

# Medical Evacuations from Afghanistan during Operation Enduring Freedom, Active and Reserve Components, U.S. Armed Forces, 7 October 2001-31 December 2012

From October 7, 2001 to 31 December 2012, over 20,000 service members were medically evacuated from the Operation Enduring Freedom (OEF) theater of combat operations to a medical treatment facility outside of theater. During the period the numbers, rates, and underlying causes of medical evacuations sharply varied in relation to the natures of ongoing military operations. During every month of the period, medical evacuations for disease and non-battle injuries exceeded those for battle-related injuries. The majority of evacuations (88.7%) occurred among males; however, the rate of medical evacuations was 22 percent higher among females. The major causes of medical evacuations differed among male and female deployers; however, rates of battle injuries and mental health disorders increased in both sexes during the period. Rates of medical evacuations were highest among white, non-Hispanics, soldiers, and in service members in the reserve component, junior enlisted, and in combat-specific occupations. Most service members were discharged back to duty after medical evacuation. The findings enforce the need to tailor force health protection policies and practices to the characteristics of the deployed force and the nature of the military operation.

From 7 October 2001 to 31 December 2012, there were nearly 1.7 million deployments in support of Operation Enduring Freedom (OEF). In wartime theaters of operations such as Afghanistan, most medical care is provided by deployed military medical personnel; however, some injuries and illnesses require medical management outside the operational theater. In such cases, affected individuals are usually transported by air to a fixed military medical facility in Europe or the United States. At the fixed facility, they receive the specialized, technically advanced, and/or prolonged diagnostic, therapeutic, and rehabilitation care required.

Medical air transports (“medical evacuations”) are costly and generally indicative of serious medical conditions. Some serious conditions (e.g., battle wounds) are directly related to participation in or support of combat operations; however, many others are unrelated to combat and may be preventable. The objectives of this report are to compare the natures, numbers,

rates, and trends of conditions for which male and female military members were medically evacuated from the OEF theater from the start of the campaign through 31 December 2012.

## METHODS

The surveillance period was 7 October 2001 to 31 December 2012. The surveillance population included all members of the active and reserve components of the U.S. Army, Navy, Air Force, Marine Corps, and Coast Guard who were deployed as part of Operation Enduring Freedom. The outcomes of interest in this analysis reflected individuals who were medically evacuated during the surveillance period from the OEF theater of the U.S. Central Command (CENTCOM) area of responsibility (AOR) (i.e., Afghanistan) to a medical treatment facility outside the CENTCOM AOR. Evacuations were included in analyses if the affected service member had at

least one inpatient or outpatient medical encounter in a permanent military medical facility in the U.S. or Europe from five days prior to ten days after the evacuation date. Records of all medical evacuations conducted by the U.S. Transportation Command (TRANSCOM) are routinely collected for health surveillance purposes by the Armed Forces Health Surveillance Center (AFHSC).

Medical evacuations included in the analyses were classified by the causes and natures of the precipitating medical conditions (based on information reported in relevant evacuation and medical encounter records). First, all medical conditions that resulted in evacuations were classified as “battle injuries” or “non-battle injuries and illnesses” (based on entries in an indicator field of the TRANSCOM evacuation record). Evacuations due to non-battle injuries and illnesses were sub-classified into 18 illness/injury categories based on International Classification of Diseases (ICD-9-CM) diagnostic codes reported on records of medical encounters after evacuation.

For this purpose, all records of hospitalizations and ambulatory visits from five days prior to ten days after the reported date of each medical evacuation were identified. In most cases, the primary (first-listed) diagnosis for either a hospitalization (if one occurred) or the earliest ambulatory visit after evacuation was considered indicative of the condition responsible for the evacuation. However, if the first-listed diagnostic code specified the external cause (rather than the nature) of an injury (ICD-9-CM E-code) or an encounter for something other than a current illness or injury (e.g., observation, medical examination, vaccination [ICD-9-CM V-code]), then secondary diagnoses that specified illnesses and injuries (ICD-9-CM 001-999) were considered the likely reasons for the subject evacuations.

Denominators for rates of medical evacuations were calculated by determining the length of each individual's deployment and summing the person-time of all deployers. If the deployment end date was missing, the end date was imputed based upon average deployment times per service.

The disposition after each medical evacuation was determined from the disposition code associated with the medical encounter used for determining the category of the medical evacuation. Inpatient disposition categories were: returned to duty (code: 01), transferred/discharged to other facility (codes: 02-04, 09, 21-28, 43, 61-66), died (codes: 20, 30, 40-42, 50, 51), separated from service (codes: 10-15), and other/unknown. Outpatient disposition categories were: released without limitation (code: 1), released with work/duty limitation (code: 2), immediate referral (code: 4), sick at home/quarters (codes: 3, S), admitted/transferred to civilian

hospital (codes: 7, 9, A-D, U), died (codes: 8,G), discharged home (code: F), and other/unknown.

## RESULTS

During the 11-year surveillance period, 23,719 medical evacuations of service members from OEF were followed by at least one medical encounter in a fixed medical facility outside the operational theater. Overall, there were more medical evacuations for battle injuries (n=5,647; 23.8 percent of all evacuations; rate: 9.2 per 1,000 deployed person-years [dp-yrs]) than for any other category of illnesses or injuries (Table 1).

In general, numbers of evacuations for battle injuries varied in relation to the numbers of deployed service members; as such, numbers were generally higher during troop surges than other periods. Also, both the numbers and rates of evacuations

for battle injuries varied in relation to the natures, locations, and intensities of ongoing combat operations (Figure 1). This was most evident in the increased rates of battle injury-related evacuations from OEF during the warm weather months of the years 2005 through 2012 (Figure 1).

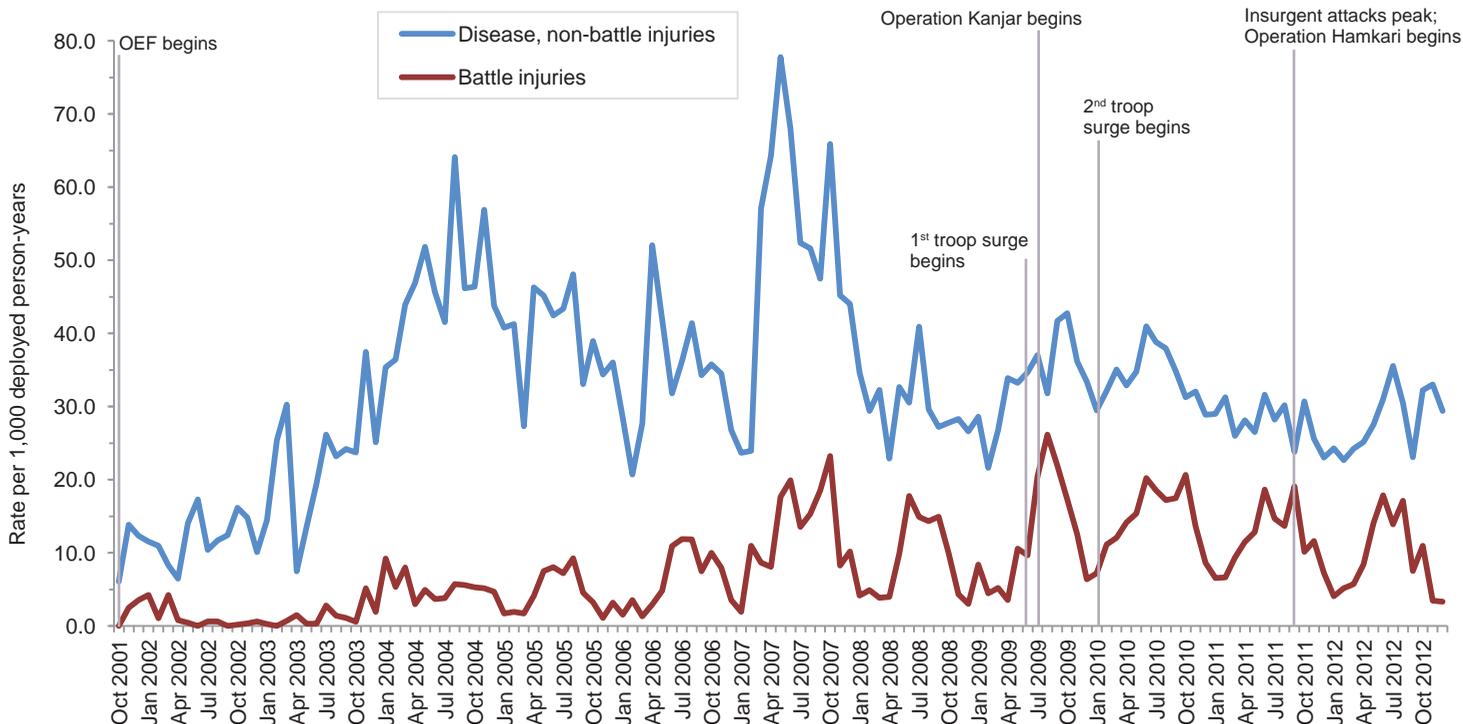
During every month of the 11-year period, medical evacuations for disease and non-battle injuries exceeded those for battle-related injuries. Overall during the period, the rate of evacuations for disease and non-battle injuries was more than triple that of battle-related injuries (Table 1, Figure 1).

Over the entire period, four categories of illnesses and non-battle injuries accounted for half (50.3%) of all evacuations. Musculoskeletal disorders, primarily affecting the back and knee, accounted for approximately one of every seven (14.4%) evacuations; non-battle injuries, primarily sprains and fractures of extremities, accounted for approximately one of seven

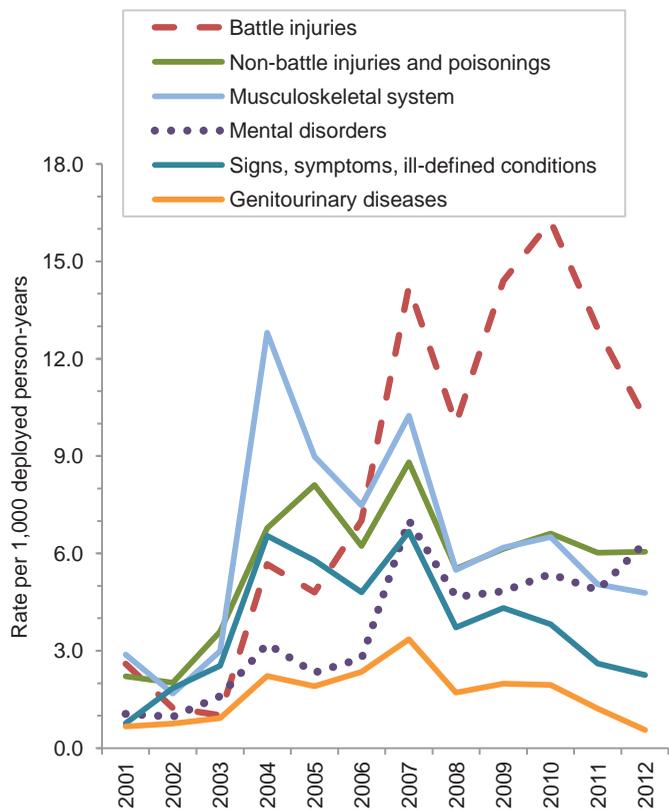
**TABLE 1.** Numbers and rates (per 1,000 deployed person-years) of medical evacuations from Operation Enduring Freedom (OEF)-Afghanistan by major categories of illnesses and injuries, 7 October 2001-31 December 2012

Diagnostic category (ICD-9-CM)	Total		Males		Females		Rate Ratio	Rate difference
	No.	Rate	No.	Rate	No.	Rate	Female:Male	Female-Male
Battle injuries (from TRAC2ES records)	5,647	9.2	5,570	10.0	77	1.3	0.13	-8.7
Musculoskeletal system (710-739)	3,427	5.6	3,074	5.5	353	6.1	1.10	0.6
Non-battle injuries and poisonings (800-999)	3,398	5.5	3,159	5.7	239	4.1	0.73	-1.6
Mental disorders (290-319)	2,850	4.6	2,408	4.3	442	7.6	1.76	3.3
Signs, symptoms, ill-defined conditions (780-799)	2,265	3.7	1,856	3.3	409	7.0	2.11	3.7
Digestive system (520-579)	1,124	1.8	1,005	1.8	119	2.0	1.14	0.2
Nervous system (320-389)	1,105	1.8	959	1.7	146	2.5	1.46	0.8
Genitourinary system (580-629, except breast disorders)	1,028	1.7	800	1.4	228	3.9	2.73	2.5
Circulatory system (390-459)	735	1.2	675	1.2	60	1.0	0.85	-0.2
Respiratory system (460-519)	342	0.6	296	0.5	46	0.8	1.49	0.3
Neoplasms (140-239)	338	0.5	249	0.4	89	1.5	3.43	1.1
Skin and subcutaneous tissue (680-709)	309	0.5	269	0.5	40	0.7	1.43	0.2
Other (V01-V82, except pregnancy-related)	255	0.4	204	0.4	51	0.9	2.40	0.5
Infectious and parasitic diseases (001-139)	232	0.4	199	0.4	33	0.6	1.59	0.2
Endocrine, nutrition, immunity (240-279)	227	0.4	174	0.3	53	0.9	2.92	0.6
Breast disorders (610-611)	214	0.3	55	0.1	159	2.7	27.74	2.6
Pregnancy and childbirth (630-679, relevant V-codes)	103	0.2	.	.	103	1.8	.	.
Hematologic disorders (280-289)	70	0.1	50	0.1	20	0.3	3.84	0.3
Congenital anomalies (740-759)	50	0.1	44	0.1	6	0.1	1.31	0.0
Totals	23,719	38.5	21,046	37.7	2,673	46.0	1.22	8.2

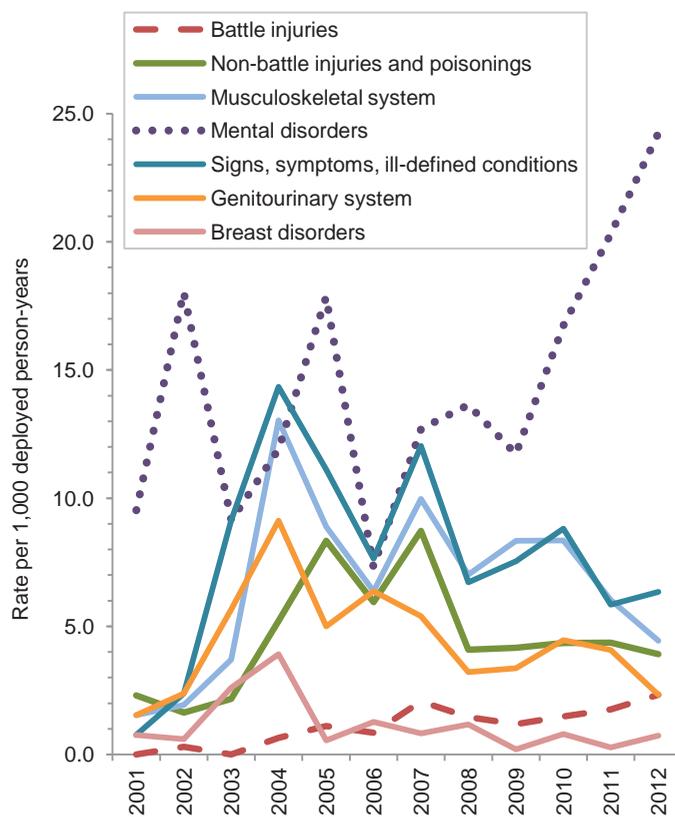
**FIGURE 1.** Rates (per 1,000 deployed person-years) of medical evacuations of U.S. service members from Operation Enduring Freedom (OEF) - Afghanistan, by month, 7 October 2001-31 December 2012



**FIGURE 2.** Rates (per 1,000 deployed person-years) of medical evacuations for selected diagnostic categories among males, Operation Enduring Freedom (OEF) - Afghanistan, U.S. Armed Forces, 07 October 2001-31 December 2012



**FIGURE 3.** Rates (per 1,000 deployed person-years) of medical evacuations for selected diagnostic categories among females, Operation Enduring Freedom (OEF) - Afghanistan, U.S. Armed Forces, 7 October 2001-31 December 2012



(14.3%) evacuations; mental disorders, most frequently adjustment reactions, mood disorders, anxiety disorders, and post-traumatic stress disorder (PTSD), accounted for approximately one of eight (12.0%) evacuations; and “signs, symptoms, and ill-defined conditions” (more than one-fifth related to the respiratory system) accounted for approximately one of eleven (9.5%) evacuations (Table 1).

### Demographic and military characteristics

Overall, nearly eight times as many males (n=21,046) as females (n=2,673) were medically evacuated; however, the rate of medical evacuations was 22.0 percent higher among females (46.0 per 1,000 dp-yrs) than males (37.7 per 1,000 dp-yrs) (Table 2). Of all medical evacuations of males throughout the period (n=21,046), the most frequent associated diagnoses were battle injuries (26.5%), non-battle injuries (15.0%), musculoskeletal disorders (14.6%), and mental disorders (11.4%). In contrast, the most frequent diagnoses among evacuated females during the period (n=2,673) were mental disorders (16.5%), “signs, symptoms, and ill-defined conditions” (15.3%), musculoskeletal disorders (13.2%), and non-battle injuries (8.9%) (Table 1).

Compared to females, males had higher rates of evacuations for battle injuries (females:males, rate ratio [RR]: 0.13; rate difference [RD]: 8.7 per 1,000 dp-yrs), non-battle injuries/poisonings (RR: 0.73; RD: 1.6 per 1,000 dp-yrs), and disorders of the circulatory system (RR: 0.85; RD: 0.2 per 1,000 dp-yrs). Females had higher evacuation rates for all other illness and injury categories. The largest relative differences in evacuation rates among females versus males were for breast disorders (RR: 27.74), hematologic disorders (RR: 3.84), and neoplasms (RR: 3.43); however, the largest absolute differences in evacuation rates among females compared to males were for “signs, symptoms, and ill-defined conditions” (RD: 3.7 per 1,000 dp-yrs) and mental disorders (RD: 3.3 per 10,00 dp-yrs) (Table 1).

Among OEF male participants, annual rates of medical evacuations attributable

to battle injuries increased from a low of 1.0 per 1,000 dp-yrs (n=47) in 2003 to a high of 16.2 per 1,000 dp-yrs (n=1,472) in 2010 and then declined to 10.2 per 1,000 dp-yrs (n=912) in 2012. Annual rates of medical evacuations attributable to mental disorders more than tripled from 2003 (1.9 per 1,000 dp-yrs) to 2007 (7.0 per 1,000 dp-yrs), then remained relatively stable from 2008 to 2012 (range, annual rates, 2008-12: 4.7 to 6.3 per 1,000 dp-yrs). Evacuation rates for musculoskeletal disorders, non-battle injuries/poisonings, “signs, symptoms, ill-defined conditions,” and genitourinary disorders generally increased from 2001 to 2007 and then decreased through 2012 (Figure 2).

Among female OEF participants, annual rates of medical evacuations due to mental disorders were variable from 2001 to 2009, and then steadily increased through 2012 (24.2 per 1,000 dp-yrs). Over the period, relatively few females required medical evacuations for battle injuries; annual numbers of battle injury-related evacuations of females ranged from zero (in 2001 and 2003) to 22 in 2012. Annual evacuation rates among females for non-battle injuries/poisonings, musculoskeletal disorders, “signs, symptoms, ill-defined conditions,” disorders of the genitourinary system, and breast disorders increased from 2001 to 2007 and then decreased through 2012 (Figure 3).

Overall, medical evacuation rates were higher among white, non-Hispanics (40.7 per 1,000 dp-yrs) and lower among Asian/Pacific Islanders (24.6 per 1,000 dp-yrs) than among deployers of other racial/ethnic identities. In relation to age, overall evacuation rates were lowest among the youngest (<20 years: 25.2 per 1,000 dp-yrs), highest among the oldest (≥45 years: 58.0 per 1,000 dp-yrs), and intermediate and fairly similar across age groups from 20 to 44 years old (range, age group-specific rates, 20-44 years: 36.6 to 41.9). Compared to their respective counterparts, rates of evacuation were higher among deployers who were in the Army or Marine Corps, in the reserve component, junior enlisted, and in combat-specific or armor/motor transport occupations (Table 2).

**TABLE 2.** Number and rate (per 1,000 deployed person-years) of medical evacuations from Operation Enduring Freedom (OEF) - Afghanistan by demographic and military characteristics, 7 Oct 2001-31 Dec 2012

	No.	Rate
Total	23,719	38.5
<b>Sex</b>		
Male	21,046	37.7
Female	2,673	46.0
<b>Race/ethnicity</b>		
White, non-Hispanic	16,780	40.7
Black, non-Hispanic	3,312	37.1
Hispanic	2,197	34.3
Asian/Pacific Islander	580	24.6
Other/Unknown	850	31.6
<b>Age</b>		
<20	810	25.2
20-24	8,626	38.3
25-29	5,384	38.9
30-34	3,194	37.3
35-39	2,491	36.6
40-44	1,690	41.9
45+	1,524	58.0
<b>Service</b>		
Army	17,440	49.9
Navy	960	11.0
Air Force	2,167	23.2
Marine Corps	3,149	36.9
Coast Guard	3	48.6
<b>Component</b>		
Active	17,877	36.6
Reserve/Guard	5,842	46.1
<b>Rank</b>		
Junior enlisted	12,074	41.3
Senior enlisted	9,145	39.7
Junior officer	1,546	25.6
Senior officer	954	29.4
<b>Occupation</b>		
Combat-specific <sup>a</sup>	8,266	57.4
Armor/motor transport	1,483	52.2
Repair/engineering	4,551	28.0
Comm/intel	4,359	33.3
Healthcare	1,506	42.1
Other	3,554	31.1
<b>Precedence<sup>b</sup></b>		<b>% medical evacs</b>
Routine	18,501	78.0
Priority	4,465	18.8
Urgent	752	3.2
<b>Transport type</b>		<b>% medical evacs</b>
Military	22,310	94.1
Commercial	87	0.4
Other	7	0.0
Unknown	1,315	5.5

<sup>a</sup>Infantry, artillery, combat engineering

<sup>b</sup>Data field within TRAC2ES; one unknown

**TABLE 3.** Most frequent 3-digit ICD-9-CM diagnoses from medical evacuations, by gender, Operation Enduring Freedom (OEF) - Afghanistan, 7 Oct 2001-31 Dec 2012

Males				Females			
3-digit ICD-9	Description	No.	Rate	3-digit ICD-9	Description	No.	Rate
309	Adjustment reaction	1,090	2.0	309	Adjustment reaction	178	3.1
719	Other/unspecified disorders of joint	747	1.3	611	Other disorders of breast	141	2.4
724	Other/unspecified disorders of back	583	1.0	719	Other/unspecified disorders of joint	109	1.9
722	Intervertebral disc disorders	554	1.0	789	Other symptoms involving abdomen/pelvis	93	1.6
780	General symptoms	492	0.9	780	General symptoms	83	1.4
897	Traumatic amputation of leg(s)	458	0.8	296	Episodic mood disorders	80	1.4
786	Respiratory system/other chest symptoms	442	0.8	724	Other/unspecified disorders of back	67	1.2
824	Fracture of ankle	437	0.8	311	Depressive disorder not elsewhere classified	63	1.1
823	Fracture of tibia and fibula	421	0.8	786	Respiratory system/other chest symptoms	62	1.1
296	Episodic mood disorders	409	0.7	722	Intervertebral disc disorders	50	0.9
825	Fracture tarsal/metatarsal bones	399	0.7	300	Anxiety, dissociative, somatoform disorders	45	0.8
813	Fracture of radius and ulna	353	0.6	625	Pain/other symptoms of with female genital organs	39	0.7
592	Calculus of kidney and ureter	350	0.6	787	Symptoms involving digestive system	39	0.7
805	Fracture of vertebral column without spinal cord injury	339	0.6	V22	Normal pregnancy	38	0.7
789	Other symptoms involving abdomen/pelvis	264	0.5	795	Other/nonspecific abnormal histological/immunological findings	36	0.6
300	Anxiety, dissociative, somatoform disorders	258	0.5	620	Noninflammatory disorders of ovary fallopian tube	34	0.6
850	Concussion	252	0.5	626	Disorders of menstruation/other abnormal bleeding from female genital tract	32	0.6
816	Fracture of phalanges of hand	249	0.4	592	Calculus of kidney and ureter	29	0.5
723	Other disorders of cervical region	240	0.4	785	Symptoms involving cardiovascular system	29	0.5
844	Sprains/strains of knee and leg	233	0.4	729	Other disorders of soft tissues	28	0.5

A majority of all medical evacuations (78.0%) were characterized as having routine precedence. The remaining 22 percent had priority (18.8%) or urgent (3.2%) precedence. Most medical evacuations (94.1%) were accomplished through military transport (**Table 2**).

#### Most frequent specific diagnoses

Among both males and females, “adjustment reaction” was the most frequent specific diagnosis (3-digit diagnosis code of ICD-9-CM) during initial medical encounters after evacuations; the rate of adjustment disorder evacuations was 56.9 percent higher among females (3.1 per 1,000 dp-yrs) than males (2.0 per 1,000 dp-yrs). Of the 20 diagnoses most frequently associated with evacuations of males, six were fractures (extremities and spine) and five were musculoskeletal conditions (back and joints). In addition to

**TABLE 4.** Disposition after inpatient or outpatient encounter post-medical evacuation, Operation Enduring Freedom (OEF) - Afghanistan, 7 Oct 2001-31 Dec 2012

Disposition	Total		Battle injuries		Disease, non-battle injuries	
	No.	%	No.	%	No.	%
<b>Inpatient<sup>a</sup></b>	<b>9,510</b>		<b>4,293</b>		<b>5,217</b>	
Returned to duty	4,782	50.3	1,258	29.3	3,524	67.5
Transferred/discharged to other facility	4,595	48.3	2,998	69.8	1,597	30.6
Other	72	0.8	22	0.5	50	1.0
Died	16	0.2	12	0.3	4	0.1
Unknown	45	0.5	3	0.1	42	0.8
<b>Outpatient<sup>b</sup></b>	<b>14,209</b>		<b>1,354</b>		<b>12,855</b>	
Released without limitation	9,244	65.1	818	60.4	8,426	65.5
Released with work/duty limitation	2,997	21.1	341	25.2	2,656	20.7
Other	18	0.1	1	0.1	17	0.1
Immediate referral	824	5.8	80	5.9	744	5.8
Sick at home/quarters	122	0.9	11	0.8	111	0.9
Admitted/transferred to civilian hospital	51	0.4	8	0.6	43	0.3
Unknown	953	6.7	95	7.0	858	6.7

<sup>a</sup>No individuals were separated from service

<sup>b</sup>No individuals with outpatient encounters died

“adjustment reactions,” two other mental disorders, “episodic mood disorders” and “anxiety, dissociative, and somatoform disorders,” were among the 20 diagnoses most frequently associated with evacuations of males (Table 3).

Of the 20 diagnoses most frequently associated with evacuations of females, four were mental disorders (“adjustment reaction,” “episodic mood disorders,” “depressive disorder,” “anxiety, dissociative, and somatoform disorders”); five were conditions that exclusively or primarily affect women (e.g., “pain/other symptoms associated with female genital organs,” “other disorders of the breast”); and three were musculoskeletal conditions (back and joints) (Table 3).

### Disposition

Of the 23,719 medical evacuations reported here, 9,510 (40.1%) resulted in inpatient encounters. Half (50.3%) of all service members who were hospitalized after medical evacuations were discharged back to duty. Nearly one-half (48.3%) of service members who were hospitalized after medical evacuations were transferred or discharged to other facilities.

Return to duty dispositions were much more likely after hospitalizations for diseases/non-battle injuries (67.5%) than for battle injuries (29.3%). Also, more than two-thirds (69.8%) of battle injury-related hospitalizations, but less than one-third of disease/non-battle injury-related hospitalizations, resulted in transfers/discharges to other facilities (Table 4).

Of the 23,719 medical evacuations reported, 14,209 (59.9%) resulted in outpatient encounters only. Of all service members treated exclusively in outpatient settings after evacuations, nearly two-thirds (65.1%) were discharged back to duty, 21.1 percent were released with work/duty limitations, 5.8 percent were immediately referred, and less than 1 percent each were discharged to “home sick” for recuperation or admitted/transferred to a civilian hospital. Service members treated as outpatients after battle injury-related evacuations were slightly less likely to be released without limitations (60.4%) and slightly more likely to have work/duty

limitations (25.2%) than medical evacuees treated as outpatients for diseases/non-battle injuries (65.5% and 20.7%, respectively) (Table 4).

### EDITORIAL COMMENT

This study documented that less than one fourth of all medical evacuations from OEF were associated with battle injuries. Rates of evacuations for battle injuries were considerably higher in the last six years than in the first six years of the surveillance period.

Most evacuations overall were associated with diseases and non-battle injuries, two thirds of which were due to musculoskeletal disorders, non-battle injuries, mental disorders, and “signs, symptoms, and ill-defined conditions.” Overall rates of evacuation were higher among females than males. Among the major illness and injury-related diagnostic categories (per the ICD-9-CM), rates of evacuations were higher among males than females only for battle injuries, non-battle injuries/poisonings, and disorders of the circulatory system. Examination of more specific illnesses and injuries (3-digit level, ICD-9-CM) revealed that evacuations for back and joint disorders and mental disorders were relatively common among deployers of both genders, and fractures of extremities and vertebrae were frequent among males but not among females. The majority of service members who were evacuated were returned to normal duty status following their post-evacuation hospitalizations or outpatient encounters in Europe or the United States. However, fewer than half of those evacuated for battle injuries were returned to duty immediately after their initial healthcare encounters.

A previous *MSMR* report estimated that during a 12-month deployment to combat operations in Iraq and Afghanistan, approximately 4 percent of Army, 2 percent of Marine Corps, and 1 percent of the other Services’ members were medically evacuated for any reason.<sup>1</sup> This report documents that the rates of medical evacuations by Service from OEF were

comparable to the percentages cited in the earlier *MSMR* report. The relatively low likelihood of medical evacuation suggests that most deployers were sufficiently healthy and fit, and most received the necessary medical care in theater to complete their OEF assignments successfully.

This analysis extends the findings of previous reports on medical evacuations from OEF. It documents that the numbers and underlying causes of medical evacuations from OEF varied in relation to the numbers of deployed service members and the natures of ongoing military operations, the tempo of which was usually dependent upon the favorable weather conditions of the spring and summers in Afghanistan. The report also documents differences in the predominant causes of medical evacuations among male and female deployers.

The findings enforce the need to tailor force health protection policies, training, supplies, equipment, and practices based on characteristics of the deployed force (e.g., combat versus support; male versus female) and the nature of the military operations (e.g., combat versus humanitarian assistance).

There are limitations to the analysis reported here that should be considered when interpreting the results. Direct comparisons of numbers and rates of medical evacuations by cause, as between males and females, can be misleading; for example, such comparisons do not account for differences between the groups in other characteristics (e.g., age, grade, military occupation, locations and activities while deployed) that are significant determinants of medical evacuation risk. Also, for this report, most causes of medical evacuations were estimated from primary (first-listed) diagnoses that were recorded during hospitalizations or initial outpatient encounters after evacuation. In some cases, clinical evaluations in fixed medical treatment facilities after medical evacuations may have ruled out serious conditions that were clinically suspected in the theater. For this analysis, the causes of such evacuations reflect diagnoses that were determined after evaluations outside

of the theater rather than diagnoses – perhaps of severe disease – that were clinically suspected in the theater. To the extent that this occurred, the causes of some medical evacuations may seem surprisingly minor.

Additionally, because the calculation of person-time was based upon OEF as a whole, service members who deployed to countries outside of the CENTCOM AOR (i.e., Afghanistan) were included in the person-time denominator. However, only evacuations from Afghanistan were used to calculate rates, which could result in an underestimation of true evacuation rates. Since a very small proportion of OEF deployers served outside of Afghanistan, the effects on estimation of evacuation rates is likely minor.

In summary, during the entirety of the campaign in Afghanistan through 31 December 2012, more than 23,000 U.S. service members were medically evacuated.

This report documents that, throughout OEF (even during periods of the most intense combat), most medical evacuations were not directly related to battle injuries. Overall, approximately three of every four medical evacuations were due to illnesses and non-battle injuries. Since 2003 the proportion of battle injuries has increased in both males and females. The proportions of medical evacuations due to mental disorders also increased in both genders particularly after 2009. The recent increase in mental disorder-related evacuations from Afghanistan may reflect, at least in part, increased awareness of, concern regarding, and healthcare resources dedicated to detecting and managing psychological, stress-related disorders (e.g., PTSD, depression, suicide ideation) among deployers.

Finally, previous reports have documented that relatively large proportions

of service members who are evacuated for illnesses (including musculoskeletal and mental disorders) during deployments had medical encounters for the same or closely related conditions shortly before deploying.<sup>1</sup> For example, a recent *MSMR* analysis showed that two-thirds of service members diagnosed with degenerative disk disease (DDD) prior to deployment experienced exacerbations of their condition while deployed.<sup>2</sup>

## REFERENCES

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