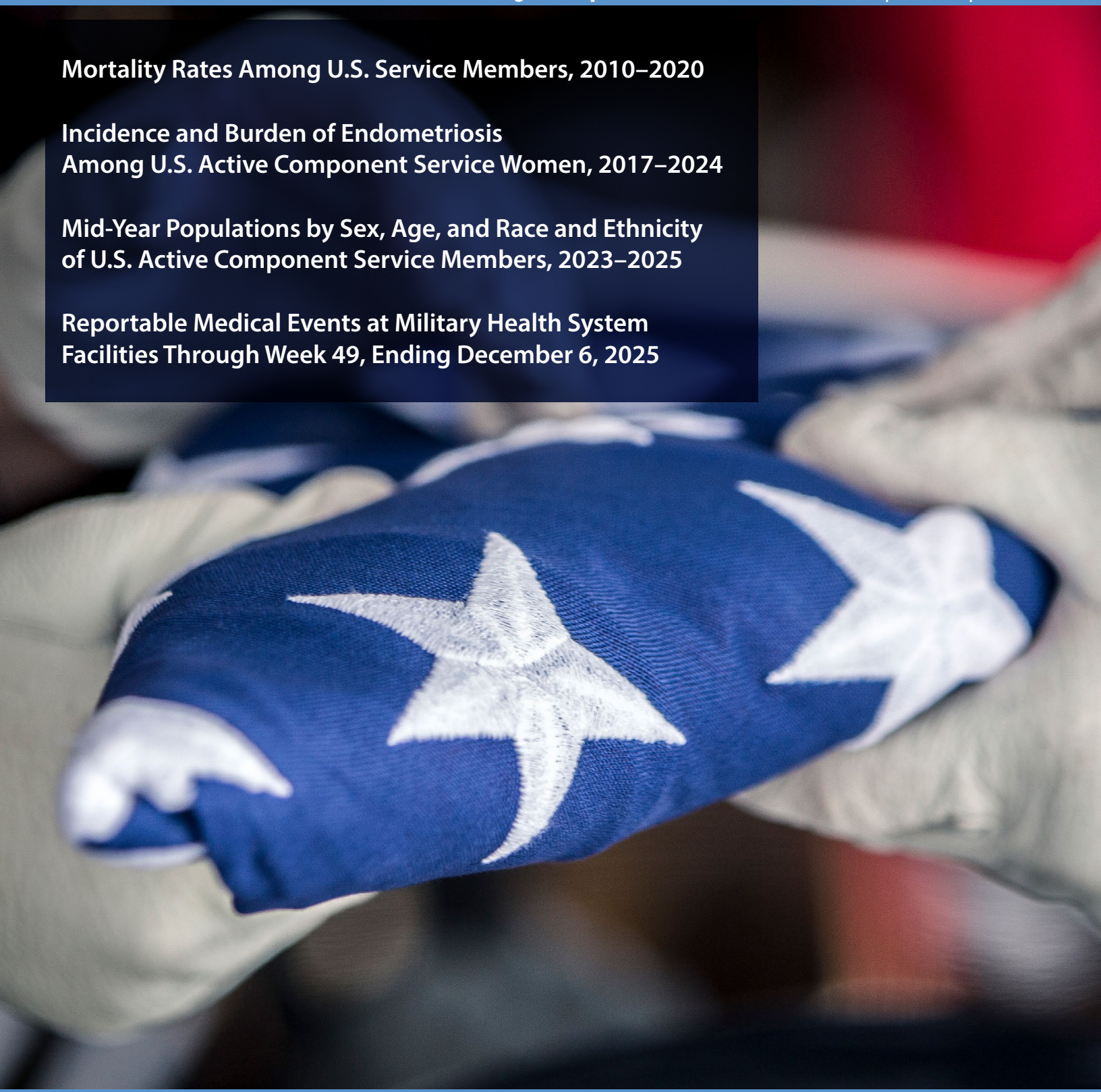
MSMR

Medical Surveillance Monthly Report

March 2026 | Vol. 33| No. 3



Mortality Rates Among U.S. Service Members, 2010–2020

Incidence and Burden of Endometriosis Among U.S. Active Component Service Women, 2017–2024

Mid-Year Populations by Sex, Age, and Race and Ethnicity of U.S. Active Component Service Members, 2023–2025

Reportable Medical Events at Military Health System Facilities Through Week 49, Ending December 6, 2025

A Publication of the Armed Forces Health Surveillance Division

Medical Surveillance for Military Readiness

Table of Contents

Mortality Rates Among U.S. Service Members, 2010–2020

Shauna L. Stahlman, PhD, MPH; Brianna L. Rupp, DO, MPH; Chiping Nieh, PhD, CPH; John C. Walsh, MD; Parrish P. Balcena, MD, MPH; Natalie Y. Wells, MD, MPH

This report updates previous summaries of the numbers, rates, trends and causes of death among U.S. active component, National Guard, and reserve component members from 2010 through 2020. Mortality rates among service members in all components decreased from 2011 to 2014, corresponding with a drawdown of U.S. military operations in U.S. Central Command. Compared to their respective counterparts, all-cause mortality rates were highest in the guard and reserve component and among Army soldiers, male service members, non-Hispanic White individuals, those in the oldest age category (age 55 years and older), and service members in combat-related occupations. Suicide and self-inflicted injury was the leading cause of death for both U.S. service women and men. Mortality rates for all causes of death among military service members were lower than the in U.S. population after adjustments for age, sex, and race and ethnicity—with the exception of suicide and self-inflicted injury, for which rates were higher. These findings demonstrate the need for a continued emphasis on suicide prevention programs to improve service member well-being. By identifying the specific subpopulations at highest risk for various causes of mortality, these surveillance data provide information for the Department of War to refine and more effectively target its prevention efforts and resources. Continued mortality surveillance is essential to identify emerging threats, evaluate the effectiveness of interventions, and protect both the health and readiness of the force.

What are the new findings?

Mortality rates decreased from 2011 to 2014, corresponding with the drawdown of U.S. military operations in U. S. Central Command. The leading cause of death for both female and male service members was suicide and self-inflicted injury. After adjustments for age, sex, and race and ethnicity, service members had lower mortality rates than the U.S. general population, with the exception of mortality rates due to suicide and self-inflicted injury.

What is the impact on readiness and force health protection?

The findings of this report underscore the importance for enhancing and improving the design of suicide prevention programs within the military. While suicide is a leading cause of death for service members, the report highlights other potentially preventable causes of death that require ongoing investigation and monitoring, such as accidents and natural causes.

Military medical surveillance activities are designed and conducted to identify significant threats to the health, fitness, and operational effectiveness of military populations. Tracking mortality data, particularly the deaths of active duty service members, is crucial for maintaining force readiness. Systematic review of mortality data can detect previously unknown or under-recognized threats, inform program and policy development, guide resource allocation, and assess the effectiveness of prevention efforts.

Applicants for U.S. military service are rigorously screened to ensure physical and psychological fitness for their roles. The U.S. military provides extensive health promotion, safety, and force health protection programs to its service members in addition to offering free preventive, curative, and rehabilitative medical services. Despite these efforts, deaths from preventable injuries (e.g., combat-related, accidental, self-inflicted) remain a concern.[1-4]

All-cause mortality surveillance is essential to characterize the numbers, natures, risk factors, and causes of preventable deaths among active duty service members. *MSMR* last published a comprehensive mortality report for all service branches in 2014.[4] From 1998 to 2011, accidental deaths were the most common manner of death for active component service members, while suicide was the most common manner of death from 2012 to 2013.[4] Transportation deaths declined steadily during that period, and combat-related deaths declined sharply in 2012 and 2013.[4] The current report provides an overview of all-cause mortality, updating previous summaries and including deaths from active as well as guard and reserve component service members of the U.S. Armed Forces from 2010 through 2020.

Methods

The surveillance population included all individuals who served in the U.S. military during the surveillance period as a member of the active or guard and reserve components of the U.S. Army, Navy, Air Force, Marine Corps, or Coast Guard from January 1, 2010 through December 31, 2020. The outcome of interest for this report was deaths of active, guard and reserve component members while in military service. This study received a determination of 'Not Research' by the DHA Office of Research Protections on February 14, 2023.

Mortality data were obtained from the U.S. Department of Veterans Affairs and Department of Defense (VA/DOD) Mortality Data Repository, which compiles National Death Index (NDI) records for all veterans and military service members. These data were requested through the Defense Suicide Prevention Office (DSPO) and obtained in July 2023. That information was then merged with Defense Manpower Data Center (DMDC) demographic records, which are routinely provided for surveillance purposes to the Armed Forces Health Surveillance Division for integration within the Defense Medical Surveillance System (DMSS), to identify demographic characteristics and calculations of mortality rates. A death was considered to have occurred 'in service' if it occurred within the beginning and end dates (or within 90 days after last date) of a service member's DMDC demographic record. Deaths were included regardless of whether a service member was on active duty status at time of death.

Underlying causes of death were grouped into the 26 cause of death categories in the Surveillance, Epidemiology, and End Results Program (SEER) cause of death recode instructions (which include non-neoplasm causes of death).[5] Deaths that could not be categorized (n=1,420) by the initial 26 SEER cause of death categories were reviewed by the Armed Forces Medical Examiner System (AFMES) for additional clarification on underlying cause; if additional information was available, those deaths were then categorized as 'other accidents and adverse effects', 'suicide and self-inflicted injury', or 'homicide and legal intervention'. Deaths determined to be due to natural or undetermined causes remained uncategorized. After review of the data, all 26 defined cause of death categories with rates less than 1 per 100,000 person-years were collapsed into a single category: 'all other causes'. After the consolidation of cause of death categories with rates less than 1 per 100,000 person-years into the 'all other causes' category, 8 final cause of death categories remained: suicide and self-inflicted injury (International Classification of Diseases, 10th Revision [ICD-10]: U03, X60–X84, Y87.0), transport accidents (ICD-10: V01–V99, Y85), other accidents and adverse effects (ICD-10: W00–W99, X00–X59, Y86), neoplasm (ICD-10: C00–C97, D00–D48), operations of war (ICD-10: Y36, Y89.1), diseases of heart (ICD-10: I00–I09, I11, I13, I20–I51), homicide and legal intervention (ICD-10: U01–U02, X85–Y09, Y35, Y87.1, Y89.0), and all other causes.

Summary measures for this analysis are numbers of deaths in the surveillance population overall and mortality rates calculated as deaths per 100,000 person-years of military service. Mortality rates were summarized in relation to person-years at risk rather than individuals at risk because the U.S. military is a dynamic cohort, with many individuals entering and leaving service on any day. In any calendar year, there are many more individuals with any service than there are total person-years of active service; the latter was considered a more consistent measure of exposure to mortality risk across calendar years.

The final cause of death categories including all-cause mortality among service members were compared with mortality rates in the U.S. general population ages 15-64 years from 2010 to 2020, utilizing publicly available data sets downloaded from the U.S. Center for Disease Control and Prevention (CDC)'s National Center for Health Statistics National Vital Statistics System.[6] The only exception was operations of war, which was excluded from the comparison analysis since it is a uniquely military cause of death. Indirect standardization, adjusting for 5-year age category, sex, and racial or ethnic group, was used to calculate standardized mortality ratios (SMRs) and 95% confidence intervals (CIs) using a Poisson distribution. All analyses were performed using SAS® Enterprise Guide® software (version 8.3, SAS Inst., Inc., Cary, NC).

Results

From 2010 through 2020, there were 18,251 deaths among 4,956,332 U.S. military service members **(Table 1)**. The mortality rate for all components during the 11-year surveillance period was 75.3 per 100,000 person-years (p-yrs), ranging from 65.4 (in 2019) to 91.8 (in 2011). Mortality rates decreased between 2011 and 2014 for all components, although this trend was more apparent for the active component **(Figure 1)**.

Among all service members, compared to their respective counterparts, all-cause mortality rates were highest among the guard and reserve component (84.8 per 100,000 p-yrs), Army members (93.6 per 100,000 p-yrs), male service members (83.1 per 100,000 p-yrs), non-Hispanic White individuals (81.5 per 100,000 p-yrs), those in the oldest age category of 55 years or older (220.2 per 100,000 p-yrs), and those in combat-related occupations (127.9 per 100,000 p-yrs) **(Table 1)**; it should be noted that serving in a combat-related occupation at time of death does not necessarily mean that a service member died while serving in combat. Among all service members, mortality rates were lowest among the active component (75.3 per 100,000 p-yrs), Coast Guard (48.3 per 100,000 p-yrs), female service members (36.8 per 100,000 p-yrs), Hispanic individuals (57.6 per 100,000 p-yrs), those aged 35-44 years (66.8 per 100,000 p-yrs), and those in other (61.4 per 100,000 p-yrs) and health care (63.1 per 100,000 p-yrs) occupations.

Suicide and self-inflicted injury was the leading cause of death during the surveillance period, accounting for 33% of all service member deaths: 25.1 per 100,000 p-yrs overall, 23.0 per 100,000 p-yrs for the active component, and 28.8 per 100,000 p-yrs for the guard and reserve component **(Table 2)**. Transport accidents and other accidents and adverse events were the second

TABLE 1. All Cause Mortality Rates[a], Active, Guard and Reserve Components, U.S. Armed Forces, 2010–2020

Demographic Characteristics	Total		Active Component		Guard, Reserve Component	
	No.	Rate[a]	No.	Rate[a]	No.	Rate[a]
Total	18,251	75.3	10,552	69.6	7,699	84.8
Component						
Active	10,552	69.6	—	—	—	—
Guard	4,544	91.2	—	—	—	—
Reserve	3,155	76.9	—	—	—	—
Branch of service						
Army	10,802	93.6	5,097	91.8	5,705	95.3
Navy	2,309	54.7	1,910	53.7	399	60.0
Air Force	2,863	52.3	1,678	47.3	1,185	61.5
Marine Corps	2,038	80.9	1,664	79.6	374	87.5
Coast Guard	239	48.3	203	48.2	36	49.4
Sex						
Male	16,749	83.1	9,823	76.6	6,926	94.3
Female	1,502	36.8	729	31.0	773	44.5
Race and ethnicity						
White, non-Hispanic	12,031	81.5	6,749	75.9	5,282	89.8
Black, non-Hispanic	2,804	74.8	1,616	67.8	1,188	87.0
Hispanic	1,872	57.6	1,170	54.2	702	64.3
Other	1,255	60.0	819	56.8	436	67.2
Unknown	289	74.1	198	67.6	91	93.4
Age, *y*						
≤24	6,548	77.6	4,292	74.2	2,256	85.1
25–34	6,429	69.5	3,999	66.2	2,430	75.6
35–44	3,162	66.8	1,769	64.1	1,393	70.7
45–54	1,653	102.0	441	80.7	1,212	112.8
55+	459	220.2	51	152.1	408	233.2
Sex and age, *y*						
Male, ≤24	6,089	87.9	4,042	83.5	2,047	98.2
Male, 25–34	5,922	77.3	3,730	73.4	2,192	85.1
Male, 35–44	2,848	70.8	1,608	67.3	1,240	75.9
Male, 45–54	1,476	106.7	400	84.2	1,076	118.4
Male, 55+	414	239.1	43	157.4	371	254.3
Female, ≤24	459	30.4	250	26.5	209	37.0
Female, 25–34	507	31.8	269	28.1	238	37.3
Female, 35–44	314	44.2	161	43.3	153	45.3
Female, 45–54	177	74.7	41	57.2	136	82.3
Female, 55+	45	127.5	8	128.9	37	127.2
Military occupation						
Combat-related	4,086	127.9	2,760	130.2	1,326	123.2
Motor transport	844	91.5	372	76.8	472	107.8
Pilot, air crew	549	70.3	391	71.5	158	67.4
Repair, engineering	4,743	71.5	2,768	62.2	1,975	90.4
Communications, intelligence	3,495	64.8	1,976	60.5	1,519	71.4
Health care	1,270	63.1	729	56.0	541	76.0
Other	3,264	61.4	1,556	51.8	1,708	73.9

Abbreviations: No., number; y, years.
[a] Rates per 100,000 person-years of military service.

and third, respectively, leading causes of death in service members, accounting for 21% and 12% of all service member deaths, respectively **(Table 2)**. Deaths due to operations of war decreased 91% from 2010 to 2014 **(Figure 2a)**. In contrast, mortality rates due to suicide and self-inflected injury increased 28% from 2010 to 2020. Overall annual trends in mortality rates by cause of death were driven by the trends in male service members **(Figure 2b)**. Female service members had lower, more stable rates compared to male service members **(Figure 2c)**.

The leading cause of death of male service members was suicide and self-inflicted injury (28.2 per 100,000 p-yrs), followed by transport accidents (18.0 per 100,000 p-yrs), and other accidents and adverse effects (10.3 per 100,000 p-yrs) **(Table 3)**. The leading cause of death among female service members was also suicide and self-inflicted injury (10.3 per 100,000 p-yrs), followed by neoplasms (8.1 per 100,000 p-yrs), and transport accidents (7.1 per 100,000 p-yrs) **(Table 3)**.

Compared to the U. S. population, service members had significantly lower rates for all-cause mortality, transport accidents, other accidents and adverse effects, neoplasms, heart disease, and homicide **(Table 4)**. Suicide and self-inflicted injury mortality rates were higher among service members compared to the U.S. population (SMR 1.10, 95% CI 1.08, 1.13). When evaluated by sex, SMR for suicide and self-inflicted injury was 1.08 (95% CI 1.05, 1.11) for male service members and 1.66 (95% CI 1.50, 1.83) for females.

Discussion

This was the first comprehensive *MSMR* mortality analysis in over a decade, and the first to include National Guard and Reserve members from all branches, including the U.S. Coast Guard. Findings from this report indicate a modestly reduced mortality rate for active component members (69.6 per 100,000 p-yrs) compared to the 1990–2011 mortality rate (75.1 per 100,000 p-yrs).[3-4] The trends in demographic risk factors for all-cause mortality were generally consistent with

FIGURE 1. Annual All Cause Mortality Rates, Active, Guard and Reserve Components, U.S. Armed Forces, 2010–2020

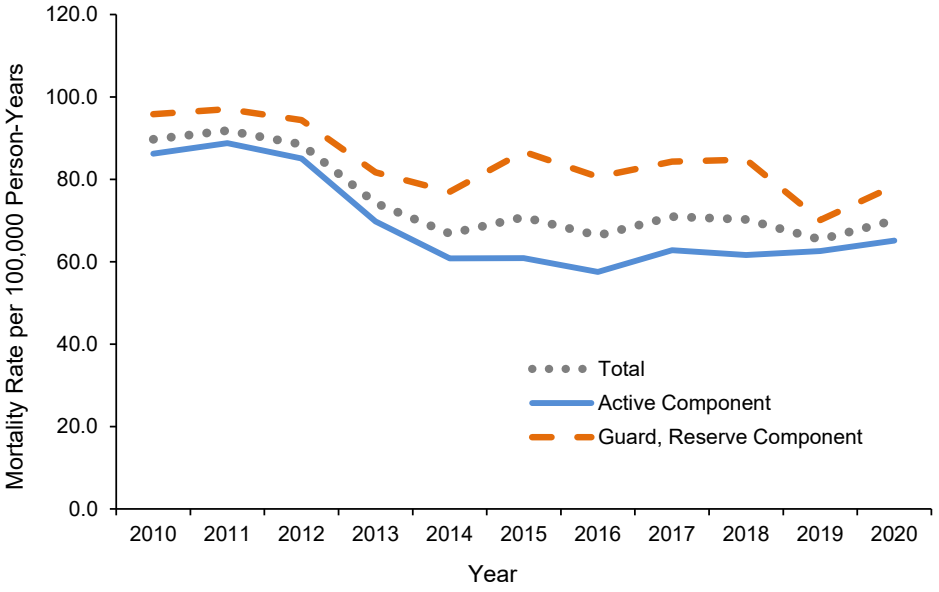


TABLE 2. Causes of Death, Active, Guard and Reserve Components, U.S. Armed Forces, 2010–2020

Category of Death	Total		Active Component		Guard, Reserve Component	
	No.	Rate[a]	No.	Rate[a]	No.	Rate[a]
Suicide and self-inflicted injury	6,098	25.1	3,485	23.0	2,613	28.8
Transport accident	3,913	16.1	2,216	14.6	1,697	18.7
Other accidents and adverse effects	2,219	9.2	1,348	8.9	871	9.6
Neoplasm	1,771	7.3	776	5.1	995	11.0
Operations of war	1,265	5.2	1,154	7.6	111	1.2
Diseases of heart	1,080	4.5	476	3.1	604	6.7
Homicide and legal Intervention	738	3.0	379	2.5	359	4.0
All other causes	1,167	4.8	718	4.7	449	4.9

Abbreviation: No., number.
[a] Rate per 100,000 person-years of military service.

findings from a recent Millennium Cohort Study mortality analysis of service members and veterans deployed to post-9/11 military operations, which found that mortality rates were higher in National Guard and Reserve members, Army personnel, males, and older individuals, compared to their respective counterparts.[7]

Overall, the leading cause of death for U.S. service members in 2020 was suicide, followed by transport accidents, and then other accidents and adverse effects. These leading 3 conditions were also the leading causes of death for service members during the combined 11-year surveillance period. Among the general U.S. population, ages 17-45 years, in 2020 the leading cause of death was unintentional injury, followed by suicide, heart disease, homicide, and malignant neoplasms.[8] Service member deaths due to transport accidents decreased from 2010 to 2020, whereas motor vehicle traffic death rates in the U.S. population declined between 2006 and 2010 and increased from 2010 to 2019.[9]

According to prior *MSMR* reports, the leading causes of death in 2011 among active component service members was operations of war, followed by suicide and transport accidents.[3-4] The decline in operations of war as a leading cause of death in service members was likely influenced by drawdown of U.S. military operations in the U.S. Central Command Area of Operation during the study period. This analysis found higher rates of suicide and transport accidents in 2011, followed by operations of war, as indicated by the data presented in **Figures 2a–2c**. It is important to note, however, that prior *MSMR* reports only included deaths occurring while on active duty status, whereas this analysis also included deaths while not in active duty status, which likely accounts for some of the difference.

From 2010 to 2020, suicide was a leading contributor to overall deaths among U.S. service members, accounting for one-third of all deaths. The official source of suicide data in the U.S. Department of War (DOW) is the DSPO *Annual Report on Suicide in the Military*, which describes, in its most recent (2023) report, a 2013–2020 increasing gradual trend in active component suicide rates, with a decrease in 2021 followed by other increases in 2022 and 2023.[10] Similarly, data in the current study showed a gradual increase in suicide over the study period, with an overall 27.7% increase in suicide rates from 2011 (21.5 per 100,000 p-yrs) to 2020 (28.2 per 100,000 p-yrs) among service members in all components. The same trend was observed in the U.S. population in a report on suicide rates from 2001 to 2021, where the suicide rates from 2010 to 2020 increased during most years.[11] The findings of this report are also consistent with a recent U.S. Army mortality surveillance report that identified suicide as the highest cause-specific mortality rate amid a 2014–2019 decline in deaths due to natural causes.[12]

In the 2023 DSPO report, covering a 2011-2023 surveillance period, it was reported that suicide rates among National Guard members were higher than the age- and sex-adjusted U.S. population rates, from 2012 to 2013, and suicide rates were higher among active component members compared to the age and sex adjusted U.S. population in 2020.[10] The current study identified similar findings in sensitivity analyses evaluating adjusted rates by sex, component,

and calendar year. This study identified more suicides among service members than reported in the DSPO reports, however, particularly among National Guard and Reserve members. These differences are likely attributed to the use of VA/DOD Mortality Data Repository data to identify deaths, which is not a data source used to identify service member suicide deaths in the DSPO reports. In addition, the AFMES review of deaths that were not initially categorized in 1 of the 26 SEER cause of death categories uncovered more suicide deaths than would have been identified in this report, based on VA/DOD Mortality Data Repository data alone. This emphasizes the importance of comprehensive and integrated death data review.

During the surveillance period, male service members' suicide mortality rate was more than double that of their female counterparts, a finding that contrasts sharply with the civilian population, where men's suicide rate is 4 times greater than women's.[13] In fact, when compared to an age- and race-adjusted U.S. population, this study found that female service members had a 66% increased rate of suicide, whereas male service members had only an 8% increased rate. This finding does not, however, establish a causal link between military service and suicide risk, as suicide causes could not be determined from available data. This finding does, however, identify women as a specific subpopulation for the DOW to refine and more effectively target future suicide prevention efforts and resources. At least 1 prior study identified higher suicide incidence among active component women ages 17-29 years compared to age-adjusted rates in the U.S. population in 2010, 2012, and 2014.[14] This trend has also been observed in veterans: In the *2025 National Veteran Suicide Prevention Annual Report* the suicide rate in 2023 for female veterans was 103.1% higher than for non-veteran female U.S. adults, while the age-adjusted rate for male veterans was 49.7% higher than for non-veteran male U.S. adults.[15]

Service members tend to be healthier than the general U.S. population, due to a number of factors including medical screening prior to service accession (disqualifying individuals with significant

FIGURE 2a. Leading Causes of Death, U.S. Armed Forces, 2010–2020

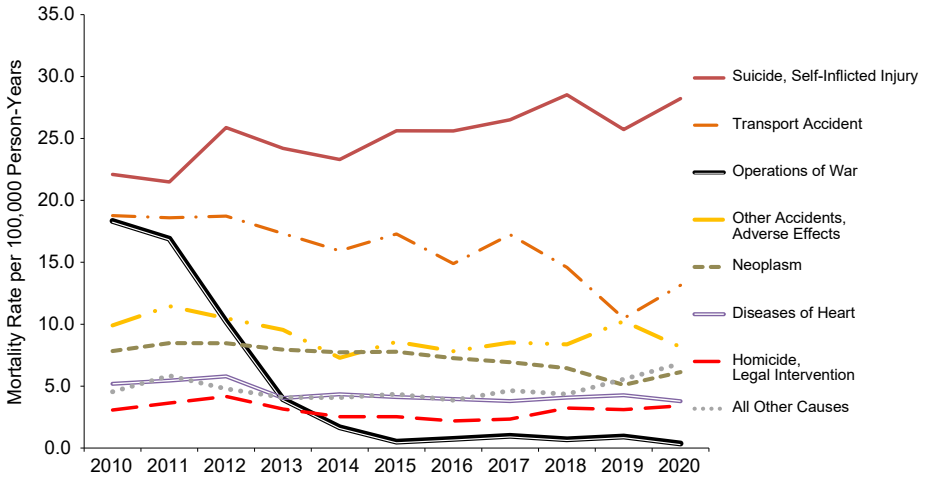
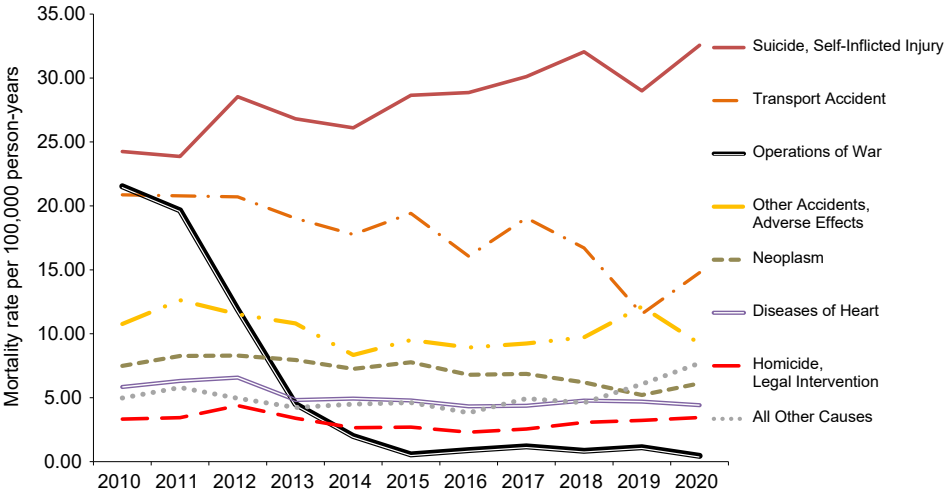


FIGURE 2b. Leading Causes of Death, Male Service Members, U.S. Armed Forces, 2010–2020



medical conditions), multiple programs to maintain the health of the force (e.g., physical fitness standards, safety and force health protection programs, no-cost medical services), and frequent attrition (e.g., medical disability) of service members who develop life-threatening medical conditions prior to terminal illness stages.[16] Consequently, it was not surprising that, with the exception of suicide, death rates for conditions evaluated in this study (e.g., neoplasms, heart diseases) were lower for service members than those in the U.S. population, even after adjustments for age, sex, and race and ethnicity. Similarly, although guard and reserve component members are generally required to meet the same physical fitness standards as active duty members, they may test less frequently and face different daily training accountability. Guard and reserve component members may also have less consistent health insurance coverage and less on-base support, which could contribute to the higher mortality rates observed in guard and reserve component members in this analysis.

Limitations of this mortality review include use of NDI records contained in the VA/DOD Mortality Data Repository as the primary source of data for cause

FIGURE 2c. Leading Causes of Death, Female Service Members, U.S. Armed Forces, 2010–2020

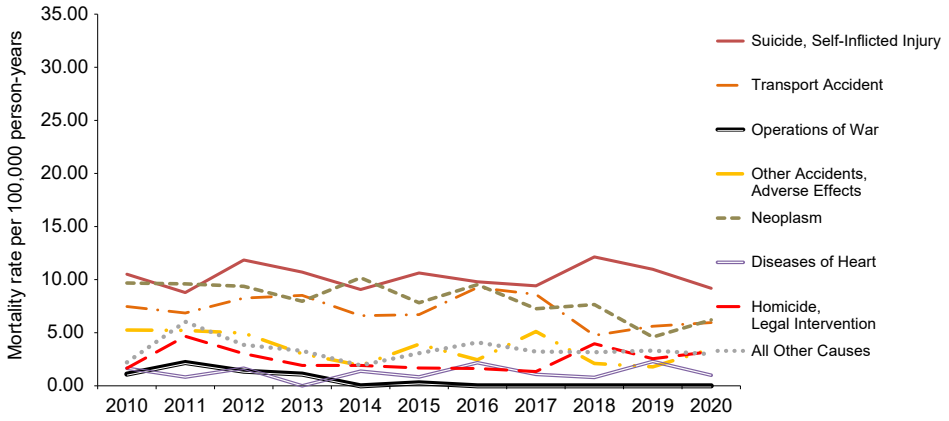


TABLE 3. Causes of Death by Sex, U.S. Armed Forces, 2010–2020

Category of Death	Men			Women		
	No.	Rate[a]	Rank	No.	Rate[a]	Rank
Suicide and self-inflicted injury	5,678	28.2	1	420	10.3	1
Transport accident	3,622	18.0	2	291	7.1	3
Other accidents and adverse effects	2,074	10.3	3	145	3.6	4
Neoplasm	1,439	7.1	4	332	8.1	2
Operations of war	1,243	6.2	5	22	0.5	8
Diseases of heart	1,029	5.1	6	51	1.3	7
All other causes	1,029	5.1	6	138	3.4	5
Homicide and legal intervention	635	3.2	7	103	2.5	6

Abbreviation: No., number.
[a] Rate per 100,000 person-years of military service.

and manner of death, with the exception of the uncategorized records (n=1,420) reviewed by AFMES. Previous *MSMR* reports utilized data maintained by AFMES, which historically collected source documents from civilian jurisdictions on all active duty deaths, which were then validated, coded, and analyzed.[4] AFMES has since lost that capability; efforts are underway to restore it. The use of a different source of mortality data in this report makes it more challenging to compare these results to the findings of prior reports.

This analysis is intended to provide a survey of recent trends in service member mortality rates, without details of types of intentional or unintentional deaths. It should be noted, however, that use of firearms has consistently been described as the most common method of death in service members who died by suicide, according to annual DSPO reports.[10] Also of note, the Fiscal Year 2024 National Defense Authorization Act (NDAA) (Public Law 118-31) requires an annual report on fatal and non-fatal drug overdoses by members of the U.S. Armed Forces.[17] The most recent NDAA report, released in April 2025, indicates that both fatal and non-fatal overdoses were lower in service members compared to the U.S. population, likely due to frequent, random urinalysis drug testing combined with anti-drug education and outreach. Furthermore, the NDAA report reveals that fatal and non-fatal drug

TABLE 4. Deaths and Mortality Rates, U.S. Military Members Compared to U.S. Population, 2010–2020

Category of Death	Observed Deaths	Expected Deaths	SMR[a]	95% LL	95% UL	*p*-value
	No.	No.				
All-cause mortality	17,958[b]	42,431	0.42	0.42	0.43	<0.0001
Suicide and self-inflicted injury	6,012	5,446	1.10	1.08	1.13	<0.0001
Males	5,601	5,199	1.08	1.05	1.11	<0.0001
Females	411	247	1.66	1.50	1.83	<0.0001
Transport accident	3,851	5,074	0.76	0.74	0.78	<0.0001
Other accidents and adverse effects	2,200	8,724	0.25	0.24	0.26	<0.0001
Neoplasm	1,732	4,227	0.41	0.39	0.43	<0.0001
Diseases of heart	1,058	4,676	0.23	0.21	0.24	<0.0001
Homicide and legal intervention	729	3,597	0.20	0.19	0.22	<0.0001

Abbreviations: SMR, standardized mortality ratio; LL, lower limit; UL, upper limit.
[a] Adjusted for age, sex, and race and ethnicity.
[b] Total deaths are smaller than number shown in Table 1 because individuals with missing race information and older than age 64 years were excluded from analysis.

overdoses in service members decreased by more than 40% from 2021 to 2023.[17]

The current study was limited to deaths that occurred while in military service; mortality rates for veterans and former service members were not assessed. Deaths were included if they occurred within 90 days after a service member's last service record, to account for imprecision in military separation dates. Some deaths that occurred shortly after a service member separated from service may have been inadvertently included. This study also did not evaluate multiple or secondary causes of death. Results are dependent upon the accuracy of the information record of the underlying cause of death, which can be subjective. When comparing mortality rates with the U.S. population, U.S. population data used the age category of 15-19 years, which is not the same as the military service member age category of 17-19 years, and may have resulted in some residual confounding. In addition, service members could not be excluded from the U.S. population comparison group.

By nature, many military activities are dangerous and sometimes life-threatening. Mortality surveillance is a key component of comprehensive health surveillance among a military population. The findings of this report underscore the importance of suicide prevention programs within the military, with the consideration of the unique risk factors affecting women in service. Further research would be required to better understand why certain subgroups, such as Army soldiers and National Guard members, have higher mortality rates. Continued, detailed mortality surveillance remains essential to identifying emerging threats, evaluating the effectiveness of interventions, and ultimately protecting the health and readiness of the force.

Author Affiliations

Epidemiology and Analysis Branch, Armed Forces Health Surveillance Division, Public Health Directorate, Defense Health Agency, Silver Spring, MD: Dr. Stahlman, Dr. Nieh, Dr. Wells; Armed Forces Medical Examiner System, Dover, DE: Dr. Rupp, Dr. Balcena; Naval Construction Group TWO, Gulfport, MS: Dr. Walsh

Disclaimer

The views expressed in this report reflect the results of research conducted by the authors and do not necessarily reflect the official policy or position of the Defense Health Agency, Department of War, nor the U.S. Government.

References

1. Powell KE, Fingerhut LA, Branche CM, Perrotta DM. Deaths due to injury in the military. *Am J Prev Med*. 2000;18(3 suppl):26-32. doi:10.1016/s0749-3797(99)00172-5

2. Armed Forces Health Surveillance Center. Motor vehicle-related deaths, active and reserve components, U.S. Armed Forces, 1999–2012. *MSMR*. 2013;20(11):10-14. https://www.health.mil/reference-center/reports/2013/01/01/medical-surveillance-monthly-report-volume-20-number-11

3. Armed Forces Health Surveillance Center. Deaths while on active duty in the U.S. Armed Forces, 1990–2011. *MSMR*. 2012;19(5):2-5. https://www.health.mil/reference-center/reports/2012/01/01/medical-surveillance-monthly-report-volume-19-number-5

4. Armed Forces Health Surveillance Center. Surveillance snapshot: manner and cause of death, active component, U.S. Armed Forces, 1998–2013. *MSMR*. 2014;21(10):21. https://www.health.mil/reference-center/reports/2014/01/01/medical-surveillance-monthly-report-volume-21-number-10

5. National Cancer Institute, National Institutes of Health. Surveillance, Epidemiology, and End Results Program (SEER) Cause of Death Recode. U.S. Dept. of Health and Human Services. Accessed Nov. 11, 2025. https://seer.cancer.gov/codrecode

6. National Bureau of Economic Research. Mortality Data: Vital Statistics NCHS Multiple Cause of Death Data. Updated Feb. 2023. Accessed Feb. 9, 2024. https://www.nber.org/research/data/mortality-data-vital-statistics-nchs-multiple-cause-death-data

7. Carey FR, Harbertson J, Sharifian N, Boyko EJ, Rull RP, Millennium Cohort Study Team. All-cause mortality among United States military personnel: findings from the Millennium Cohort Study, 2001–2021. *Ann Epidemiol*. 2024;99:1-8. doi:10.1016/j.annepidem.2024.08.006

8. U.S. Centers for Disease Control and Prevention. WISQARS: Web-based Injury Statistics Query and Reporting System. U.S. Dept. of Health and Human Services. Accessed Nov. 11, 2025. https://www.cdc.gov/injury/wisqars/index.html

9. Spencer MR, Hedegaard H, Garnett M, National Center for Health Statistics. Motor Vehicle Traffic Death Rates, by Sex, Age Group, and Road User Type: United States, 1999-2019. NCHS Data Brief. No. 400. U.S. Centers for Disease Control and Prevention, U.S. Dept. of Health and Human Services. Mar. 2021. Accessed Nov. 11, 2025. https://www.cdc.gov/nchs/data/databriefs/db400-h.pdf

10. Defense Suicide Prevention Office. Calendar Year 2023 Annual Report on Suicide in the Military: I*ncluding the Department of Defense Suicide Event Report (DoDSER)*. Office of the Under Secretary of Defense for Personnel and Readiness, U.S. Dept. of War. 2024. Accessed Nov. 11, 2025. https://www.dspo.mil/portals/113/2024/documents/annual_report/arsm_cy23_final_508c.pdf

11. National Center for Health Statistics. Suicide Mortality in the United States, 2001–2021. NCHS Data Brief 2023. No. 464. U.S. Centers for Disease Control and Prevention, U.S. Dept of Health and Human Services. Apr. 2023. Accessed Nov. 11, 2025. https://www.cdc.gov/nchs/data/databriefs/db464.pdf

12. Kaplansky GF, Toussaint M. U.S. Army mortality surveillance in active duty soldiers, 2014–2019. *MSMR*. 2024;31(5):2-8. Accessed Nov. 21, 2025. https://www.health.mil/news/articles/2024/05/01/msmr-army-mortality

13. U.S. Centers for Disease Control and Prevention. Suicide Data and Statistics. U.S. Dept. of Health and Human Services. Updated Mar. 26, 2025. Accessed Nov. 11, 2025. https://www.cdc.gov/suicide/facts/data.html

14. Reimann CA, Mazuchowski EL. Suicide rates among active duty service members compared with civilian counterparts, 2005-2014. *Mil Med*. 2018;183(suppl 1):396-402. doi:10.1093/milmed/usx209

15. U.S. Department of Veterans Affairs. *2025 National Veteran Suicide Prevention Annual Report Part 2 of 2: Report Findings*. Accessed February 16, 2026. https://www.mentalhealth.va.gov/docs/data-sheets/2025/2025_national_veteran_suicide_prevention_annual_report_part_2_final.pdf

16. Office of the Under Secretary of Defense for Personnel and Readiness. DOD Instruction 6130.03 Volume 1. Medical Standards for Military Service: Appointment, Enlistment, or Induction. U.S. Dept. of War. Change 6 Effective Feb. 3, 2026. Accessed Mar. 3, 2026. https://www.esd.whs.mil/portals/54/documents/dd/issuances/dodi/613003_vol1.pdf?ver=8i9qed7mh4xaa4zosslwza%3d%3d

17. Defense Health Agency. Fatal drug overdoses in service members significantly below national average. Health.mil. April 16, 2025. Accessed Feb. 16, 2026. https://dha.mil/news/2025/04/16/19/24/fatal-drug-overdoses-in-service-members-significantly-below-national-average

Incidence and Burden of Endometriosis Among U.S. Active Component Service Women, 2017–2024

Jessica H. Murray, MPH; Sithembile L. Mabila, PhD, MSc

Endometriosis is a complex gynecological condition affecting nearly 10% of reproductive-aged women. This report updates a 2017 *MSMR* report of gynecological conditions, including endometriosis, from 2012 through 2016 among U.S. active component service women. The current report utilized medical encounter data from 2017 through 2024 to assess the incidence of endometriosis and its health care burden among U.S. active component service women. Factors related to co-occurring gynecological conditions, deployment, parity, and contraceptive use were also examined. Crude incidence rates and incidence rate ratios with 95% confidence intervals were calculated. The overall crude rate of endometriosis was 32.8 cases per 10,000 person-years and increased approximately 42.0% from 2017 to 2024. Incidence rates increased with age and were higher among nulliparous and never-deployed service women. Additionally, obese and underweight service women had higher incidence rates. Menorrhagia was the most common co-occurring condition, with oral birth control the most common form of contraceptive among incident cases. Identification of at-risk service women may help formulate targeted policies for earlier diagnosis to improve both quality of life and military readiness.

What are the new findings?

Incidence of endometriosis increased during the surveillance period, from 28.7 cases per 10,000 person-years in 2017 to 40.7 cases per 10,000 person-years in 2024, co-incident with a general increase of medical encounters for endometriosis, from 2,740 medical encounters in 2017 to 3,864 medical encounters in 2024. Service women who were older, obese or underweight, nulliparous, and never deployed had higher incidence rates.

What is the impact on readiness and force health protection?

Endometriosis is associated with a multitude of symptoms and co-occurring gynecological conditions that can negatively affect daily life, military readiness, and deployability. These findings enable the Military Health System to better identify at-risk service women and formulate policies for earlier diagnosis and treatment, improving quality of life in addition to preserving military readiness.

Endometriosis is a complex gynecological condition in which endometrial-like tissue grows outside the uterus.[1] Symptoms of endometriosis include dysmenorrhea, dyspareunia, severe pelvic pain, and infertility, although some women present as asymptomatic.[2] Approximately 10% of reproductive-age women are affected by this condition[2,3]; however, true prevalence may be under-estimated due to differing case criteria and diagnostic biases in many studies.[3,4] Furthermore, prevalence estimates may be influenced by the use of surgical visualization to obtain definitive diagnosis in addition to delays in surgical diagnosis from symptom onset, which average 7 years.[5] Socio-demographic characteristics, reproductive history, contraception use, personal habits, and body characteristics have been evaluated as potential risk and protective factors for endometriosis, but the literature is inconsistent.[2,6]

Women account for approximately 17% of U.S. active component service members, of whom approximately 98% are of reproductive age (ages <20–49 years).[7] From 2012 to 2016, endometriosis affected an average of 1,113 U.S. active component service women (ACSW) annually, accounting for an annual average of 2,470 medical encounters and 195 bed days each year.[8] Those findings suggest a significant loss of duty time for ACSW due to endometriosis, as well as a heavy burden on the Medical Health System (MHS). Older ACSW, those in the Army, and non-Hispanic Black service women were reported to have higher incidences of endometriosis than their respective counterparts.[8] Co-occurring conditions, including menorrhagia, polycystic ovarian syndrome (PCOS), and uterine fibroids, may also put service women at a higher risk for endometriosis.[8]

Risk and protective factors for endometriosis are inconsistent in the literature.[2,9] Among protective factors, an inverse relationship between body mass index (BMI) and endometriosis has been demonstrated.[2,6] Furthermore, women of greater parity have also shown reduced risk of endometriosis when compared to nulliparous women and women with lower numbers of pregnancies.[10,11] In addition, current or recent oral contraceptive use (risk ratio 0.4, 95% CI 0.2, 0.7) reduced risk of endometriosis by 60% compared to never-users; however, protective effects of oral contraceptives dissipate among former users.[2] While current or recent intrauterine device (IUD) use has demonstrated reduced risk

of endometriosis, other studies have shown no association between IUDs and endometriosis diagnosis.[2]

From 2012 to 2016, the incidence of endometriosis among ACSW was reported as 30.8 cases per 10,000 person-years (p-yrs).[8] This rate is notably higher than a 2006–2015 U.S. population-based study that reported an average incidence rate (IR) of 24.3 cases per 10,000 p-yrs.[12] While health care accessibility and affordability provided by the MHS could explain the higher incidence of endometriosis in the military population, when compared to the civilian population, there is no clear reason why military women are more likely to suffer from endometriosis. Military service-related effects—of deployment, mental health, and reproductive health—could offer other explanations for this anomaly, however.[9,13]

Combat ACSW must be mission ready to deploy; endometriosis and symptomology may hinder this ability, however. Furthermore, combat-related deployments have been linked to physical and mental health issues.[14,15] Female veterans of Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) with mental health issues were more likely to receive a diagnosis of endometriosis compared to female veterans without mental health issues; differences were not found to be due to demographics, service characteristics, or primary care.[9] Negative coping strategies due to personal- and deployment-related stressors may influence reproductive health risks such as unintended pregnancy or deprioritized reproductive health care.[13] Additionally, women who served in OEF, OIF, and Operation New Dawn (OND) with deployments longer than 9 months were more likely to be diagnosed with infertility,[15] a condition linked to endometriosis.[2] A recent report of ACSW of reproductive potential found incidence of infertility at 77.5 cases per 10,000 p-yrs[16]; infertility affects 30.0–50.0% of women with endometriosis.[17] These effects not only raise concerns about reproductive health but force readiness overall.

Previous reports on gynecological disorders among ACSW showed decreased overall annual incidence for all conditions evaluated—with the exceptions of endometriosis and uterine fibroids; IRs for endometriosis and uterine fibroids remained stable.[8] While updated incidence and burden research for uterine fibroids exists,[18] there is a lack of literature singularly focused on endometriosis among ACSW.

While several factors have been consistently observed as protective against diagnosis for endometriosis, those findings have not been widely reported for military populations. The purpose of this study was to assess the incidence of endometriosis diagnosis and its health care burden among U.S. ACSW. Due to the lag in time between onset and diagnosis, true incidence of endometriosis could be determined; therefore, all references to incidence in this report refer to diagnosis incidence rather than onset of symptom incidence. Compared to prior research on this population,[8] relationships between incident endometriosis and deployment, BMI, parity, and contraceptive use were explored, as these factors may influence endometriosis diagnoses. Co-occurring gynecological conditions and endometriosis were also analyzed, similar to previous reporting,[8] to help better understand the reproductive health of ACSW.

Methods

Study population

The study population consisted of all ACSW ages 17–62 years in any branch of service of the U.S. Armed Forces, excluding the Coast Guard, from January 1, 2017 through December 31, 2024. Demographic, deployment, and inpatient and ambulatory care medical encounter records were obtained from the Defense Medical Surveillance System (DMSS); deployment data, only available through December 2022, were analyzed to determine numbers and lengths of deployments at any time prior to incident dates. Demographic variables included age, service branch, racial or ethnic group, rank, marital status, BMI, and occupation. BMI was obtained through the Defense Centers for Public Health–Portsmouth (DCPH-P) MHS Data Repository (MDR) and Periodic Health Assessments (PHAs). BMI records were excluded if height was less than or equal to 1 meter (m); height greater than or equal to 2.5 m; weight less than or equal to 20 kilograms (kg); weight greater than or equal to 180 kg; or obtained during pregnancy. The BMI record closest to the incident date was used for cases, while the BMI record closest to the start of a service record was used for the remaining population.

International Classification of Diseases, 9th and 10th revisions, Clinical Modification (ICD-9-CM/ICD-10-CM) codes were used to determine endometriosis diagnoses and co-occurring gynecological conditions, including menorrhagia, PCOS, uterine fibroids, and infertility **(Table 1)**. In addition to ICD-9-CM/ICD-10-CM codes, Procedure Coding System (ICD-9-PCS/ICD-10-PCS) codes and Current Procedural Terminology (CPT) codes were used to identify prior parity and current contraceptive use **(Table 1)**.

Parity was defined as a delivery-related code **(Table 1)** in any diagnostic position prior to the incident date. Delivery events were counted once every 280 days and recorded as a binary variable ('yes' or 'no') and as a categorical variable representing the number of births (0–3+). Current contraceptive use was defined as use of at least 1 contraceptive type: implant, injection, IUD, oral birth control, patch, vaginal ring, or miscellaneous type (i.e., unspecified or not already listed). Service women were counted once per category. Current use for long-acting contraceptives was determined within 5 years preceding the incident date for IUDs and within 3 years preceding the incident date for implants; all other contraceptive types were determined as current use within 12 months preceding the incident date. Pharmaceutical data were also utilized to analyze contraceptive use for implants, injections, IUDs, oral birth control, patches, and vaginal rings **(Table 1)**.

Case definition

A case of endometriosis was defined as an individual with 1 inpatient encounter with a case-defining code in any diagnostic position or 2 ambulatory encounters within 180 days with a case-defining code in any diagnostic position.[8] Individuals were counted as an incident case once per lifetime.[8]

TABLE 1. Description of Diagnostic Criteria for Outcomes of Interest for Endometriosis, U.S. Active Component Service Women, 2017–2024

Outcomes of Interest	ICD-9-CM	ICD-10-CM	CPT Codes	ICD-9-PCS	ICD-10-PCS	Pharmacological
Endometriosis	617*	N80*				
Menorrhagia	626.2, 626.3, 627.0	N92.0, N92.2, N92.4				
Polycystic ovarian syndrome (PCOS)	256.4	E28.2				
Uterine fibroids	218, 218.0, 218.1, 218.2, 218.9, 280.0[a], 285.1[a], 623.8[a], 626.2[a], 626.6[a], 626.5[a], 627.0[a], 626.8[a], 626.9[a], 625.0[a], 625.3[a], 625.5[a], 625.9[a]	D25, D25.0, D25.1, D25.2, D25.9, D50.0[a], D62[a], N89.8[a], N92.0[a], N92.1[a], N92.3[a], N92.4[a], N92.5[a], N92.6[a], N93.8[a], N93.9[a], N94.1[a], N94.4[a], N94.5[a], N94.6[a], N94.8[a], N94.89[a], N94.9[a], R10.2[a]				
Infertility	628, 628.0, 628.1, 628.2, 628.3, 628.4, 628.8, 628.9	N97, N97.0, N97.1, N97.2, N97.8, N97.9				
Parity	669.71, V27*, 650*	O82, O80, Z37*				
Implant	V25.43, V25.5, V45.52	Z30.017, Z30.46	11975, 11981, 11983, 11977, J7307, J7306, 11976, 11982			Therapeutic drug class for contraceptive in implant form; prescription for Norplant
Injection		Z30.013, Z30.42	J1050, J1051, J1055, J1056			Prescription for Depo-Provera, Depo-SubQ Provera, or Medroxy-progesterone acetate in syringe or vial form
Intrauterine device (IUD)	V25.1, V25.11, V25.12, V25.13, V25.42, V45.51, 996.32	Z30.430, Z30.014, Z30.433, Z30.431, Z97.5, T83.31XA, T83.31XD, T83.31XS, T83.32XA, T83.32XD, T83.32XS, T83.39XA, T83.39XD, T83.39XS, Z30.432	58300, J7302, J7296, J7297, J7298, J7301, J7300, 58301	697	0UH97HZ, 0UH-C7HZ, 0UHC8HZ, 0UH90HZ, 0UH-98HZ, 0UPD7HZ, 0UPD8HZ	Prescription for IUD; prescription for Mirena, Kyleena, Skyla, Liletta, or Paragard
Oral birth control		Z30.011, Z30.41				Therapeutic drug class for contraceptive in capsule or tablet form; prescription for Ortho-Novum or Norethindrone-ethinyl estradiol
Patch		Z30.016, Z30.45	J7304			Therapeutic class for contraceptive in patch form
Vaginal ring		Z30.015, Z30.44	J7303, J7295, J7294			Therapeutic class for contraceptive in vaginal ring form
Miscellaneous		Z30.018, Z30.019, Z30.02, Z30.09, Z30.40, Z30.49, Z30.8, Z30.9	96372, S4993, 57170			

Abbreviations: ICD-9-CM, International Classification of Diseases, 9th Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, 10th Revision, Clinical Modification; CPT, Current Procedural Terminology; ICD-9-PCS, International Classification of Diseases, 9th Revision, Procedure Coding System; ICD-10-PCS, International Classification of Diseases, 10th Revision, Procedure Coding System; PCOS, polycystic ovarian syndrome; IUD, intrauterine device.

*Indicates all codes following the parent code.

[a]Associated symptoms of uterine fibroids. Individuals can be diagnosed with uterine fibroids by a combination of association symptoms and uterine fibroid ICD codes.

Menorrhagia was defined as an individual with 1 inpatient encounter with a case-defining code in the primary diagnostic position or 2 ambulatory encounters within 180-day period with a case-defining code in any diagnostic position.[19] Menorrhagia cases were counted once every 365 days.[19] PCOS was defined as an individual with 1 inpatient encounter with a case-defining code in the primary or secondary diagnostic position, or 2 ambulatory encounters in any diagnostic position.[20] Uterine fibroids were defined as 1 inpatient or ambulatory encounter with a case-defining code in the primary diagnostic position, or 1 inpatient or ambulatory encounter with a case-defining code in the secondary diagnostic position and at least 1 associated symptom **(Table 1)** in the primary diagnostic position.[21] Infertility was defined as 1 inpatient encounter with a case-defining code in the primary diagnostic position or 2 ambulatory encounters with a case-defining code in the primary or secondary diagnostic position.[22] PCOS and uterine fibroids counted once per lifetime, while infertility was counted once per surveillance period.[20-22]

Statistical analysis

Crude IRs for demographic variables and case year were calculated per 10,000 p-yrs. Parity and deployment were stratified by count, while contraceptive use was categorized by type, to assess trends. Incident rate ratios (IRRs) and 95% confidence intervals (CIs) were then calculated for baseline characteristics. Prior parity and deployment may include person-time occurring outside the surveillance period; therefore, overall person-time was used to calculate crude IRs. IRRs were not calculated for prior characteristics, as using the overall person-time produced non-comparable rate contrast. To estimate the health care burden of endometriosis, medical encounters with a case-defining code in the primary diagnostic position were examined to evaluate the total numbers of medical encounters, individuals affected, and hospital bed days. All analyses were conducted using SAS® Enterprise Guide® software (version 8.3, SAS Inst., Inc., Cary, NC).

Results

During the 8-year surveillance period, 5,733 ACSW, or 1.3% of all eligible service women during the period, were diagnosed with an incident case of endometriosis, at an overall rate of 32.8 cases per 10,000 p-yrs **(Table 2)**.

Overall, non-Hispanic Black women (IRR 1.1, 95% CI 1.1, 1.2) and women in health care occupations (IRR 1.7, 95% CI 1.5, 2.1) **(Table 2)** were more likely to be diagnosed with incident endometriosis than their counterparts. Additionally, women with a marital status of married (IRR 2.1, 95% CI 1.9, 2.2) or other (IRR 2.3, 95% CI 2.1, 2.5) were twice as likely to be diagnosed with incident endometriosis.

Rates of incident endometriosis increased with age, with women ages 40 years or older demonstrating the highest IR overall (69.8 cases per 10,000 p-yrs) **(Table 2)**. This trend was generally observed throughout the surveillance period (data not shown). Overall, compared to ACSW of normal BMI, overweight women were 31.0% more likely to be diagnosed with incident endometriosis, while underweight women were 57.0% more likely, and obese women were 97.0% more likely to be diagnosed with endometriosis **(Table 2)**.

Among women with incident endometriosis, 23.1% had co-occurring menorrhagia, while 21.1% had co-occurring infertility, 9.8% had co-occurring uterine fibroids, and 7.3 had co-occurring PCOS (data not shown).

Endometriosis cases with no prior deployments had higher IRs (19.1 cases per 10,000 p-yrs) compared to women with prior deployments (13.7 cases per 10,000 p-yrs) **(Table 3)**. Among women with prior deployments, women with 1 deployment had the highest IR (6.3 cases per 10,000 p-yrs) **(Table 3)**. On average, prior deployments lasted approximately 6 months and occurred about 9 years prior to the incident endometriosis diagnosis **(Table 3)**. Additionally, nulliparous women had a higher IR (22.3 cases per 10,000 p-yrs) compared to uniparous and multiparous women (10.5 cases per 10,000 p-yrs) **(Table 3)**. With each delivery, IRs of endometriosis decreased **(Table 3)**.

Among women with incident endometriosis, 24.0% were not currently using any form of contraceptive, while 76.0% were currently using some form of contraceptive **(Figure 2)**. Oral birth control was the most common (23.1%) type of contraceptive used by ACSW, followed by miscellaneous type (22.2%) and IUDs (16.7%) **(Figure 2)**.

Figure 3 presents the burden of endometriosis among ACSW. The majority of 2017–2024 medical encounters for endometriosis were ambulatory care encounters **(Figure 3)**. The number of medical encounters remained relatively stable before 2021, when a continued annual increase began **(Figure 3)**. The number of individuals with medical encounters decreased in 2018, but since 2020 counts have increased, along with medical encounters **(Figure 3)**. The number of hospital bed days was at its lowest in 2021, while only 2 years later, in 2023, the highest number of hospital bed days was recorded. Counts more than doubled in 2023 compared to the previous year, but this is attributed to a small number of individuals rather than a reflection of the entire population **(Figure 3)**.

Discussion

This study analyzed incidence of diagnosis rates of endometriosis, and this report describes the distributions of prior deployment, parity, and BMI on IRs. Co-occurring gynecological conditions, current contraceptive use, and health care burden were examined as well. Compared to the prior *MSMR* report on endometriosis,[8] overall crude incidence of endometriosis has increased from 30.8 cases per 10,000 p-yrs during 2012-2016 to 32.8 cases per 10,000 p-yrs in 2017-2024. During the surveillance period, IRs increased nearly 42.0% from 2017 to 2024. The current findings suggest an upward trend of newly diagnosed endometriosis among ACSW. When compared to civilian women, ACSW have greater accessibility to health care and diagnosis, provided by MHS, which may explain the increase in endometriosis diagnosis, rather than reflect a true increase in cases.

Consistent with the prior reporting of endometriosis among ACSW,[8] service women who were older, non-Hispanic Black

TABLE 2. Baseline Characteristics, Incident Endometriosis Diagnoses, U.S. Active Component Service Women, 2017–2024

Baseline Characteristics	Total, 2017–2024					
	No.	Person-Years	Rate[a]	IRR	95% LL	95% UL
Total	5,733	1,748,206.6	32.8	—	—	—
Age, *y*						
<20	101	141,070.9	7.2	1.0	Reference	Reference
20–24	1,188	577,167.7	20.6	2.9	2.4	3.5
25–29	1,261	431,240.9	29.2	4.1	3.3	5.0
30–34	1,165	276,482.7	42.1	5.9	4.8	7.2
35–39	1,071	186,552.6	57.4	8.0	6.5	9.8
40+	947	135,691.7	69.8	9.8	7.9	12.0
Race and ethnicity						
White, non-Hispanic	2,542	718,660.7	35.4	1.0	Reference	Reference
Black, non-Hispanic	1,673	423,604.0	39.5	1.1	1.1	1.2
Hispanic	880	355,801.2	24.7	0.7	0.7	0.8
Other	638	250,140.7	25.5	0.7	0.7	0.8
Military rank						
Enlisted	4,579	1,403,673.7	32.6	1.0	Reference	Reference
Officer, warrant officer	1,154	344,532.9	33.5	1.0	1.0	1.1
Branch of service						
Army	2,014	560,863.4	35.9	1.0	Reference	Reference
Navy	1,449	527,902.5	27.4	0.8	0.7	0.8
Marine Corps	228	128,365.0	17.8	0.5	0.4	0.6
Air Force, Space Force	2,042	531,075.7	38.5	1.1	1.0	1.1
Military occupation						
Infantry, artillery, combat engineering	119	51,450.7	23.1	1.0	Reference	Reference
Armor, motor transport	136	54,178.0	25.1	1.1	0.9	1.4
Pilot, air crew	70	28,658.7	24.4	1.1	0.8	1.4
Repair, engineering	958	340,316.8	28.2	1.2	1.0	1.5
Communications, intelligence	2,075	550,639.7	37.7	1.6	1.4	2.0
Health care	1,286	318,709.7	40.4	1.7	1.5	2.1
Other	1,089	404,253.0	26.9	1.2	1.0	1.4
Marital status						
Unmarried	1,651	800,034.0	20.6	1.0	Reference	Reference
Married	3,278	776,131.5	42.2	2.1	1.9	2.2
Other	804	172,041.2	46.7	2.3	2.1	2.5
Body mass index (BMI)						
Underweight (<18.5)	63	19,488.9	32.3	1.6	1.2	2.0
Normal (18.5–24.9)	2,077	793,643.1	26.2	1.0	Reference	Reference
Overweight (25–29.9)	2,348	682,481.5	34.4	1.3	1.2	1.4
Obese (30+)	1,238	240,217.3	51.5	2.0	1.8	2.1
Unknown	7	12,375.8	5.7	0.2	0.1	0.5

Abbreviations: IRR, incidence rate ratio; CI, confidence interval; LL, lower limit; UL, upper limit; *y*, years; BMI, body mass index.
[a] Rate per 10,000 person-years.

race or ethnicity, and in health care occupations had higher rates of endometriosis; similar findings for age at diagnosis were reported for the general population.[11] Civilian women ages 36-45 years were found to have higher IRs of endometriosis.[11] Delayed diagnosis from symptom onset could explain why IRs are higher among women ages 35 years or older compared to younger service women.

Differences between racial and ethnic groups appear to be unique to the military population, when compared to the general population. Several studies have found lower incident endometriosis among non-Hispanic Black women compared to non-Hispanic White women, or no significant difference at all.[11,23,24] Disparities in civilian health care and need for surgical diagnosis may explain differences among military and civilian rates.[23] Further exploration of higher IRs of endometriosis among non-Hispanic Black women compared to civilian populations may be warranted.

Service women with no deployment history prior to endometriosis diagnosis had higher IRs of endometriosis compared to those with prior deployments, while women with 1 deployment had higher IRs than women with multiple deployments. These findings are somewhat unexpected, given the epidemiological associations between deployment and adverse reproductive and mental health outcomes.[9,15] The IRs are crude, however, and therefore the observed difference may be due to unadjusted confounding variables rather than a true statistical difference in risk. Combat trauma could negatively influence mental health, leading to riskier sexual behaviors and avoidance of reproductive health care[11]; these factors lead to poorer reproductive health outcomes.[13]

Determining the effects of deployment on endometriosis are difficult, however, due to the timing of disease onset and disease diagnosis. In this study, deployment occurred approximately 9 years, on average, prior to endometriosis diagnosis. Additionally, women with endometriosis demonstrate poor physical performance compared to women without the condition,[25] which may disqualify women from deployment, possibly inferring the 'healthy warrior effect', with healthier ACSW more likely to deploy. Furthermore, less than 4% of incident cases deployed following diagnosis (data not shown). These findings suggest that endometriosis diagnosis may inhibit deployment of ACSW and require greater medical management of ACSW to maintain force readiness.

BMI is reported to have an inverse relationship with endometriosis,[2,6] and in this study underweight women did have overall higher crude IRs than overweight women; this finding was not evidenced throughout the surveillance period, however (data not shown). Obese service women were observed to have the highest incidence of endometriosis overall, and throughout

FIGURE 1. Incidence of Endometriosis, U.S. Active Component Service Women, 2017–2024

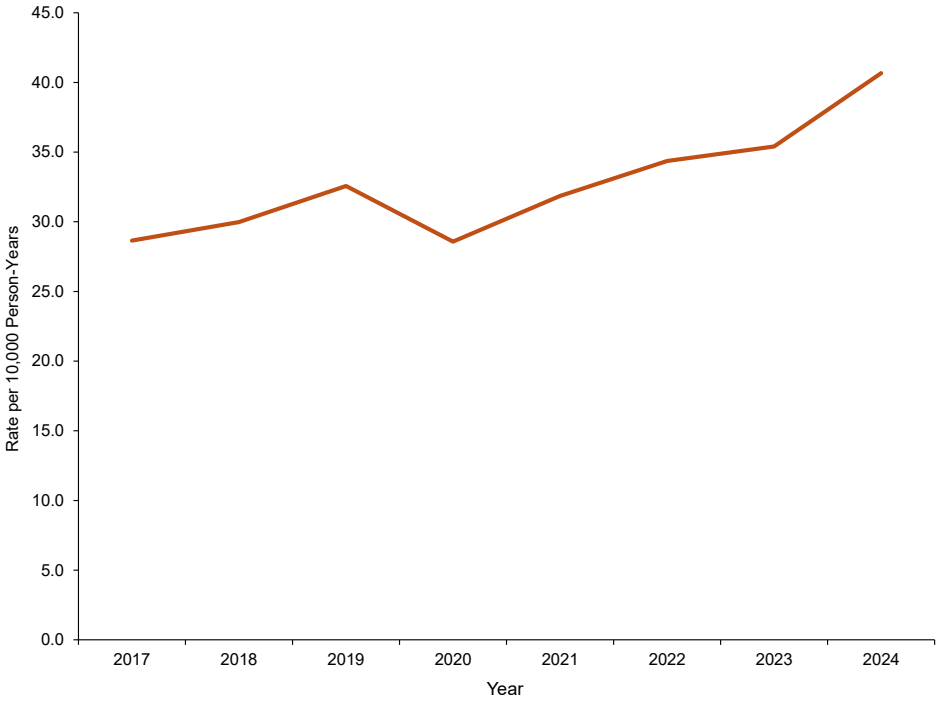
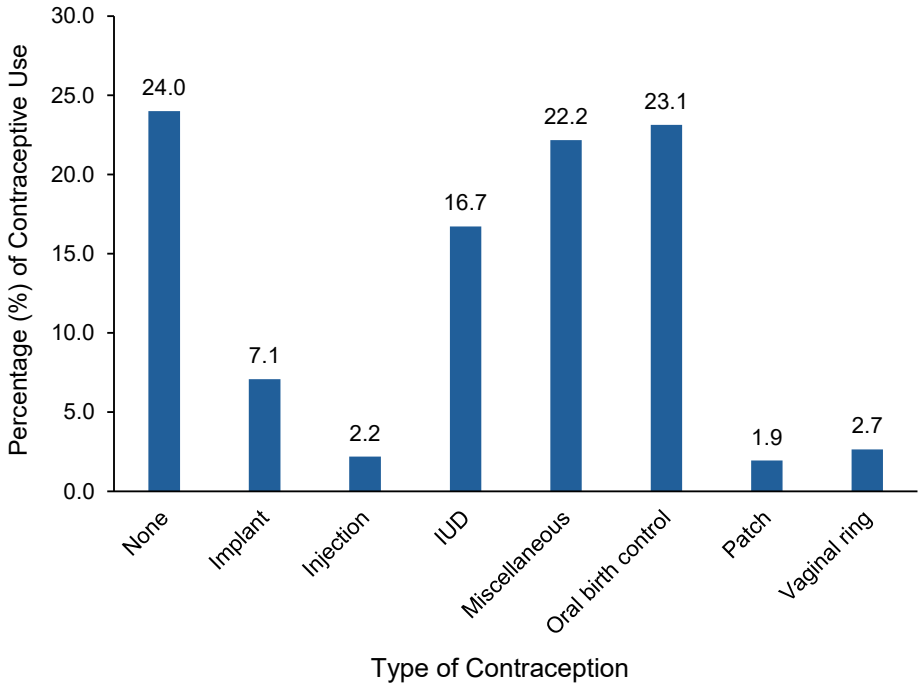


TABLE 3. Prior Deployment and Parity, Incident Endometriosis Diagnoses, U.S. Active Component Service Women, 2017–2024

Prior Characteristics	Total, 2017–2024		
	No.	Person-Years	Rate[a]
Prior parity			
No	3,890	1,748,206.6	22.3
Yes	1,843	1,748,206.6	10.5
Prior parity, *n*			
0	3,890	1,748,206.6	22.3
1	905	1,748,206.6	5.2
2	678	1,748,206.6	3.9
Prior deployment			
No	3,332	1,748,206.6	19.1
Yes	2,401	1,748,206.6	13.7
Prior deployment, *n*			
0	3,332	1,748,206.6	19.1
1	1,094	1,748,206.6	6.3
2	597	1,748,206.6	3.4
3+	710	1,748,206.6	4.1

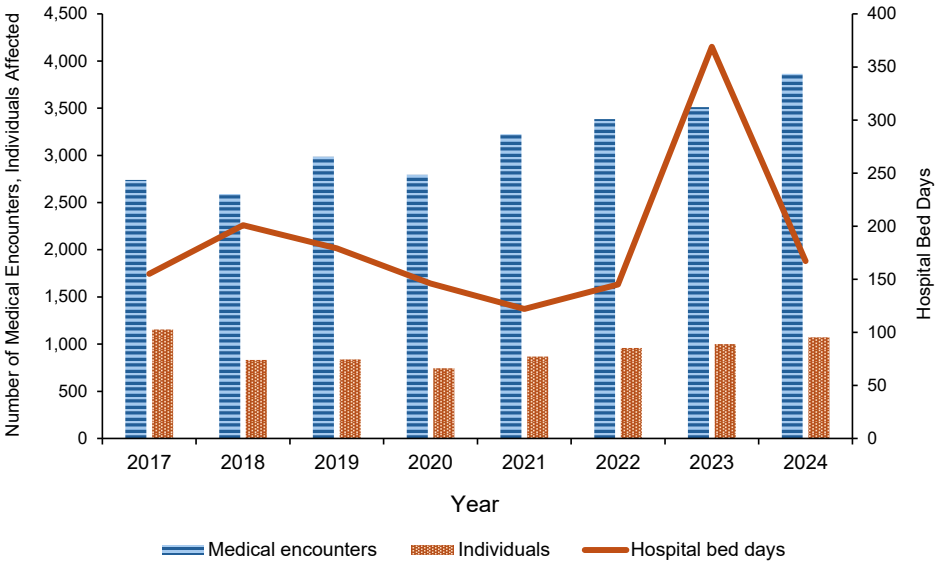
Average duration of deployment: 178 days
Average duration from deployment to incident endometriosis diagnosis: 8.9 years
Abbreviation: No., number; *n*, number.
[a] Rate per 10,000 person-years.

FIGURE 2. Percentage of Current Contraceptive Use, Incident Endometriosis Diagnoses, U.S. Active Component Service Women, 2017–2024



[a]Service women may be included and counted in more than 1 contraceptive type category.

FIGURE 3. Burden of Endometriosis, U.S. Active Component Service Women, 2017–2024



the study. Previous research found that this inverse relationship of BMI and endometriosis was not evident among women ages 30 years or older.[26] When this study examined BMI by age group, underweight ACSW ages 25-34 years had the highest IRs, while in all other age groups, obese ACSW had the highest rates (data not shown). These findings support the previous research,[26] suggesting a greater association of underweight BMI with younger ACSW and endometriosis diagnosis.

Lower parity was associated with higher rates of endometriosis. Given the association between infertility and endometriosis,[17] these findings may be unsurprising, however. In this population, 21.1% of women with incident endometriosis also had co-occurring infertility. Additionally, the majority of endometriosis cases in this population were currently using contraceptives prior to diagnosis. Pregnancy prevention is not the only indication for contraceptive use, as oral contraceptives are a primary or 'first-line' treatment for endometriosis and endometriosis-associated symptoms.[27] Oral birth control was the most common contraceptive type among women in this population.

Several limitations are important to consider when interpreting these findings. The delay in obtaining endometriosis diagnosis[5] creates a challenge for determining disease onset and how reproductive health, demographic, and service-related factors affect the condition. The IRs for prior parity and prior deployment were calculated using overall person-time due to an inability to calculate person-time prior to diagnosis for the population at risk, as not all ACSW at risk in the population were diagnosed with endometriosis. Additionally, the 'healthy warrior effect' may explain higher IRs among ACSW with no deployment history compared to those with deployment history. The crude IRs for prior parity and prior deployment should be evaluated as preliminary and with caution. Lack of a standardized case definition for endometriosis in the literature presents comparison challenges.[3,4] Additionally, the difficulty of obtaining a diagnosis may obscure true incidence. Furthermore, results related to parity and contraceptive use are observational. Reasons why women are nulliparous or contraceptive users are numerous and unknown in this study. Finally, deployment data were only available through 2022, under-estimating rates of prior deployment among ACSW.

Endometriosis is associated with a multitude of symptoms[2] that can affect military readiness and quality of life. Future studies should evaluate endometriosis severity to understand its effects on force readiness and health care provision. A more comprehensive cohort study of symptomology, mental health, deployment, and demographics, from accession to end-of-service contract, may better explain the effects of military service on endometriosis.

Authors' Affiliation
Epidemiology and Analysis Branch, Armed Forces Health Surveillance Division, Public Health Directorate, Defense Health Agency, Silver Spring, MD

Acknowledgments

The authors thank Alexis A. McQuistan, MPH, Epidemiology and Analysis Branch, Armed Forces Health Surveillance Division, for her helpful comments and suggestions during the review process.

Disclaimer

The views expressed in this report reflect the results of research conducted by the authors and do not necessarily reflect the official policy or position of the Defense Health Agency, Department of War, nor the U.S. Government.

References

1. Sarria-Santamera A, Orazumbekova B, Terzic M, et al. Systematic review and meta-analysis of incidence and prevalence of endometriosis. *Healthcare (Basel)*. 2020;9(1):29. doi:10.3390/healthcare9010029
2. Eskenazi B, Warner ML. Epidemiology of endometriosis. *Obstet Gynecol Clin North Am*. 1997;24(2):235-258. doi:10.1016/s0889-8545(05)70302-8
3. World Health Organization. Endometriosis. 2023. Accessed Feb. 17, 2026. https://www.who.int/news-room/fact-sheets/detail/endometriosis
4. Harder C, Velho RV, Brandes I, Sehouli J, Mechsner S. Assessing the true prevalence of endometriosis: a narrative review of literature data. *Int J Gynaecol Obstet*. 2024;167(3):883-900. doi:10.1002/ijgo.15756
5. Nnoaham KE, Hummelshoj L, Webster P, et al. Impact of endometriosis on quality of life and work productivity: a multicenter study across ten countries. *Fertil Steril*. 2011;96(2):366-373.e8. doi:10.1016/j.fertnstert.2011.05.090
6. Shafrir AL, Farland LV, Shah DK, et al. Risk for and consequences of endometriosis: a critical epidemiologic review. *Best Pract Res Clin Obstet Gynaecol*. 2018;51:1-15. doi:10.1016/j.bpobgyn.2018.06.001
7. McQuistan AA, Dreyer E, Mabila SL. Mid-year populations by sex, age, and race and ethnicity of active component service members of the U.S. Armed Forces, 2018–2022. *MSMR*. 2023;30(12):12. Accessed Feb. 17, 2026. https://www.health.mil/news/articles/2023/12/01/msmr-midyear-populations
8. Stahlman S, Williams VF, Taubman SB. Incidence and burden of gynecologic disorders, active component service women, U.S. Armed Forces, 2012–2016. *MSMR*. 2017;24(11):30-38. Accessed Feb. 17, 2026. https://www.health.mil/reference-center/reports/2017/01/01/medical-surveillance-monthly-report-volume-24-number-11
9. Cohen BE, Maguen S, Bertenthal D, et al. Reproductive and other health outcomes in Iraq and Afghanistan women veterans using VA health care: association with mental health diagnoses. *Womens Health Issues*. 2012;22(5):e461-e471. doi:10.1016/j.whi.2012.06.005
10. Parazzini F, Ferraroni M, Fedele L, et al. Pelvic endometriosis: reproductive and menstrual risk factors at different stages in Lombardy, northern Italy. *J Epidemiol Community Health*. 1995;49(1):61-64. doi:10.1136/jech.49.1.61
11. Missmer SA, Hankinson SE, Spiegelman D, et al. Reproductive history and endometriosis among premenopausal women. *Obstet Gynecol*. 2004;104(5 pt 1):965-974. doi:10.1097/01.aog.0000142714.54857.f8
12. Christ JP, Yu O, Schulze-Rath R, et al. Incidence, prevalence, and trends in endometriosis diagnosis: a United States population-based study from 2006 to 2015. *Am J Obstet Gynecol*. 2021;225(5):500.e1-500.e9. doi:10.1016/j.ajog.2021.06.067
13. Gawron LM, Mohanty AF, Kaiser JE, Gundlapalli AV. Impact of deployment on reproductive health in U.S. active-duty servicewomen and veterans. *Semin Reprod Med*. 2018;36(6):361-370. doi:10.1055/s-0039-1678749
14. McAndrew LM, D'Andrea E, Lu SE, et al. What pre-deployment and early post-deployment factors predict health function after combat deployment?: a prospective longitudinal study of Operation Enduring Freedom (OEF)/Operation Iraqi Freedom (OIF) soldiers. *Health Qual Life Outcomes*. 2013;11:73. doi:10.1186/1477-7525-11-73
15. Armed Forces Health Surveillance Center. Health of women after wartime deployments: correlates of risk for selected medical conditions among females after initial and repeat deployments to Afghanistan and Iraq, active component, U.S. Armed Forces. *MSMR*. 2012;19(7):2-10. Accessed Feb. 17, 2026. https://www.health.mil/reference-center/reports/2012/01/01/medical-surveillance-monthly-report-volume-19-number-7
16. Armed Forces Health Surveillance Division. Infertility among active component service women, U.S. Armed Forces, 2019–2023. *MSMR*. 2025;32(5):19-25. Accessed Feb. 17, 2026. https://www.health.mil/news/articles/2025/05/01/msmr-female-infertility
17. Llarena NC, Falcone T, Flyckt RL. Fertility preservation in women with endometriosis. *Clin Med Insights Reprod Health*. 2019;13:1179558119873386. doi:10.1177/1179558119873386
18. Nieh C, Mabila SL. Incidence and health care burden of uterine fibroids among female service members in the active component of the U.S. Armed Forces, 2011–2022. *MSMR*. 2024;31(2):9-15. Accessed Feb. 17, 2026. https://www.health.mil/news/articles/2024/02/01/msmr-uterine-fibroids
19. Armed Forces Health Surveillance Division. Surveillance Case Definition: Menorrhagia. Defense Health Agency, U.S. Dept. of War. 2015. Accessed Feb. 17, 2026. https://www.health.mil/reference-center/publications/2015/01/01/menorrhagia
20. Armed Forces Health Surveillance Division. Surveillance Case Definition: Polycystic Ovarian Syndrome. Defense Health Agency, U.S. Dept. of War. 2015. Accessed Feb. 17, 2026. https://www.health.mil/reference-center/publications/2015/01/01/polycystic-ovarian-syndrome
21. Armed Forces Health Surveillance Division. Surveillance Case Definition: Uterine Leiomyomas (Fibroids). Defense Health Agency, U.S. Dept. of War. 2015. Accessed Feb. 17, 2026. https://www.health.mil/reference-center/publications/2015/01/01/uterine-leiomyomas
22. Armed Forces Health Surveillance Division. Surveillance Case Definition: Female Infertility. Defense Health Agency, U.S. Dept. of War. 2018. Accessed Feb. 17, 2026. https://www.health.mil/reference-center/publications/2018/09/01/female-infertility
23. Katon JG, Plowden TC, Marsh EE. Racial disparities in uterine fibroids and endometriosis: a systematic review and application of social, structural, and political context. *Fertil Steril*. 2023;119(3):355-363. doi:10.1016/j.fertnstert.2023.01.022
24. Bougie O, Yap MI, Sikora L, Flaxman T, Singh S. Influence of race/ethnicity on prevalence and presentation of endometriosis: a systematic review and meta-analysis. *BJOG*. 2019;126(9):1104-1115. doi:10.1111/1471-0528.15692
25. Silva T, Oliveira M, Oliveira E, et al. Are women with endometriosis more likely to experience reduced physical performance compared to women without the condition? *PeerJ*. 2024;12:e16835. doi:10.7717/peerj.16835
26. McCann SE, Freudenheim JL, Darrow SL, Batt RE, Zielezny MA. Endometriosis and body fat distribution. *Obstet Gynecol*. 1993;82(4 pt 1):545-549. doi:10.1097/00006250-199310000-00014
27. Casper RF. Progestin-only pills may be a better first-line treatment for endometriosis than combined estrogen-progestin contraceptive pills. *Fertil Steril*. 2017;107(3):533-536. doi:10.1016/j.fertnstert.2017.01.003

Surveillance Snapshot

Mid-Year Populations by Sex, Age, and Race and Ethnicity of U.S. Active Component Service Members, 2023–2025

This Surveillance Snapshot describes the mid-year population for active component service members (ACSMs) of the U.S. Army, Navy, Air Force, Marine Corps, Space Force, and Coast Guard from 2023 to 2025, stratified by age, sex, and race and ethnicity. Population counts were obtained from June of each calendar year using personnel data from the Defense Manpower Data Center (DMDC) maintained in the Defense Medical Surveillance System (DMSS). Counts and percentages were stratified by sex, age group, and race and ethnicity.

In DMSS, race and ethnicity are categorized as non-Hispanic White, non-Hispanic Black, Hispanic, Asian/Pacific Islander, and American Indian/Alaskan Native, and Other. Both sex and race and ethnicity are self-reported by individual service members. As of 2021, the values for Asian/Pacific Islander and American Indian/Alaskan Native are not populated in DMSS for the Air Force and Coast Guard, and these 2 groups have been included in the 'other' category for this report.

The minimum and maximum mid-year populations of ACSMs ranged from 1,063,862 to 1,085,521 among men and 230,260 to 240,065 among women during the surveillance period. Demographic shifts among ACSMs varied by age and sex. In 2025, 81.8% of the active component was comprised of men, and 18.2% was comprised of women **(Table)**. Stratified by age, the proportion of women was highest among the younger than age 20 years group (21.3%) and lowest in the ages 50-54 years group (15.1%).

Overall, while non-Hispanic White service members represented the largest proportion by race and ethnicity in 2025, that proportion declined over the surveillance period. The proportion of Hispanic service members increased throughout the surveillance period, continuing a recent trend.[1] The greatest demographic shifts are seen in the younger than age 20 years group, with the greatest percent increase in numbers among service members identifying as Black, non-Hispanic, Hispanic, and 'other' for both sexes. Among female service members younger than age 20 years, those identifying as Hispanic constituted the largest group (35.4%) in 2025. Similar trends are seen among male service members younger than age 20 years, where non-Hispanic White male service members represented less than half of men in that age group (46.7%), and the proportion of Hispanic men has increased since 2023 (29.5%). Among older age groups, demographic shifts are less pronounced. These data can be used to provide additional context for health surveillance analyses for U.S. ACSMs.

REFERENCE

1. McQuistan A, Dreyer E, Mabila S. Mid-year populations by sex, age, and race and ethnicity of active component service members of the U.S. Armed Forces, 2018–2022. *MSMR*. 2023;30(12):12. Accessed Feb. 26, 2026. https://health.mil/reference-center/reports/2023/12/01/msmr-vol-30-no-12-dec-2023

TABLE. Number of Active Component Service Members in June[a], 2023–2025, Stratified by Sex, Age Group, and Race and Ethnicity

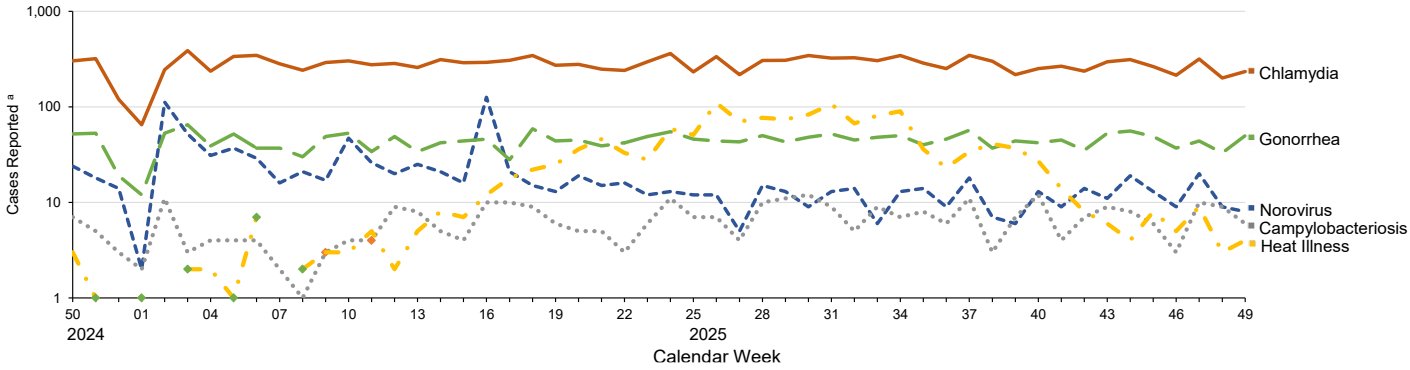
		2023				2024				2025			
		Men		Women		Men		Women		Men		Women	
Age	Race and Ethnicity	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<20	White, non-Hispanic	32,612	51.2	5,327	35.1	30,711	47.7	5,083	31.0	32,694	46.7	5,661	30.2
	Black, non-Hispanic	9,220	14.5	3,596	23.7	9,791	15.2	4,181	25.5	10,540	15.0	4,738	25.2
	Hispanic	16,459	25.8	4,788	31.5	18,262	28.4	5,556	33.9	20,652	29.5	6,636	35.4
	Other[b]	5,441	8.5	1,468	9.7	5,630	8.7	1,575	9.6	6,160	8.8	1,735	9.2
20–24	White, non-Hispanic	179,502	54.0	28,964	39.5	167,393	52.2	26,434	37.3	162,019	50.2	25,712	34.8
	Black, non-Hispanic	46,620	14.0	16,236	22.2	46,908	14.6	16,452	23.2	49,404	15.3	18,275	24.7
	Hispanic	73,337	22.1	19,416	26.5	74,739	23.3	19,677	27.8	79,458	24.6	21,358	28.9
	Other[b]	32,792	9.9	8,681	11.8	31,644	9.9	8,296	11.7	31,873	9.9	8,540	11.6
25–29	White, non-Hispanic	137,542	54.8	23,472	41.0	133,008	53.9	22,504	39.9	132,841	52.6	22,471	38.7
	Black, non-Hispanic	36,939	14.7	13,058	22.8	36,711	14.9	12,994	23.0	38,749	15.3	13,694	23.6
	Hispanic	45,686	18.2	12,043	21.0	47,039	19.1	12,457	22.1	50,423	20.0	13,370	23.0
	Other[b]	31,038	12.4	8,660	15.1	30,137	12.2	8,480	15.0	30,463	12.1	8,497	14.6
30–34	White, non-Hispanic	98,950	55.3	16,028	40.9	95,696	54.1	15,691	40.1	93,453	53.0	15,341	38.9
	Black, non-Hispanic	26,295	14.7	9,330	23.8	26,791	15.1	9,403	24.0	27,536	15.6	9,657	24.5
	Hispanic	29,064	16.2	7,135	18.2	29,635	16.8	7,364	18.8	30,772	17.5	7,760	19.7
	Other[b]	24,675	13.8	6,672	17.0	24,733	14.0	6,671	17.0	24,479	13.9	6,724	17.0
35–39	White, non-Hispanic	83,509	58.7	11,134	41.8	81,035	57.7	11,187	41.5	79,512	56.3	11,480	40.6
	Black, non-Hispanic	19,498	13.7	6,564	24.6	19,671	14.0	6,564	24.3	20,436	14.5	7,005	24.8
	Hispanic	20,309	14.3	4,341	16.3	20,590	14.7	4,519	16.7	21,557	15.3	4,788	17.0
	Other[b]	19,021	13.4	4,594	17.2	19,221	13.7	4,718	17.5	19,689	13.9	4,973	17.6
40–44	White, non-Hispanic	44,675	59.3	5,757	43.2	44,067	58.9	5,866	43.1	44,868	58.4	6,091	42.1
	Black, non-Hispanic	10,183	13.5	3,360	25.2	10,157	13.6	3,335	24.5	10,714	13.9	3,559	24.6
	Hispanic	10,200	13.5	1,926	14.4	10,174	13.6	2,015	14.8	10,458	13.6	2,193	15.2
	Other[b]	10,251	13.6	2,294	17.2	10,444	14.0	2,404	17.7	10,821	14.1	2,620	18.1
45–49	White, non-Hispanic	17,168	60.6	2,013	44.9	16,265	59.9	2,052	44.7	16,171	59.4	2,234	45.6
	Black, non-Hispanic	3,746	13.2	1,114	24.9	3,542	13.0	1,128	24.6	3,556	13.1	1,152	23.5
	Hispanic	3,620	12.8	556	12.4	3,540	13.0	595	13.0	3,611	13.3	626	12.8
	Other[b]	3,802	13.4	797	17.8	3,801	14.0	812	17.7	3,892	14.3	886	18.1
50–54	White, non-Hispanic	6,716	64.2	810	47.2	6,058	62.5	765	46.7	5,724	61.2	771	46.5
	Black, non-Hispanic	1,365	13.0	447	26.0	1,296	13.4	393	24.0	1,257	13.4	404	24.4
	Hispanic	1,026	9.8	175	10.2	1,014	10.5	178	10.9	1,040	11.1	182	11.0
	Other[b]	1,358	13.0	284	16.6	1,320	13.6	302	18.4	1,339	14.3	302	18.2
55+	White, non-Hispanic	1,932	66.6	319	51.4	1,845	65.0	302	49.6	1,935	63.6	321	51.0
	Black, non-Hispanic	363	12.5	169	27.2	355	12.5	152	25.0	402	13.2	144	22.9
	Hispanic	212	7.3	44	7.1	228	8.0	54	8.9	268	8.8	58	9.2
	Other[b]	395	13.6	89	14.3	411	14.5	101	16.6	439	14.4	107	17.0
Total	White, non-Hispanic	602,606	55.5	93,824	40.5	576,078	54.1	89,884	39.0	569,217	52.7	90,082	37.5
	Black, non-Hispanic	154,229	14.2	53,874	23.3	155,222	14.6	54,602	23.7	162,594	15.1	58,628	24.4
	Hispanic	199,913	18.4	50,424	21.8	205,221	19.3	52,415	22.8	218,239	20.2	56,971	23.7
	Other[b]	128,773	11.9	33,539	14.5	127,341	12.0	33,359	14.5	129,155	12.0	34,384	14.3

Abbreviation: No. number.
[a]Army, Navy, Air Force, Marine Corps, Space Force, and Coast Guard.
[b]Includes those of American Indian/Alaska Native, Asian/Pacific Islander, and unknown racial and ethnic group.

Reportable Medical Events at Military Health System Facilities Through Week 49, Ending December 6, 2025

Matthew W.R. Allman, MPH; Anthony R. Marquez, MPH; Katherine S. Kotas, MPH; Kiara Scatliffe-Carrion, MPH

TOP 5 REPORTABLE MEDICAL EVENTS[a] BY CALENDAR WEEK, U.S. ACTIVE COMPONENT SERVICE MEMBERS, DECEMBER 8, 2024–DECEMBER 6, 2025



[a]Cases are shown on a logarithmic scale.

Abbreviation: RMEs, reportable medical events.

Note: There were 0 reported heat illness cases during weeks 52 of 2024, and during weeks 2 and 7 of 2025.

Reportable Medical Events (RMEs) are documented in the Disease Reporting System internet (DRSi) by health care providers and public health officials throughout the Military Health System (MHS) for monitoring, controlling, and preventing the occurrence and spread of diseases of public health interest or readiness importance. These reports are reviewed by each service's public health surveillance hub. The DRSi collects reports on over 70 different RMEs, including infectious and non-infectious conditions, outbreak reports, STI risk surveys, and tuberculosis contact investigation reports. A complete list of RMEs is available in the *2022 Armed Forces Reportable Medical Events Guidelines and Case Definitions*.[1] Data reported in these tables are considered provisional and do not represent conclusive evidence until case reports are fully validated.

Total active component cases reported per week are displayed for the top 5 RMEs for the previous year. Each month, the graph is updated with the top 5 RMEs, and is presented with the current month's (November 2025) top 5 RMEs, which may differ from previous months. COVID-19 is excluded from these graphs due to changes in reporting and case definition updates in 2023.

For questions about this report, please contact the Disease Epidemiology Branch at the Defense Centers for Public Health–Aberdeen. Email: dha.apg.pub-health-a.mbx.disease-epidemiologyprogram13@health.mil

Authors' Affiliation: Defense Health Agency, Disease Epidemiology Branch, Defense Centers for Public Health–Aberdeen

References

1. Armed Forces Health Surveillance Division. Armed Forces Reportable Medical Events. Accessed Feb. 28, 2024. https://health.mil/reference-center/publications/2022/11/01/armed-forces-reportable-medical-events-guidelines
2. Defense Manpower Data Center. Department of Defense Active Duty Military Personnel by Rank/Grade of Service. Accessed Feb. 28, 2024. https://dwp.dmdc.osd.mil/dwp/app/dod-data-reports/workforce-reports
3. Defense Manpower Data Center. Armed Forces Strength Figures for January 31, 2023. Accessed Feb. 28, 2024. https://dwp.dmdc.osd.mil/dwp/app/dod-data-reports/workforce-reports
4. Navy Medicine. Surveillance and Reporting Tools–DRSI: Disease Reporting System Internet. Accessed Feb. 28, 2024. https://www.med.navy.mil/navy-marine-corps-public-health-center/preventive-medicine/program-and-policy-support/disease-surveillance/drsi

TABLE. Reportable Medical Events, Military Health System Facilities, November 2025[a]

Reportable Medical Event[b]	Active Component[c]					MHS Beneficiaries[d]
	November 2025	October 2025	YTD 2025	YTD 2024	Total 2024	November 2025
	No.	No.	No.	No.	No.	No.
Amebiasis	1	0	15	14	15	0
Arboviral disease, neuroinvasive, non-neuroinvasive	0	1	3	4	4	0
Babesiosis	0	0	1	0	0	0
Brucellosis	0	0	0	1	1	0
COVID-19-associated hospitalization, death	1	0	32	39	41	5
Campylobacteriosis	29	34	318	301	326	19
Chikungunya virus disease	0	0	0	0	1	0
Chlamydia trachomatis infection	1,013	1,259	13,602	14,967	16,098	126
Cholera, O1, O139	0	0	0	3	3	0
Coccidioidomycosis	2	1	22	46	53	1
Cold weather injury[e,f]	17	8	309	156	174	N/A
Cryptosporidiosis	3	3	62	79	82	0
Cyclosporiasis	0	0	22	11	11	0
Dengue virus infection	0	0	8	12	12	0
E. coli, Shiga toxin-producing	2	4	61	79	93	5
Ehrlichiosis, anaplasmosis	0	1	2	1	1	1
Giardiasis	8	5	98	95	98	5
Gonorrhea	165	214	2,126	2,626	2,823	13
H. influenzae, invasive	0	0	2	3	3	0
Heat illness[e]	25	47	1,392	1,272	1,276	N/A
Hepatitis A	0	1	2	7	7	1
Hepatitis B, acute, chronic[g]	2	8	73	99	108	4
Hepatitis C, acute, chronic	2	2	25	34	35	1
Influenza-associated hospitalization[h]	4	0	53	45	54	8
Lead poisoning, pediatric[i]	N/A	N/A	N/A	N/A	N/A	7
Legionellosis	1	0	2	5	5	0
Leishmaniasis	0	0	1	0	0	0
Leprosy	0	0	0	2	2	0
Listeriosis	0	0	1	0	0	0
Lyme disease	4	4	95	100	101	4
Malaria	0	1	30	18	21	0
Measles	0	0	0	0	0	1
Meningococcal disease	0	0	2	2	2	0
Mpox	1	2	10	14	14	0
Mumps	0	0	2	0	0	1
Norovirus infection[j]	51	60	1,005	563	654	71
Pertussis	1	1	39	36	39	2
Q fever	0	0	1	2	3	0
Rabies post-exposure prophylaxis (PEP)	48	61	600	590	637	27
Rubella	0	0	0	0	0	1
Salmonellosis	8	17	156	149	160	17
Schistosomiasis	0	0	0	1	1	0
Shigellosis	4	4	39	49	53	1
Spotted fever rickettsiosis	2	6	37	22	22	0
Syphilis[k]	21	37	420	553	587	4
Toxic shock syndrome	0	0	0	2	2	1
Trypanosomiasis	0	0	2	5	5	0
Tuberculosis	0	1	9	6	6	0
Tularemia	0	0	2	1	1	0
Typhoid fever	0	0	0	1	1	0
Typhus fever	1	1	9	2	2	1
Varicella	0	1	14	14	18	3
Zika virus infection	0	0	0	1	1	0
Total case counts	1,416	1,784	20,704	22,032	23,656	330

Abbreviations: MHS, Military Health System; YTD, year-to-date; No., number; N/A, not applicable; *E, Escherichia*; *H., Haemophilus*; PEP, post-exposure prophylaxis; DCPH-A, Defense Centers for Public Health–Aberdeen.

[a] RMEs submitted to DRSi as of Feb. 5, 2026. RMEs were classified by date of diagnosis or, where unavailable, date of onset. Monthly comparisons are displayed for the periods Oct. 1, 2025–Oct. 31, 2025 and Nov. 1, 2025–Nov. 30, 2025. YTD comparison is displayed for the period Jan. 1, 2025–Nov. 30, 2025 for MHS facilities. Previous year counts are provided as: previous YTD, Jan. 1, 2024–Nov. 30, 2024; total 2024, Jan. 1, 2024–Dec. 31, 2024.

[b] RME categories with 0 reported cases among active component service members and MHS beneficiaries for the periods covered were not included in this report.

[c] Services included in this report include the Army, Navy, Air Force, Marine Corps, Coast Guard, and Space Force, including personnel classified as active duty, cadet, midshipman, or recruit in DRSi.

[d] Beneficiaries included individuals classified as retired or family members (e.g., spouse, child, other, unknown). National Guard, Reservists, civilians, contractors, and foreign nationals were excluded from these counts.

[e] Only reportable for service members.

[f] There is a 98% increase in DRSi reports for cold weather injury YTD 2025 (n=309) compared to YTD 2024 (n=156).

[g] Observed decrease in hepatitis B cases from 2024 to 2025 may be due, in part, to updated case validation process.

[h] Influenza-associated hospitalization is reportable only for individuals younger than age 65 years.

[i] Pediatric lead poisoning is reportable only for children ages 6 years or younger.

[j] DCPH-A is closely monitoring norovirus due to a 79% increase in DRSi reports for norovirus YTD 2025 (n=1,005) compared to YTD 2024 (n=563).

[k] Observed drop in syphilis cases from 2024 to 2025 may be due, in part, to updated case validation process that began Jan. 2024.

The ***Medical Surveillance Monthly Report (MSMR)***, in continuous publication since 1995, is produced by the Armed Forces Health Surveillance Division (AFHSD) of the Defense Health Agency (DHA) Public Health Directorate. AFHSD is a designated public health authority within the Defense Health Agency. *MSMR* provides evidence-based estimates of the incidence, distribution, impact, and trends of illness and injuries among U.S. military members and associated populations. Most reports in *MSMR* are based on summaries of medical administrative data routinely provided to AFHSD and integrated within the Defense Medical Surveillance System for health surveillance purposes.

- *Archive:* Past issues of *MSMR* are available as downloadable PDF files at www.health.mil/MSMRArchives.
- *Online Subscriptions:* Submit subscription requests at www.health.mil/MSMRSubscribe.
- *Editorial Inquiries*: Call (301) 319-3240 or email dha.ncr.health-surv.mbx.msmr@health.mil.
- *Instructions for Authors:* Information about article submissions is provided at www.health.mil/MSMRInstructions.

Follow us:

Facebook: https://www.facebook.com/AFHSDPAGE

Twitter: https://twitter.com/AFHSDPAGE

ISSN 2158-0111 (print)

ISSN 2152-8217 (online)

Medical Surveillance Monthly Report (MSMR)
Defense Health Agency—Public Health
Armed Forces Health Surveillance Division
11800 Tech Road, Suite 220
Silver Spring, MD 20904