NHC Quantico, VA	1	1	.	.	64	39	9	4	.	.	.	6	10	8	.	.	.	.
NAVY MEDICINE EAST																		
NH Beaufort, SC	.	.	.	.	304	60	14	6	1	.	.	.	.	.	.	.	.	.
NH Camp Lejeune, NC	2	7	1	3	295	280	70	35	.	.	1	2	43	50	1	1	.	.
NH Charleston, SC	.	.	.	.	2	.	1	.	.	.	.	.	.	.	.	.	.	.
NH Cherry Point, NC	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	.
NH Corpus Christi, TX	.	2	.	.	2	7	.	1	.	.	.	.	.	.	.	.	.	.
NHC Great Lakes, IL	.	2	.	.	216	336	16	32	.	3	.	.	3	2	.	1	1	1
NH Guantanamo Bay, Cuba	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NH Jacksonville, FL	.	2	1	.	168	120	17	10	.	1	.	.	.	3	.	.	.	1
NH Naples, Italy	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.
NHC New England, RI	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NH Pensacola, FL	.	1	.	.	117	86	18	8	1	2	.	.	14	.	2	.	.	.
NMC Portsmouth, VA	.	9	1	4	99	193	21	25	2	10	.	.	.	2	.	.	2	3
NH Rota, Spain	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NH Sigonella, Italy	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.
NAVY MEDICINE WEST																		
NH Bremerton, WA	.	.	.	.	2	2	.	.	.	.	.	.	.	.	.	.	.	.
NH Camp Pendleton, CA	.	.	.	.	6	1	.	.	.	.	.	.	.	.	.	.	.	.
NH Guam-Agana, Guam	.	.	.	.	24	54	3	5	.	.	.	.	.	.	.	.	.	.
NHC Hawaii, HI	.	.	.	.	17	270	1	32	.	1	.	.	.	.	.	.	.	.
NH Lemoore, CA	.	.	.	.	42	.	3	2	.	.	.	.	.	.	.	.	.	.
NH Oak Harbor, WA	1	.	.	1	69	55	.	3	.	1	.	1	.	.	.	.	.	.
NH Okinawa, Japan	.	.	.	1	39	95	.	11	.	.	.	.	.	8	.	1	.	1
NMC San Diego, CA	1	2	3	1	434	667	68	66	17	20	.	.	14	10	2	.	4	.
NH Twentynine Palms, CA	.	.	.	.	.	1	.	1	1	.	.	.	.	.	.	.	.	.
NH Yokosuka, Japan	1	.	.	.	27	54	.	2	.	1	.	.	.	.	.	.	.	.
NAVAL SHIPS																		
COMNAVAIRLANT/CINCLANTFLEET	.	.	1	.	20	17	.	2	.	.	.	.	.	.	.	.	.	.
COMNAVSURFPAC/CINCPACFLEET	.	.	.	.	52	29	7	4	1	.	.	.	.	.	.	.	.	.
OTHER LOCATIONS																		
Other	24	33	6	15	2,261	1,919	271	214	8	14	9	8	129	157	.	.	4	5
Total	44	84	13	27	4,385	4,371	529	472	33	73	10	17	213	240	5	4	11	12

Update: Deployment Health Assessments, U.S. Armed Forces, September 2010

Since January 2003, peaks and troughs in the numbers of pre- and post-deployment health assessment forms transmitted to the Armed Forces Health Surveillance Center generally corresponded to times of departure and return of large numbers of deployers. Between April 2006 and March 2010, the number of post-deployment reassessment (PDHRA) forms per month ranged from 17,000 to 36,000 (Table 1, Figure 1).

During the past 12 months, the proportions of returned deployers who rated their health as “fair” or “poor” were 8-11% on post-deployment health assessment questionnaires and 10-14% on PDHRA questionnaires (Figure 2).

In general, on post-deployment assessments and reassessments, deployers in the Army and in reserve components were more likely than their respective counterparts to report health and exposure-related concerns (Table 2, Figure 3). Both active and reserve component members were more likely to report exposure concerns three to six months after, compared to the time of return from deployment (Figure 3).

At the time of return from deployment, soldiers serving in the active component were the most likely of all deployers to receive mental health referrals; however, three to six months after returning, active component soldiers were less likely than Army Reservists to receive mental health referrals (Table 2).

Finally, during the past three years, reserve component members have been more likely than active component service members to report “exposure concerns” on postdeployment assessments and reassessments (Figure 3).

Table 1. Deployment-related health assessment forms, by month, U.S. Armed Forces, September 2009-August 2010

	Pre-deployment assessment DD2795		Post-deployment assessment DD2796		Post-deployment reassessment DD2900	
	No.	%	No.	%	No.	%
Total	417,001	100	442,633	100	311,478	100
2009						
September	30,646	7.3	39,640	9.0	26,302	8.4
October	36,478	8.7	32,468	7.3	24,099	7.7
November	32,324	7.8	32,921	7.4	20,707	6.6
December	31,042	7.4	36,551	8.3	29,097	9.3
2010						
January	55,617	13.3	34,227	7.7	25,751	8.3
February	31,425	7.5	27,745	6.3	26,992	8.7
March	32,550	7.8	44,651	10.1	35,677	11.5
April	32,088	7.7	33,498	7.6	24,773	8.0
May	38,202	9.2	35,400	8.0	22,649	7.3
June	30,296	7.3	45,255	10.2	24,341	7.8
July	30,097	7.2	46,479	10.5	22,028	7.1
August	36,236	8.7	33,798	7.6	29,062	9.3

Figure 2. Proportion of deployment health assessment forms with self-assessed health status as “fair” or “poor”, U.S. Armed Forces, September 2009-August 2010

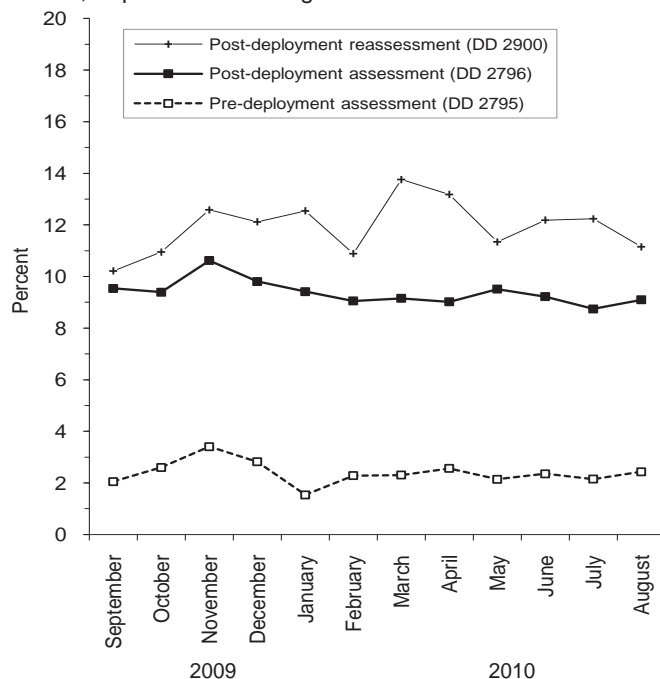


Figure 1. Total deployment health assessment and reassessment forms, by month, U.S. Armed Forces, January 2003-August 2010

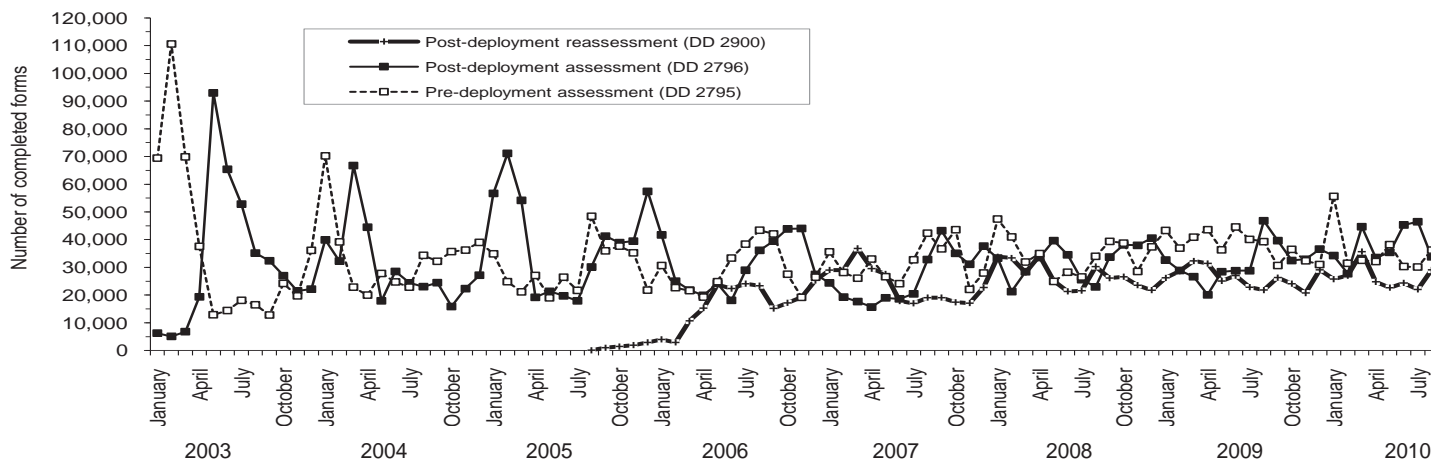


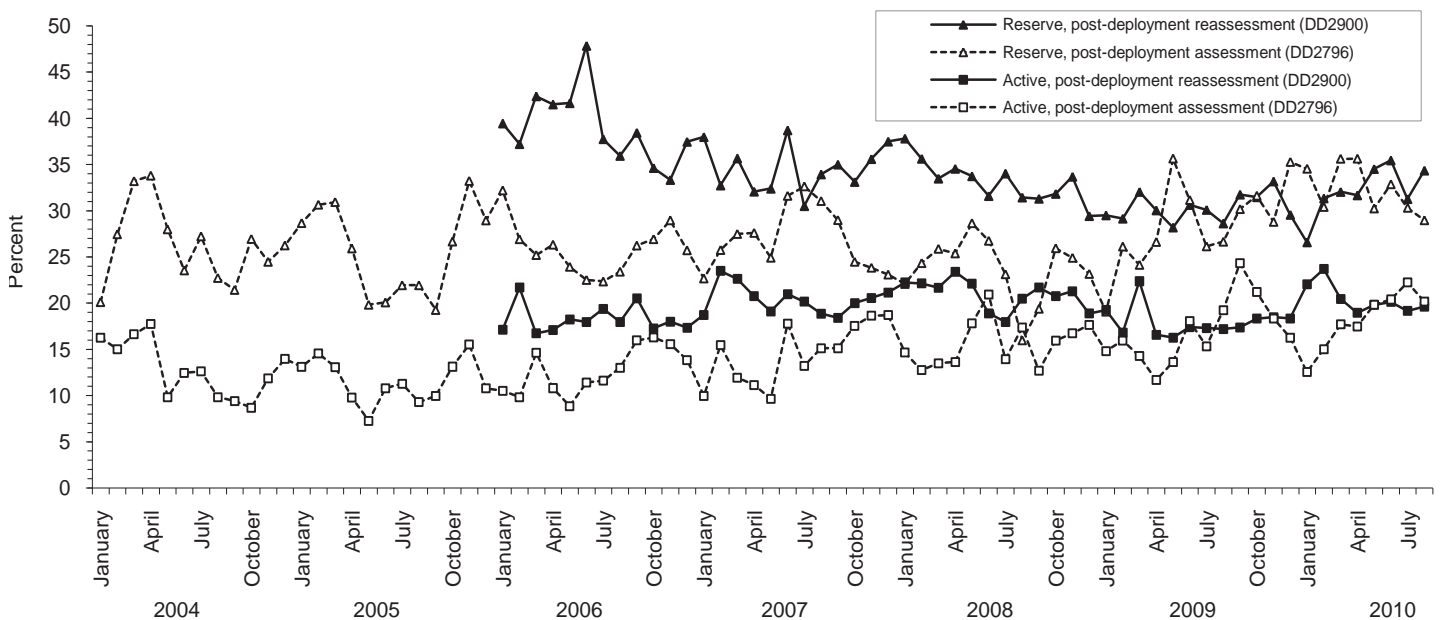
Table 2. Percentage of service members who endorsed selected questions/received referrals on health assessment forms, U.S. Armed Forces, September 2009- August 2010

	Army			Navy			Air Force			Marine Corps			All service members		
	Pre-deploy	Post-deploy	Reassess	Pre-deploy	Post-deploy	Reassess	Pre-deploy	Post-deploy	Reassess	Pre-deploy	Post-deploy	Reassess	Pre-deploy	Post-deploy	Reassess
	DD2795	DD2796	DD2900	DD2795	DD2796	DD2900	DD2795	DD2796	DD2900	DD2795	DD2796	DD2900	DD2795	DD2796	DD2900
Active component	n=151,906	n=151,496	n=116,661	n=18,904	n=15,571	n=13,230	n=59,455	n=53,936	n=50,981	n=32,414	n=28,762	n=30,910	n=262,679	n=249,765	n=211,782
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
General health "fair" or "poor"	3.9	10.0	14.9	1.2	4.7	5.9	0.4	3.3	4.2	1.5	7.4	9.9	2.6	7.9	11.0
Health concerns, not wound or injury	16.4	26.4	25.8	3.2	11.6	14.7	1.3	5.4	10.8	2.6	11.4	17.4	10.3	19.2	20.3
Health worse now than before deployed	0.0	21.8	25.7	0.0	11.8	13.5	0.0	8.3	8.5	0.0	15.9	18.8	0.0	17.6	19.8
Exposure concerns	0.0	21.7	21.4	0.0	18.8	21.0	0.0	11.1	14.7	0.0	14.2	21.5	0.0	18.4	19.8
PTSD symptoms (2 or more)	0.0	8.6	11.9	0.0	5.6	7.7	0.0	2.5	2.6	0.0	6.5	9.1	0.0	6.9	9.0
Depression symptoms (any)	0.0	30.7	33.1	0.0	22.0	24.2	0.0	13.0	13.7	0.0	25.9	30.1	0.0	25.8	27.5
Referral indicated by provider (any)	5.1	35.3	26.9	4.1	22.2	17.6	2.0	11.7	7.1	3.0	19.3	28.9	4.1	27.6	21.8
Mental health referral indicated ^a	1.3	7.1	13.2	0.6	3.0	5.5	0.5	1.5	2.0	0.3	1.6	5.3	0.9	5.0	8.9
Medical visit following referral ^b	95.4	99.8	97.7	86.0	90.2	95.9	85.7	96.0	97.7	52.4	82.7	93.8	88.1	97.4	96.9
Reserve component	n=66,033	n=80,831	n=66,957	n=5,496	n=4,187	n=5,241	n=16,420	n=15,003	n=16,201	n=2,479	n=3,961	n=7,275	n=90,428	n=103,982	n=95,674
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
General health "fair" or "poor"	1.2	11.5	16.6	0.5	10.3	10.3	0.3	5.1	4.9	1.0	7.3	10.8	1.0	10.3	13.8
Health concerns, not wound or injury	19.7	34.6	42.9	1.2	31.8	32.0	0.5	8.7	14.8	2.5	22.7	36.4	14.6	30.3	37.0
Health worse now than before deployed	0.0	25.9	31.8	0.0	21.0	20.7	0.0	12.6	10.8	0.0	21.1	26.6	0.0	23.6	27.2
Exposure concerns	0.0	34.0	34.0	0.0	43.9	36.0	0.0	18.2	22.5	0.0	14.2	31.5	0.0	31.4	32.0
PTSD symptoms (2 or more)	0.0	8.6	18.1	0.0	6.3	12.4	0.0	2.6	2.8	0.0	4.1	13.3	0.0	7.5	14.8
Depression symptoms (any)	0.0	30.7	34.1	0.0	26.2	24.7	0.0	14.5	13.4	0.0	29.1	27.9	0.0	28.1	29.6
Referral indicated by provider (any)	3.5	36.6	36.5	3.6	29.6	22.9	0.5	14.2	7.7	3.0	29.8	32.9	3.0	32.8	30.6
Mental health referral indicated ^a	0.4	4.8	13.1	0.2	2.9	6.7	0.0	0.9	1.2	0.2	2.2	10.7	0.3	4.1	10.5
Medical visit following referral ^b	91.3	99.3	38.6	96.3	95.7	44.0	58.3	69.4	45.8	57.4	85.7	34.9	89.3	96.5	38.8

^aIncludes behavioral health, combat stress and substance abuse referrals.

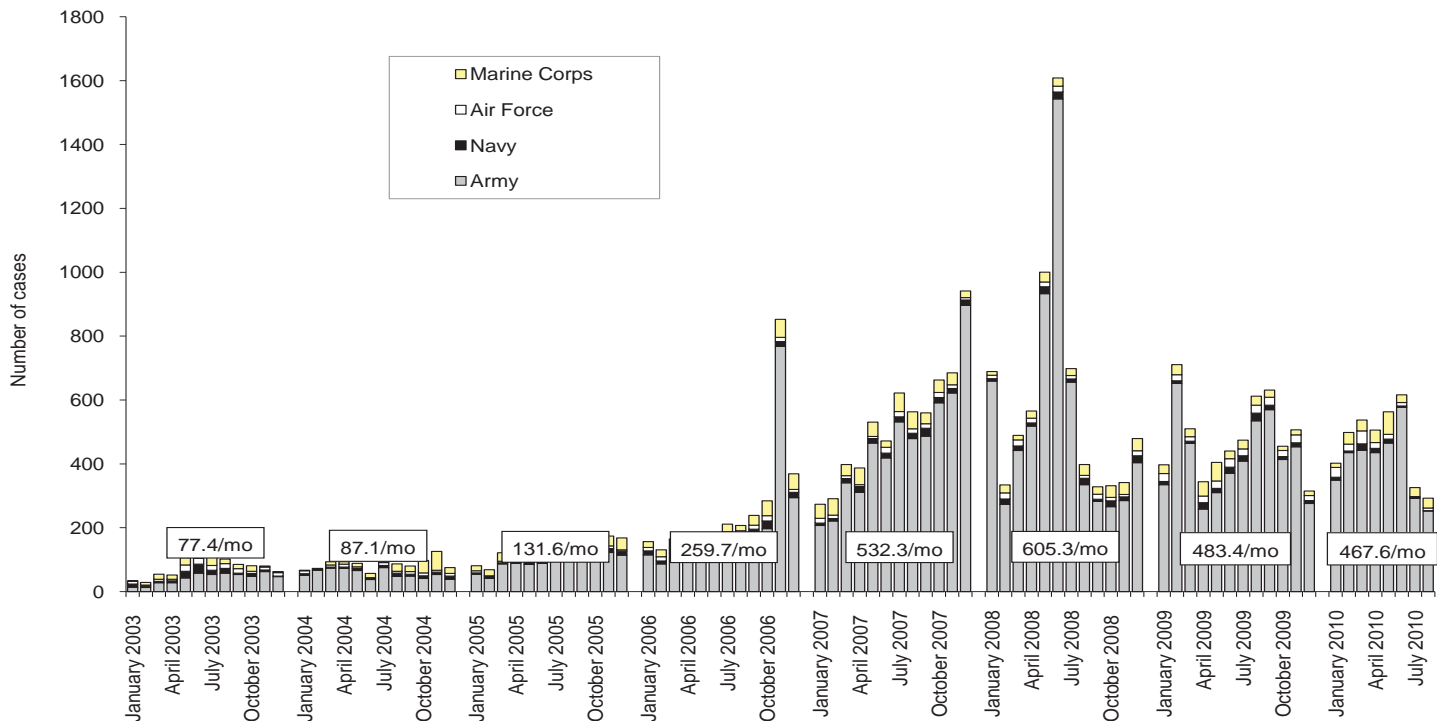
^bRecord of inpatient or outpatient visit within 6 months after referral.

Figure 3. Proportion of service members who endorsed exposure concerns on post-deployment health assessments, U.S. Armed Forces, January 2004-August 2010



Deployment-related conditions of special surveillance interest, U.S. Armed Forces, by month and service, January 2003 - August 2010 (data as of 20 September 2010)

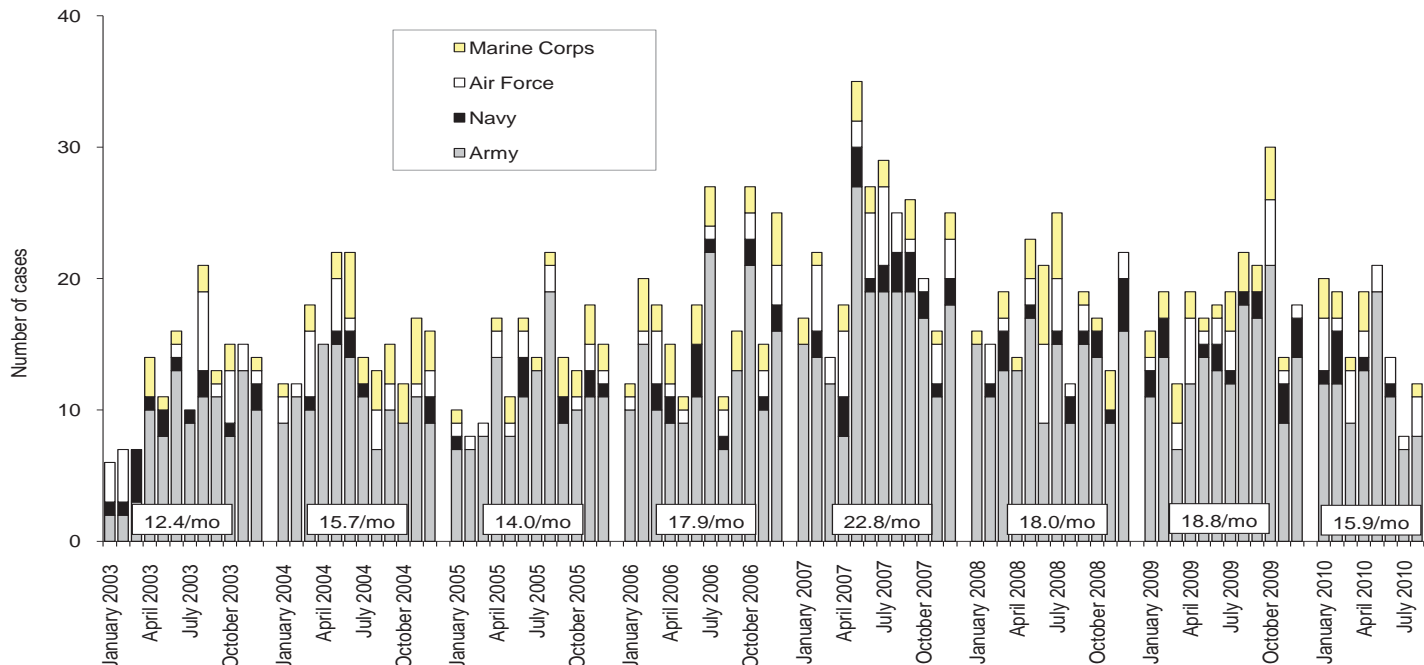
Traumatic brain injury (ICD-9: 310.2, 800-801, 803-804, 850-854, 907.0, 950.1-950.3, 959.01, V15.5_1-9, V15.5_A-F, V15.59_1-9, V15.59_A-F)^a



Reference: Armed Forces Health Surveillance Center. Deriving case counts from medical encounter data: considerations when interpreting health surveillance reports. *MSMR*. Dec 2009; 16(12):2-8.

^aIndicator diagnosis (one per individual) during a hospitalization or ambulatory visit while deployed to/within 30 days of returning from OEF/OIF. (Includes in-theater medical encounters from the Theater Medical Data Store [TMDS] and excludes 2,404 deployers who had at least one TBI-related medical encounter any time prior to OEF/OIF).

Deep vein thrombophlebitis/pulmonary embolus (ICD-9: 415.1, 451.1, 451.81, 451.83, 451.89, 453.2, 453.40 - 453.42 and 453.8)^b

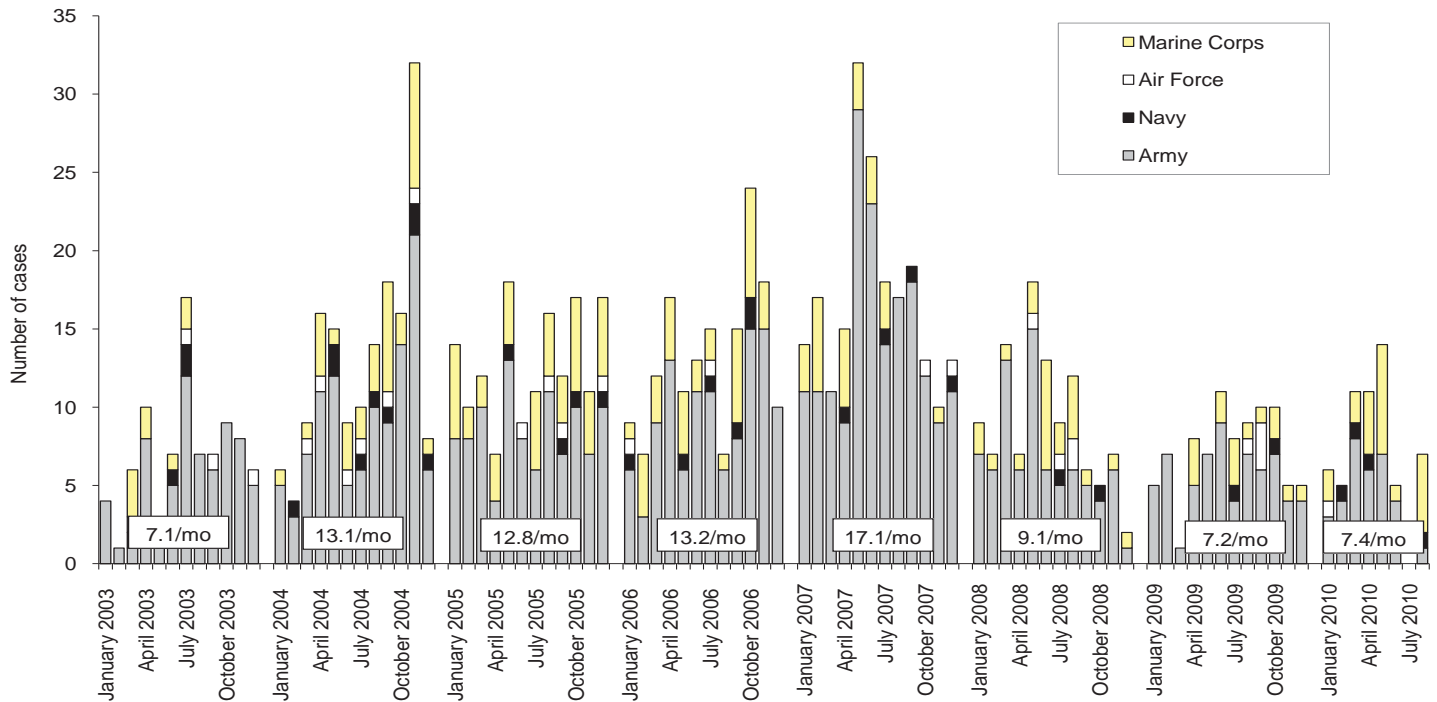


Reference: Isenbarger DW, Atwood JE, Scott PT, et al. Venous thromboembolism among United States soldiers deployed to Southwest Asia. *Thromb Res*. 2006;117(4):379-83.

^bOne diagnosis during a hospitalization or two or more ambulatory visits at least 7 days apart (one case per individual) while deployed to/within 90 days of returning from OEF/OIF.

Deployment-related conditions of special surveillance interest, U.S. Armed Forces, by month and service, January 2003 - August 2010 (data as of 27 September 2010)

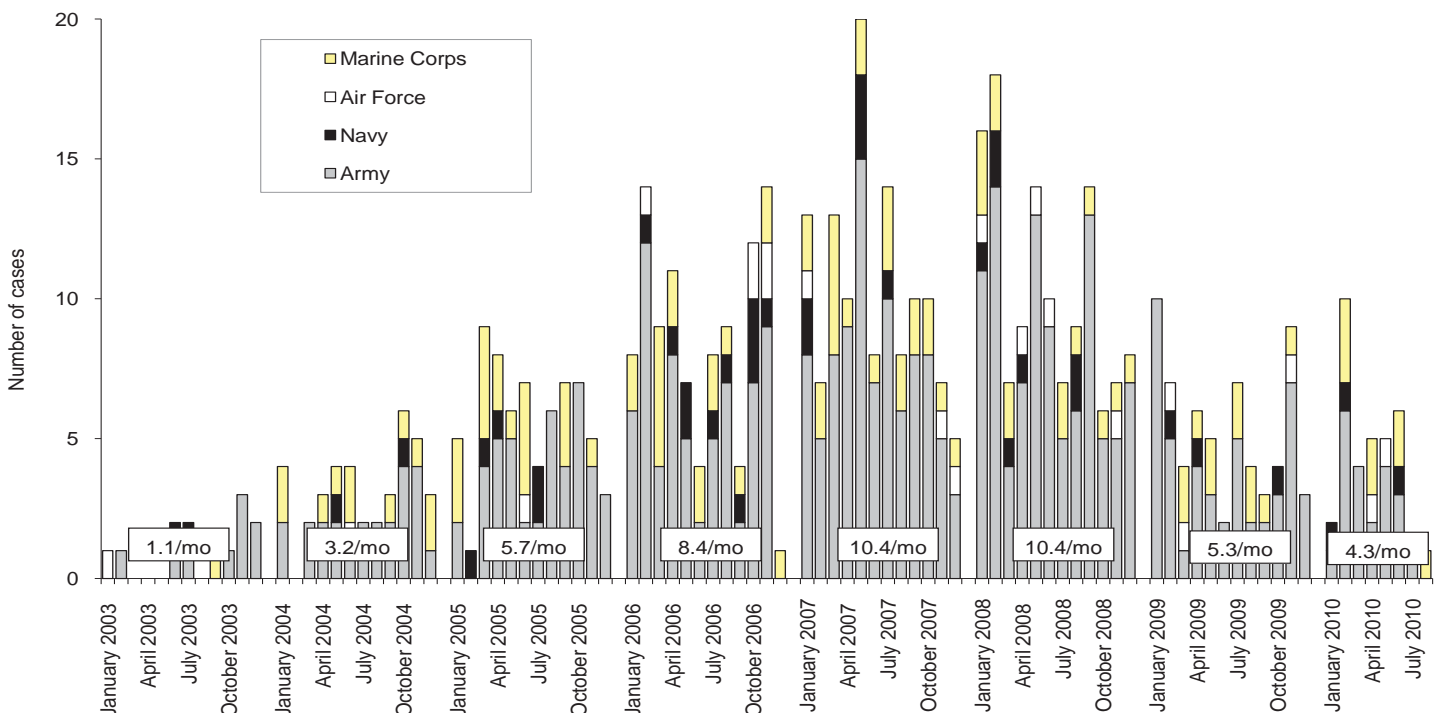
Amputations (ICD-9: 887, 896, 897, V49.6 except V49.61-V49.62, V49.7 except V49.71-V49.72, PR 84.0-PR 84.1, except PR 84.01-PR 84.02 and PR 84.11)^a



Reference: Army Medical Surveillance Activity. Deployment-related condition of special surveillance interest: amputations. Amputations of lower and upper extremities, U.S. Armed Forces, 1990-2004. *MSMR*. Jan 2005;11(1):2-6.

^aIndicator diagnosis (one per individual) during a hospitalization while deployed to/within 365 days of returning from OEF/OIF.

Heterotopic ossification (ICD-9: 728.12, 728.13, 728.19)^b



Reference: Army Medical Surveillance Activity. Heterotopic ossification, active components, U.S. Armed Forces, 2002-2007. *MSMR*. Aug 2007; 14(5):7-9.

^bOne diagnosis during a hospitalization or two or more ambulatory visits at least 7 days apart (one case per individual) while deployed to/within 365 days of returning from OEF/OIF.

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