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Cold Weather Injuries Among the Active and Reserve Components of the U.S. Armed Forces, July 2020–June 2025

Trends in the Prevalence of Obesity Among U.S. Active Component Service Members and Civilians, 2013–2023

Diagnoses of Mental Health Disorders Among U.S. Active Component Service Members, 2020–2024

Perinatal Mental Health Conditions Among U.S. Active Component Service Women, 2016–2022

Reportable Medical Events at Military Health System Facilities Through Week 36, Ending September 6, 2025

Table of Contents

Update

Cold Weather Injuries Among the Active and Reserve Components of the U.S. Armed Forces, July 2020–June 2025

From July 2024 through June 2025, a total of 806 members of the active (n=702) and reserve (n=104) components of the U.S. Armed Forces had at least 1 cold weather injury. Compared to the 2023-2024 cold season, the cold weather injury rates during the 2024-2025 cold season increased by 41.8% (from 38.6 to 54.7 per 100,000 person-years) and 45.8% (from 8.5 to 12.4 per 100,000 person-years) in the active and reserve components, respectively. The Army, Navy, and Marine Corps recorded their highest cold weather injury rates during the 2024-2025 season of the 5-year surveillance period. Frostbite was the most common cold weather injury in the Army, Navy, and Marine Corps, with the Marine Corps experiencing the largest surge in frostbite rates. Over the entire surveillance period, U.S. active component service member cold weather injury rates were generally higher among male service members, non-Hispanic Black individuals, and those under age 20 years.

What are the new findings?

The incidence rate of cold weather injuries among active component service members increased by over 40% between the 2023-2024 and 2024-2025 cold seasons, resulting in a 5-year rate of 41.5 per 100,000 person-years. This increase was primarily attributable to higher rates in the Army, Navy, and Marine Corps. The Marine Corps evinced the largest incidence rate increase (77.4%) during the 2024-2025 cold season. This year's update expanded cold injury surveillance to include "other specified and unspecified effects of reduced temperature," to provide a more comprehensive assessment of cold weather injuries.

What is the impact on readiness and force health protection?

Despite the terminology, cold weather injuries can occur in a variety of conditions, and in much warmer temperatures than expected, particularly during operations or training in wet or aquatic environments. It is essential that both service members and leadership understand the hazards in their environments, the risks to health, and proven prevention strategies, including weather-appropriate clothing, clean, dry socks and footwear, and proper protective gear for bodily extremities.

Cold weather injuries are of significant military concern due to potential effects on service members (e.g., morbidity and potential disability) and the total force (e.g., adverse impacts on operations and costs of treatment).[1,2] In response, the U.S. Armed Forces have developed, and are continually improving, their training, doctrine, procedures, and protective equipment and clothing to counter the threat of cold environments.[3-6] Although these measures are effective when properly implemented, cold weather injuries continue to affect hundreds of service members each cold season due to exposures to both cold and wet environments.[7,8]

Cold weather injuries can be broadly categorized in 2 major groups: those with a central effect and those primarily affecting the body's periphery. Hypothermia occurs if the body cannot maintain a core temperature at or above 95°F. If skin temperatures reach 95°F, the body's physiological response is triggered to minimize loss of heat and maintain core temperature for vital organ protection.[9,10] This response is achieved by decreasing blood flow to the extremities and redistributing warm blood to the body's core.[9-11] Lack of blood flow to the extremities, even before a drop in core temperature, is the leading cause of peripheral cold injuries.

Initially, hypothermia may impair cognition (e.g., confusion, slurred speech, memory loss), heart rate, and breathing. Severe hypothermia can lead to loss of consciousness, pulmonary edema, coma, ventricular arrhythmias (including ventricular fibrillation), and asystole.[10,12,13] Freezing atmospheric temperatures are not required to produce hypothermia, particularly when water immersion is involved. Because heat loss occurs 2 to 5 times faster in water compared to air, core body temperature can start to drop in water temperatures as warm as 80°F.[10]

Peripheral cold injuries, which mainly affect the hands, feet, and face, can be further classified as either freezing injuries, such as frostbite, or non-freezing injuries, such as immersion foot. Freezing peripheral injury is defined as the damage sustained by tissues when skin temperatures fall below freezing, most frequently affecting tissues of the ears, nose, cheeks, chin, fingers, and toes.[10,11,14-16] A substantial proportion of patients with peripheral frostbite experience permanent changes in microcirculation and disruption of localized nerve functions (e.g., reduced sensation in affected area).[15] Although most frostbite damage is minor, severe injury may lead to impaired functioning and inability to perform occupational tasks due to hypersensitivity to cold, chronic ulceration, vasospasm, localized osteoarthritis, or chronic pain.[11,15,17]

Non-freezing peripheral injury includes a spectrum of localized injuries to the soft tissues, nerves, and vasculature of distal extremities that result from prolonged exposure to wet, cold (generally 32–59°F) conditions; the injury process is generally slower in warmer water.[10,11,14,18] Although most non-freezing peripheral injuries involve feet, any body part can be affected by the condition, including hands.[19] When immersion foot injury occurs, the foot becomes hyperemic (i.e., increased blood flow), painful, and swollen with continuous exposure; progression to blistering, decreased blood flow, ulceration, and gangrene is gradual.[11,18,20]

Environmental factors that increase risk of cold weather injury include specific geographic locations including high altitudes, prolonged outdoor exposure to temperatures 40°F and lower, wind speeds exceeding 5 miles per hour, wet conditions due to rain or snow, or submersion in cold water, in addition to lack of adequate shelter and clothing.[19] Situational factors that increase risk of immersion foot include immobility, wet socks, and constrictive footwear.[20-22] Individual risk factors vary and include prior cold weather injury, improper acclimatization, dehydration, fatigue, inadequate nutrition, alcohol use, smoking, medications that impair compensatory responses (e.g., oral anti-hyperglycemics, beta-blockers, general anesthetic agents), and chronic disease (e.g., peripheral vascular disease, diabetes).[10,11,16,20-22]

Continuous surveillance of cold weather injuries is essential to understand the magnitude of risk they pose, inform prevention efforts, and remind leaders of the hazards of training and operating in wet and cold environments. Department of Defense guidelines for reportable medical events (RMEs) require reporting of cases of hypothermia, freezing peripheral injuries (e.g., frostbite), and non-freezing peripheral injuries (e.g., immersion injuries, chilblains).[23]

Since 2004, *MSMR* has published annual updates on the incidence of cold weather injuries affecting U.S. Armed Force members for the 5 most recent cold seasons.[24] The timing of these annual updates is intended to call attention to the recurring risks of such injuries as winter approaches in the Northern Hemisphere, where most members of the U.S. Armed Forces are assigned. Following a period of more limited scope, this update restored expanded cold weather injury surveillance last reported in 2017.[25] The current report now includes—in addition to frostbite, immersion injury, and hypothermia—unspecified cold injuries with "other effects of reduced temperature" for more complete case ascertainment.

Methods

This surveillance population included all individuals who served in the active or reserve components of the U.S. Armed Forces at any time during the surveillance period of July 1, 2020 through June 30, 2025. For analysis purposes, a cold season was defined as July 1 through June 30 intervals, to allow for complete representation of cold weather seasons with annual summaries and appropriate comparisons. Due to data availability that began in January 2023, Space Force service members were classified separately starting in the 2022-2023 cold season; previously they were classified as Air Force.

Records of cold weather injuries for freezing peripheral injuries (i.e., frostbite), non-freezing peripheral injuries (i.e., immersion hand, foot injuries), hypothermia, and unspecified cold weather injuries were identified from 2 sources: 1) RMEs submitted to the Disease Reporting System internet (DRSi) and 2) diagnostic codes from inpatient and outpatient medical encounters in the Defense Medical Surveillance System and in-theater records from the Theater Medical Data Store (which maintains electronic records of medical encounters of deployed service members). A cold weather injury case was defined by the presence of an RME or 1 of any of the following qualifying International Classification of Diseases, 10th Revision (ICD-10) codes in the first diagnostic position of an encounter for frostbite (T33*, T34*), immersion injury (T69.0*), hypothermia (T68*), or other effects of reduced temperature (T69.8, T69.9). Additional analyses were conducted to examine the distribution of cold injury types by services to further assess trends.

To estimate the number of unique individuals who experienced a cold weather injury each cold season, and to avoid inclusion of follow-up health care encounters, only 1 cold weather injury per individual per season was included in the counts of 'any cold weather injury'. For analyses of specific cold weather injury types (frostbite, immersion injury, hypothermia, unspecified), individuals could contribute a maximum of 1 case per cold weather injury type per season to the 'all cold weather injuries' count. For example, if an individual was diagnosed or reported with an immersion injury at 1 point during a cold season, then with frostbite later in the same cold season, each different injury type would be included in injury-specific calculations. If a service member had multiple medical encounters for the same cold weather injury, only 1 encounter was included in this analysis. Hospitalization encounters were prioritized over ambulatory health care visits.

Annual seasonal incidence rates (IRs) of cold weather injuries among active component service members (ACSMs) were calculated as incident cold weather injury diagnoses per 100,000 person-years (p-yrs) of service. Annual seasonal IRs of cold weather injuries among reservists were calculated as cases per 100,000 persons, using the total number of reserve component service members for each cold season of the surveillance period. Person counts were used as the denominator for reserve component because the lack of start and end dates for active duty service periods precluded accurate person-time calculation.

Cold weather injuries are summarized by the locations where service members were treated for those injuries, identified by a Defense Medical Information System Identifier (DMIS ID) of a health care encounter. Because such injuries can occur during field training, temporary duty, or outside usual duty stations, DMIS IDs were utilized as proxies for locations where cold weather injuries occurred.

Results

2024–2025 cold season

From July 2024 through June 2025, a total of 806 members of the active (n=702) and reserve (n=104) components of the U.S. Armed Forces had at least 1 cold weather injury (Table 1). In the active component, Army members had the highest rate of any cold weather injury (n=417, 95.5 per 100,000 p-yrs) during the 2024-2025 cold season, followed by members of the Marine Corps (n=147, 88.7 per 100,000 p-yrs), Air Force (n=85, 27.6 per 100,000 p-yrs), and Navy (n=48, 14.8 per 100,000 p-yrs). One active component Space Force member (10.6 per 100,000 p-yrs) and 4 active component Coast Guard members (10.0 per 100,000 p-yrs) were affected by cold weather injuries during the 2024-2025 cold season (Table 1, Figure 1). Within the reserve component, Army personnel accounted for 77.9% of the cold injury cases (n=81, 14.7 per 100,000 persons) in the 2024-2025 cold season (Table 1, Figure 2), although reservists in the Marine Corps (n=8, 20.6 per 100,000 persons) had higher rates of cold weather injuries.

Frostbite was the most common type of cold weather injury among active component Army (n=167, 35.1%, Table 2a), Marine Corps (n=63, 40.1%, Table 2d) and Air Force (n=49, 53.3%, Table 2c) members in 2024-2025, whereas immersion injury (n=15, 30.6%) and hypothermia (n=15, 30.6%) were the most common types of cold weather injuries among Navy service members (Table 2b).

Five cold seasons: July 2020–June 2025

The crude IR for all 5 cold seasons of any cold weather injury was 41.5 per 100,000 p-yrs for all ACSMs (Table 1).

In the most recent cold season, 2024-2025, the crude IR of any cold weather injury for all ACSMs increased by 41.8%, from 38.6 per 100,000 p-yrs in 2023-2024 to 54.7 per 100,000 p-yrs in 2024-2025 (Table 1), the highest value documented during the 5-year surveillance period. Similarly, the crude IR of any cold weather injury for the reserve component increased by 45.8% in 2024-2025 (from 8.5 to 12.4 per 100,000 persons) from the prior season. Throughout the surveillance period, cold weather injury rates remained consistently higher among ACSMs in the Army and Marine Corps (Figure 1).

During the 5-year surveillance period, overall rates of all cold weather injuries in the active component were generally higher among service members who were male (except in the Marine Corps), non-Hispanic Black individuals, and among the 2 youngest age groups (ages <20 and 20-24 years) (Tables 2a–2d). When specific types

TABLE 1. Annual Incidence of Service Members Affected by Any Cold Injury (1 per person per season), by Service and Component, July 2020–June 2025

	Army		Navy		Air Force		Marine Corps		Coast Guard		Space Force		All Services	
	No.	Rate[a]	No.	Rate[a]	No.	Rate[a]	No.	Rate[a]	No.	Rate[a]	No.	Rate[a]	No.	Rate[a]
Active component														
All years (2020–2025)	1,649	72.2	178	10.7	405	25.4	490	56.9	22	11.1	4	17.1	2,748	41.5
Jul. 2020–Jun. 2021	325	68.1	30	8.8	65	19.7	112	62.2	3	7.4	0	0.0	535	39.1
Jul. 2021–Jun. 2022	339	71.9	33	9.7	82	25.3	82	46.4	6	14.9	0	0.0	542	40.0
Jul. 2022–Jun. 2023	284	62.6	31	9.3	84	26.4	65	38.1	4	10.3	1	20.6	469	35.6
Jul. 2023–Jun. 2024	284	64.1	36	11.1	89	28.4	84	50.0	5	12.8	2	22.2	500	38.6
Jul. 2024–Jun. 2025	417	95.5	48	14.8	85	27.6	147	88.7	4	10.0	1	10.6	702	54.7
Reserve component														
All years (2020–2025)	267		16		58		42		4		0		387	
Jul. 2020–Jun. 2021	49	8.5	6	9.5	16	8.5	11	25.6	1	15.1	0	0.0	83	9.5
Jul. 2021–Jun. 2022	45	8.0	2	3.2	7	3.7	6	14.2	2	30.3	0	0.0	62	7.2
Jul. 2022–Jun. 2023	47	8.7	2	3.3	13	7.1	5	12.7	0	0.0	0	0.0	67	8.1
Jul. 2023–Jun. 2024	45	8.2	2	3.3	11	6.1	12	31.1	1	15.1	0	0.0	71	8.5
Jul. 2024–Jun. 2025	81	14.7	4	6.4	11	6.1	8	20.6	0	0.0	0	0.0	104	12.4
Overall, active and reserve														
All years (2020–2025)	1,916		194		463		532		0		4		3,135	
Jul. 2020–Jun. 2021	374		36		81		123		0		0		618	
Jul. 2021–Jun. 2022	384		35		89		88		0		0		604	
Jul. 2022–Jun. 2023	331		33		97		70		0		1		536	
Jul. 2023–Jun. 2024	329		38		100		96		0		2		571	
Jul. 2024–Jun. 2025	498		52		96		155		0		1		806	

Abbreviations: No., number; Jul., July; Jun., June.
[a] Active component rate per 100,000 person-years; reserve component rate per 100,000 persons.

FIGURE 1. Annual Incidence Rates of Service Members Affected by Any Cold Injury (1 per person per year), by Service, Active Component, U.S. Armed Forces, July 2020–June 2025

Abbreviations: P-yrs, person-years; Jul., July; Jun., June.

of cold injury were considered, male and non-Hispanic Black service members had higher rates of frostbite in comparison to other types of injury **(Tables 2a–2d)**. Among all cold weather injury cases reported within the active component during the 5-year period, the Marine Corps demonstrated the highest recruit cold weather injury rate (238.7 per 100,000 p-yrs). With

the exception of the Marine Corps, enlisted personnel had higher rates of cold weather injury compared to officers **(Tables 2a–2f)**.

Throughout the 5-year surveillance period, a total of 38 ACSMs (1.4% of total) were hospitalized. The Army (n=25) and Marine Corps (n=8) accounted for the majority (86.8%) of hospitalized cases (data not shown).

FIGURE 2. Annual Incidence Rates of Service Members Affected by Any Cold Injury (1 per person per year), by Service, Reserve Component, U.S. Armed Forces, July 2020–June 2025

Abbreviations: P-yrs, person-years; Jul., July; Jun., June.

Patterns and trends in service branches

Army

Within the Army active component, total cold injury cases and IRs increased from 356 cases (74.6 per 100,000) in 2020-2021 to 476 cases (109.0 per 100,000) in 2024-2025, representing a 46.1% increase during the surveillance period **(Table 2a, Figure 3a)**. Frostbite was the most common cold injury type overall, with rates increasing by 35.4% in 2024-2025 compared to the prior season. Army IRs increased most for unspecified injuries, with values nearly tripling over the surveillance period (from 11.9 to 33.7 per 100,000 p-yrs). Increases in immersion injuries and hypothermia were slight-to-moderate and less pronounced.

Navy

Among the Navy active component, total cases and IRs increased from 30 cases (8.8 per 100,000 p-yrs) in 2020-2021 to 49 (15.1 per 100,000 p-yrs) in 2024-2025, representing a 71.6% IR increase over the surveillance period **(Table 2b, Figure 3b)**. The overall increase for the Navy was primarily driven by comparatively sharp rises in immersion injuries and hypothermia cases in 2024-2025, compared to prior seasons. The highest IR for the Navy during the 5-year surveillance period was seen for frostbite cases, followed closely by hypothermia. Counts and IRs of unspecified injuries were relatively lower and fluctuated over the surveillance period.

Air Force

Within the Air Force active component, total cold injury cases and IRs increased from 71 cases (21.6 per 100,000 p-yrs) in 2020-2021 to 92 (29.9 per 100,000 p-yrs) in 2024-2025 (38.4% IR increase), with the apex (100 cases, 31.9 per 100,000 p-yrs) during the 2023-2024 cold season **(Table 2c, Figure 3c)**. The observed Air Force increase was largely attributable to rises in immersion injuries and hypothermia cases. Rates of unspecified injuries, the second most common cold injury following frostbite, fluctuated throughout the surveillance period.

TABLE 2a. Annual Incidence of Frostbite, Immersion Injury, and Hypothermia Among All Cold Injuries (1 type per person per season), U.S. Army Active Component, July 2020–June 2025

	Frostbite		Immersion Injury		Hypothermia		Unspecified[a]		All Cold Injuries	
	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]
Total	791	34.7	466	20.4	178	7.8	434	19.0	1,869	81.9
Sex										
Male	688	35.8	415	21.6	158	8.2	344	17.9	1,605	83.4
Female	103	28.7	51	14.2	20	5.6	90	25.1	264	73.7
Race and ethnicity										
White, non-Hispanic	283	23.9	221	18.6	77	6.5	149	12.6	730	61.6
Black, non-Hispanic	355	76.7	155	33.5	52	11.2	201	43.4	763	164.8
Hispanic	87	21.1	69	16.7	22	5.3	57	13.8	235	56.9
Other	66	29.8	21	9.5	27	12.2	27	12.2	141	63.7
Age, *y*										
<20	79	58.0	58	42.6	17	12.5	46	33.8	200	146.9
20–24	348	50.8	229	33.5	91	13.3	183	26.7	851	124.3
25–29	172	31.2	87	15.8	39	7.1	105	19.1	403	73.2
30–34	91	24.0	58	15.3	14	3.7	52	13.7	215	56.8
35–39	57	20.5	17	6.1	11	4.0	16	5.7	101	36.3
40–44	26	16.8	11	7.1	4	2.6	23	14.8	64	41.3
45+	18	18.2	6	6.1	2	2.0	9	9.1	35	35.3
Rank										
Recruit trainee	7	15.3	9	19.7	5	10.9	16	35.0	37	80.9
Enlisted	706	39.8	414	23.4	161	9.1	388	21.9	1,669	94.2
Officer	78	16.8	43	9.3	12	2.6	30	6.5	163	35.1
Military occupation										
Infantry, artillery, armor, combat engineering	354	62.7	234	41.4	94	16.7	135	23.9	817	144.7
Motor transport	33	48.3	10	14.6	3	4.4	23	33.7	69	101.0
Repair, engineering	102	23.1	63	14.3	23	5.2	67	15.2	255	57.8
Communications, intelligence	144	25.5	89	15.7	28	4.9	101	17.9	362	64.0
Health care	47	21.2	14	6.3	13	5.9	28	12.6	102	46.0
Other	111	26.4	56	13.3	17	4.0	80	19.0	264	62.7
Cold season (July–June)										
2020–2021	181	37.9	80	16.8	38	8.0	57	11.9	356	74.6
2021–2022	194	41.1	67	14.2	38	8.1	75	15.9	374	79.3
2022–2023	124	27.3	76	16.7	30	6.6	79	17.4	309	68.1
2023–2024	125	28.2	120	27.1	33	7.5	76	17.2	354	79.9
2024–2025	167	38.2	123	28.2	39	8.9	147	33.7	476	109.0

Abbreviations: No., number; *y*, years.
[a] Includes diagnoses for "other effects of reduced temperature."
[b] Rate per 100,000 person-years.

TABLE 2b. Annual Incidence of Frostbite, Immersion Injury and Hypothermia Among All Cold Injuries (1 type per person per season), U.S. Navy Active Component, July 2020–June 2025

	Frostbite		Immersion Injury		Hypothermia		Unspecified[a]		All Cold Injuries	
	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]
Total	59	3.6	38	2.3	58	3.5	25	1.5	180	10.8
Sex										
Male	49	3.7	36	2.7	49	3.7	17	1.3	151	11.5
Female	10	2.9	2	0.6	9	2.6	8	2.3	29	8.4
Race and ethnicity										
White, non-Hispanic	26	3.2	16	2.0	35	4.3	11	1.4	88	10.9
Black, non-Hispanic	12	4.5	8	3.0	8	3.0	4	1.5	32	11.9
Hispanic	12	4.0	9	3.0	8	2.7	4	1.3	33	11.1
Other	9	3.1	5	1.7	7	2.4	6	2.1	27	9.4
Age, _y_										
<20	7	7.2	9	9.3	8	8.3	6	6.2	30	31.0
20–24	16	3.3	14	2.9	28	5.7	9	1.8	67	13.7
25–29	15	3.8	6	1.5	17	4.3	3	0.8	41	10.3
30–34	6	2.1	2	0.7	4	1.4	2	0.7	14	4.9
35–39	8	3.7	2	0.9	1	0.5	3	1.4	14	6.5
40–44	4	3.5	3	2.6	0	0.0	1	0.9	8	7.0
45+	3	4.6	2	3.0	0	0.0	1	1.5	6	9.1
Rank										
Recruit trainee	2	7.7	1	3.9	0	0.0	0	0.0	3	11.6
Enlisted	45	3.3	33	2.4	54	4.0	23	1.7	155	11.4
Officer	12	4.3	4	1.4	4	1.4	2	0.7	22	7.9
Military occupation										
Infantry, artillery, armor, combat engineering	3	2.9	1	1.0	5	4.9	0	0.0	9	8.8
Motor transport	1	1.5	1	1.5	16	24.6	2	3.1	20	30.7
Repair, engineering	16	2.2	13	1.8	13	1.8	9	1.2	51	7.1
Communications, intelligence	5	1.9	8	3.0	3	1.1	3	1.1	19	7.2
Health care	17	10.0	0	0.0	4	2.4	5	3.0	26	15.3
Other	17	5.0	15	4.4	17	5.0	6	1.8	55	16.3
Cold season (July–June)										
2020–2021	9	2.6	3	0.9	13	3.8	5	1.5	30	8.8
2021–2022	12	3.5	8	2.3	13	3.8	1	0.3	34	10.0
2022–2023	8	2.4	7	2.1	12	3.6	4	1.2	31	9.3
2023–2024	20	6.2	5	1.5	5	1.5	6	1.8	36	11.1
2024–2025	10	3.1	15	4.6	15	4.6	9	2.8	49	15.1

Abbreviations: No., number; _y_, years.
[a]Includes diagnoses for "other effects of reduced temperature."
[b]Rate per 100,000 person-years.

TABLE 2c. Annual Incidence of Frostbite, Immersion Injury and Hypothermia Among All Cold Injuries (1 type per person per season), U.S. Air Force Active Component, July 2020–June 2025

	Frostbite		Immersion Injury		Hypothermia		Unspecified[a]		All Cold Injuries	
	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]
Total	243	15.3	34	2.1	47	3.0	123	7.7	447	28.1
Sex										
Male	214	17.1	31	2.5	36	2.9	94	7.5	375	30.0
Female	29	8.5	3	0.9	11	3.2	29	8.5	72	21.1
Race and ethnicity										
White, non-Hispanic	129	14.2	19	2.1	25	2.8	68	7.5	241	26.6
Black, non-Hispanic	48	21.6	5	2.3	5	2.3	21	9.5	79	35.6
Hispanic	38	14.0	5	1.8	9	3.3	20	7.4	72	26.6
Other	28	14.5	5	2.6	8	4.1	14	7.3	55	28.5
Age, y										
<20	17	25.1	3	4.4	4	5.9	12	17.7	36	53.1
20–24	117	26.4	16	3.6	17	3.8	49	11.1	199	44.9
25–29	45	11.3	6	1.5	13	3.3	22	5.5	86	21.6
30–34	30	10.0	1	0.3	9	3.0	20	6.7	60	20.0
35–39	22	9.3	7	3.0	1	0.4	13	5.5	43	18.2
40–44	8	7.6	0	0.0	3	2.9	6	5.7	17	16.2
45+	4	9.2	1	2.3	0	0.0	1	2.3	6	13.9
Rank										
Recruit trainee	0	0.0	0	0.0	1	4.8	2	9.7	3	14.5
Enlisted	221	17.5	27	2.1	35	2.8	109	8.6	392	31.0
Officer	22	7.2	7	2.3	11	3.6	12	3.9	52	16.9
Military occupation										
Infantry, artillery, armor, combat engineering	13	99.5	1	7.7	0	0.0	2	15.3	16	122.4
Motor transport	1	8.3	0	0.0	0	0.0	0	0.0	1	8.3
Repair, engineering	91	19.2	11	2.3	8	1.7	37	7.8	147	31.1
Communications, intelligence	40	11.8	4	1.2	6	1.8	19	5.6	69	20.4
Health care	9	6.2	2	1.4	3	2.1	13	8.9	27	18.5
Other	89	14.6	16	2.6	30	4.9	52	8.5	187	30.6
Cold season (July–June)										
2020–2021	46	14.0	1	0.3	9	2.7	15	4.6	71	21.6
2021–2022	53	16.3	5	1.5	6	1.8	30	9.2	94	29.0
2022–2023	48	15.1	7	2.2	7	2.2	28	8.8	90	28.3
2023–2024	47	15.0	10	3.2	13	4.2	30	9.6	100	31.9
2024–2025	49	15.9	11	3.6	12	3.9	20	6.5	92	29.9

Abbreviations: No., number; *y*, years.
[a] Includes diagnoses for "other effects of reduced temperature."
[b] Rate per 100,000 person-years.

TABLE 2d. Annual Incidence of Frostbite, Immersion Injury and Hypothermia Among All Cold Injuries (1 type per person per season), U.S. Marines Active Component, July 2020–June 2025

	Frostbite		Immersion Injury		Hypothermia		Unspecified[a]		All Cold Injuries	
	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]
Total	194	22.5	157	18.2	92	10.7	69	8.0	512	59.4
Sex										
Male	172	22.1	142	18.2	81	10.4	60	7.7	455	58.3
Female	22	27.1	15	18.5	11	13.5	9	11.1	57	70.2
Race and ethnicity										
White, non-Hispanic	88	18.6	93	19.7	43	9.1	28	5.9	252	53.4
Black, non-Hispanic	50	57.2	12	13.7	23	26.3	21	24.0	106	121.2
Hispanic	39	17.1	40	17.5	12	5.2	15	6.6	106	46.4
Other	17	23.2	12	16.4	14	19.1	5	6.8	48	65.5
Age, *y*										
<20	28	24.3	83	72.0	23	20.0	9	7.8	143	124.1
20–24	105	25.8	56	13.8	53	13.0	46	11.3	260	64.0
25–29	36	22.9	14	8.9	10	6.4	9	5.7	69	43.9
30–34	19	23.9	3	3.8	3	3.8	3	3.8	28	35.2
35–39	6	9.8	1	1.6	1	1.6	2	3.3	10	16.3
40–44	0	0.0	0	0.0	2	7.2	0	0.0	2	7.2
45+	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Rank										
Recruit trainee	2	6.3	61	191.6	12	37.7	1	3.1	76	238.7
Enlisted	134	18.6	89	12.3	75	10.4	57	7.9	355	49.2
Officer	58	53.9	7	6.5	5	4.6	11	10.2	81	75.3
Military occupation										
Infantry, artillery, armor, combat engineering	92	51.5	19	10.6	29	16.2	27	15.1	167	93.6
Motor transport	5	12.0	2	4.8	1	2.4	3	7.2	11	26.5
Repair, engineering	8	3.9	9	4.4	10	4.9	6	2.9	33	16.1
Communications, intelligence	26	12.5	11	5.3	9	4.3	16	7.7	62	29.8
Health care	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other	63	27.6	116	50.7	43	18.8	17	7.4	239	104.5
Cold season (July–June)										
2020–2021	53	29.4	25	13.9	21	11.7	15	8.3	114	63.3
2021–2022	33	18.7	23	13.0	18	10.2	11	6.2	85	48.1
2022–2023	22	12.9	28	16.4	11	6.4	7	4.1	68	39.8
2023–2024	23	13.7	35	20.8	18	10.7	12	7.1	88	52.4
2024–2025	63	38.0	46	27.8	24	14.5	24	14.5	157	94.8

Abbreviations: No., number; *y*, years.
[a]Includes diagnoses for "other effects of reduced temperature."
[b]Rate per 100,000 person-years.

TABLE 2e. Annual Incidence of Frostbite, Immersion Injury and Hypothermia Among All Cold Injuries (1 type per person per season), U.S. Coast Guard Active Component, July 2020–June 2025

	Frostbite		Immersion Injury		Hypothermia		Unspecified[a]		All Cold Injuries	
	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]
Total	7	3.5	0	0.0	6	3.0	10	5.0	23	11.6
Sex										
Male	7	4.2	0	0.0	5	3.0	10	6.0	22	13.2
Female	0	0.0	0	0.0	1	3.2	0	0.0	1	3.2
Race and ethnicity										
White, non-Hispanic	5	4.0	0	0.0	3	2.4	8	6.4	16	12.8
Black, non-Hispanic	0	0.0	0	0.0	3	29.4	0	0.0	3	29.4
Hispanic	1	3.1	0	0.0	0	0.0	1	3.1	2	6.3
Other	1	3.2	0	0.0	0	0.0	1	3.2	2	6.4
Age, y										
<20	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20–24	1	2.4	0	0.0	2	4.8	3	7.2	6	14.4
25–29	2	4.9	0	0.0	2	4.9	3	7.4	7	17.3
30–34	1	2.7	0	0.0	1	2.7	0	0.0	2	5.5
35–39	1	2.7	0	0.0	1	2.7	2	5.4	4	10.8
40–44	2	8.7	0	0.0	0	0.0	1	4.3	3	13.0
45+	0	0.0	0	0.0	0	0.0	1	8.4	1	8.4
Rank										
Recruit trainee	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Enlisted	6	3.9	0	0.0	6	3.9	7	4.6	19	12.5
Officer	1	2.3	0	0.0	0	0.0	3	6.8	4	9.0
Military occupation										
Infantry, artillery, armor, combat engineering	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Motor transport	1	3.2	0	0.0	2	6.3	2	6.3	5	15.8
Repair, engineering	2	3.3	0	0.0	1	1.6	2	3.3	5	8.1
Communications, intelligence	1	3.3	0	0.0	2	6.7	0	0.0	3	10.0
Health care	0	0.0	0	0.0	1	26.6	0	0.0	1	26.6
Other	3	4.2	0	0.0	0	0.0	6	8.4	9	12.6
Cold season (July–June)										
2020–2021	1	2.5	0	0.0	1	2.5	1	2.5	3	7.4
2021–2022	1	2.5	0	0.0	2	5.0	4	9.9	7	17.4
2022–2023	2	5.1	0	0.0	1	2.6	1	2.6	4	10.3
2023–2024	2	5.1	0	0.0	2	5.1	1	2.6	5	12.8
2024–2025	1	2.5	0	0.0	0	0.0	3	7.5	4	10.0

Abbreviations: No., number; y, years.
[a] Includes diagnoses for "other effects of reduced temperature."
[b] Rate per 100,000 person-years.

TABLE 2f. Annual Incidence of Frostbite, Immersion Injury and Hypothermia Among All Cold Injuries (1 type per person per season), U.S. Space Force Active Component, July 2020–June 2025
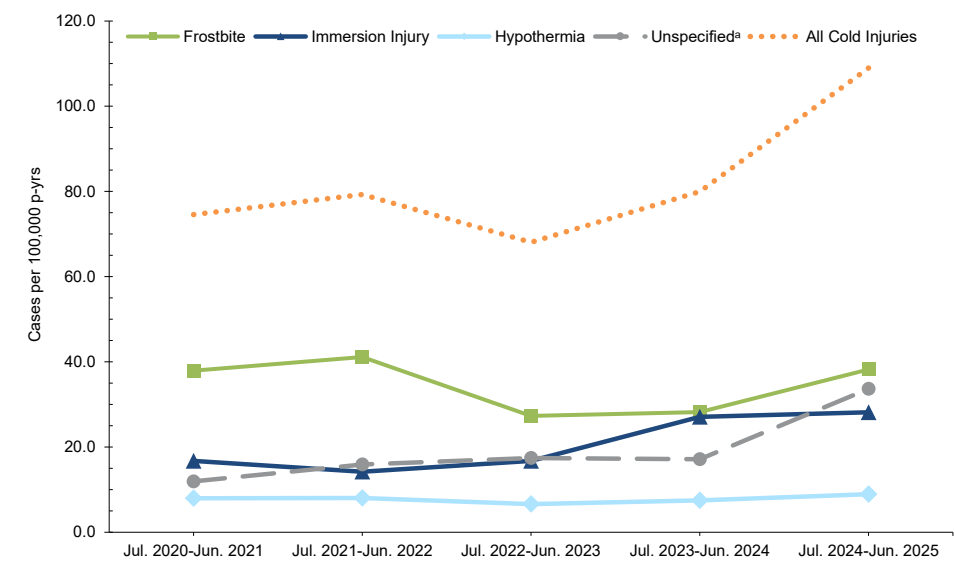
	Frostbite		Immersion Injury		Hypothermia		Unspecified[a]		All Cold Injuries	
	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]
Total	2	8.6	0	0.0	0	0.0	3	12.9	5	21.4
Sex										
Male	2	10.6	0	0.0	0	0.0	3	15.9	5	26.4
Female	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Race and ethnicity										
White, non-Hispanic	1	6.9	0	0.0	0	0.0	0	0.0	1	6.9
Black, non-Hispanic	0	0.0	0	0.0	0	0.0	2	112.1	2	112.1
Hispanic	1	29.0	0	0.0	0	0.0	1	29.0	2	57.9
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Age, _y_										
<20	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20–24	2	46.1	0	0.0	0	0.0	1	23.1	3	69.2
25–29	0	0.0	0	0.0	0	0.0	1	17.7	1	17.7
30–34	0	0.0	0	0.0	0	0.0	1	20.8	1	20.8
35–39	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
40–44	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
45+	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Rank										
Recruit trainee	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Enlisted	2	16.8	0	0.0	0	0.0	2	16.8	4	33.6
Officer	0	0.0	0	0.0	0	0.0	1	8.7	1	8.7
Military occupation										
Infantry, artillery, armor, combat engineering	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Motor transport	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Repair, engineering	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Communications, intelligence	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Health care	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other	2	9.5	0	0.0	0	0.0	3	14.2	5	23.7
Cold season (July–June)										
2020–2021	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2021–2022	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2022–2023	1	20.6	0	0.0	0	0.0	0	0.0	1	20.6
2023–2024	1	11.1	0	0.0	0	0.0	2	22.2	3	33.3
2024–2025	0	0.0	0	0.0	0	0.0	1	10.6	1	10.6

Abbreviations: No., number; _y_, years.
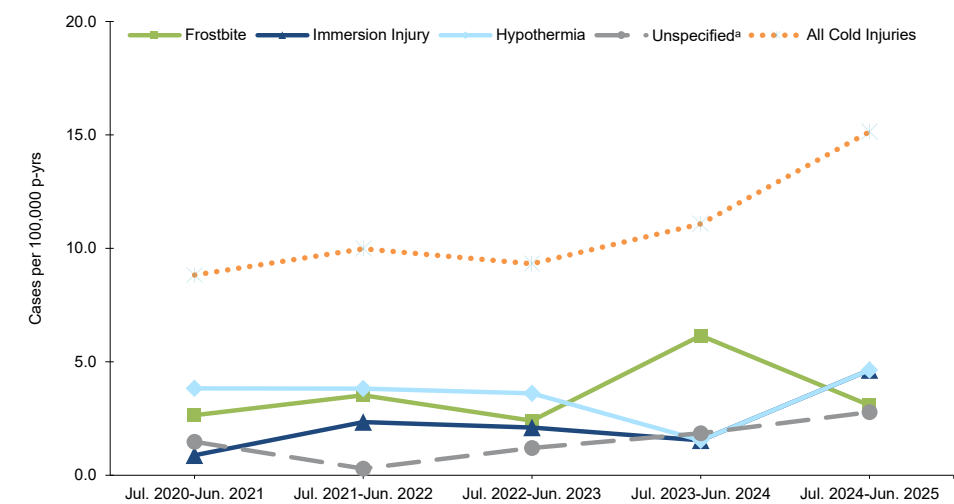[a]Includes diagnoses for "other effects of reduced temperature."
[b]Rate per 100,000 person-years.

FIGURE 3a. Annual Incidence Rates by Cold Injury Type Among Army Service Members, Active Component, U.S. Armed Forces, July 2020–June 2025

Abbreviations: P-yrs, person-years; Jul., July; Jun., June.
[a] Includes diagnoses for "other effects of reduced temperature."

FIGURE 3b. Annual Incidence Rates by Cold Injury Type Among Navy Service Members, Active Component, U.S. Armed Forces, July 2020–June 2025

Abbreviations: P-yrs, person-years; Jul., July; Jun., June.
[a] Includes diagnoses for "other effects of reduced temperature."

Marine Corps

Among the Marine Corps active component, total cold injury cases and IRs increased from 114 cases (63.3 per 100,000 p-yrs) in 2020-2021 to 157 cases (94.8 per 100,000 p-yrs) in 2024-2025, representing a 49.8% increase during the surveillance period **(Table 2d, Figure 3d).** Frostbite was the dominant cold injury, in both counts and IRs. Frostbite IRs in the Marine Corps nearly tripled during the most recent cold season compared to the prior season (38.0 per 100,000 p-yrs in 2024-2025 vs. 13.7 in 2023-2024). Immersion injuries and hypothermia also showed notable increases

over time within the Marine Corps, while unspecified injuries, although smaller in magnitude, also rose sharply in 2024-2025 cold season.

Deployment-related cold weather injuries

During the 5-year surveillance period, a total of 82 cold weather injuries were diagnosed among service members deployed outside the U.S. (data not shown), of which 35 (42.7%) were frostbite, 33 (40.2%) were immersion injuries, 12 (14.6%) were hypothermia, and 2 (2.4%) were unspecified. Among the 28 cases of the 82 total deployment-associated cold weather injuries diagnosed during the 2024-2025 cold season, 17 were frostbite, 7 were immersion injuries, and 4 were hypothermia cases.
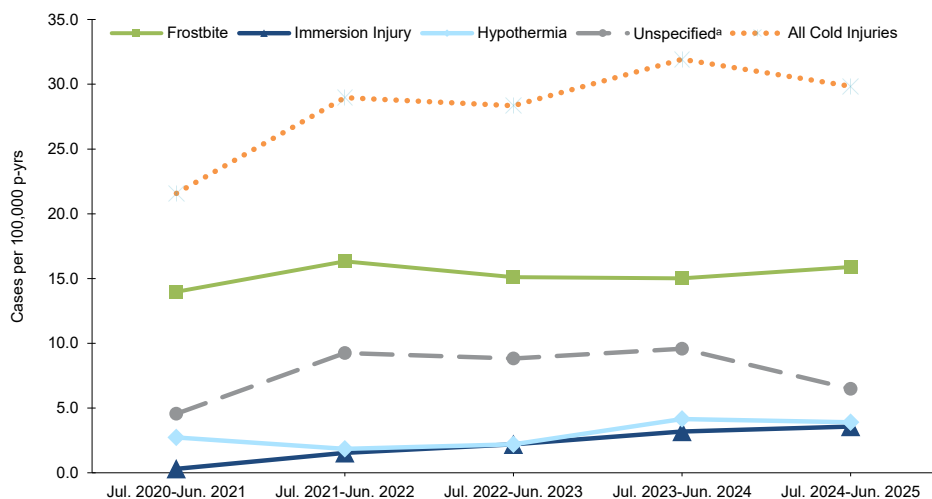
Geographic locations of cold weather injuries

During the 5-year surveillance period, 23 military locations reported at least 25 incidents of cold weather injury (1 per person per cold season) among ACSMs. **Figure 4** charts the 2024-2025 seasonal numbers of cold weather injuries (1 per person per year) for each of those 23 locations, in addition to the median case numbers for the previous 4 cold seasons. The highest 5-year counts of incident cold weather injuries for seasons 2020 through 2025 were recorded at Fort Wainwright, Arkansas (n=335), Joint Base Elmendorf-Richardson, Arkansas (n=209), Marine Corps Base Camp Lejeune, North Carolina (n=115), Fort Carson, Colorado (n=104), and U.S. Army Garrison Bavaria, Germany (n=85) (data not shown).
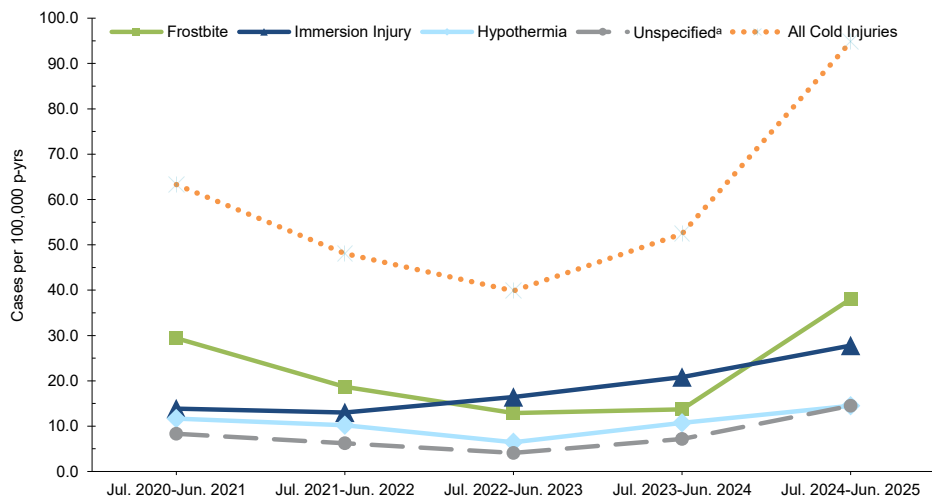
Discussion

Overall rates peaked in 2024-2025 for any cold weather injury among the U.S. active and reserve components, increasing by 41.8% and 45.8%, respectively, from the 2023-2024 season. During the 5-year surveillance period, the active components of all services experienced increased IRs for cold injuries. During the 2024-2025 cold season, the Army, Navy, and Marine Corps active components experienced their highest rates of any cold weather injury for the entire 5-year surveillance period.

FIGURE 3c. Annual Incidence Rates by Cold Injury Type Among Air Force Service Members, Active Component, U.S. Armed Forces, July 2020–June 2025

Abbreviations: P-yrs, person-years; Jul., July; Jun., June.
[a] Includes diagnoses for "other effects of reduced temperature."

FIGURE 3d. Annual Incidence Rates by Cold Injury Type Among Marine Corps Service Members, Active Component, U.S. Armed Forces, July 2020–June 2025

Abbreviations: P-yrs, person-years; Jul., July; Jun., June.
[a] Includes diagnoses for "other effects of reduced temperature."

The Coast Guard and Space Force average less than 5 cases per year among their ACSMs, thus, small changes in the numbers of cases annually will result in abnormally large fluctuations in the injury rate. Frostbite was the most common cold weather injury in the Army, Ma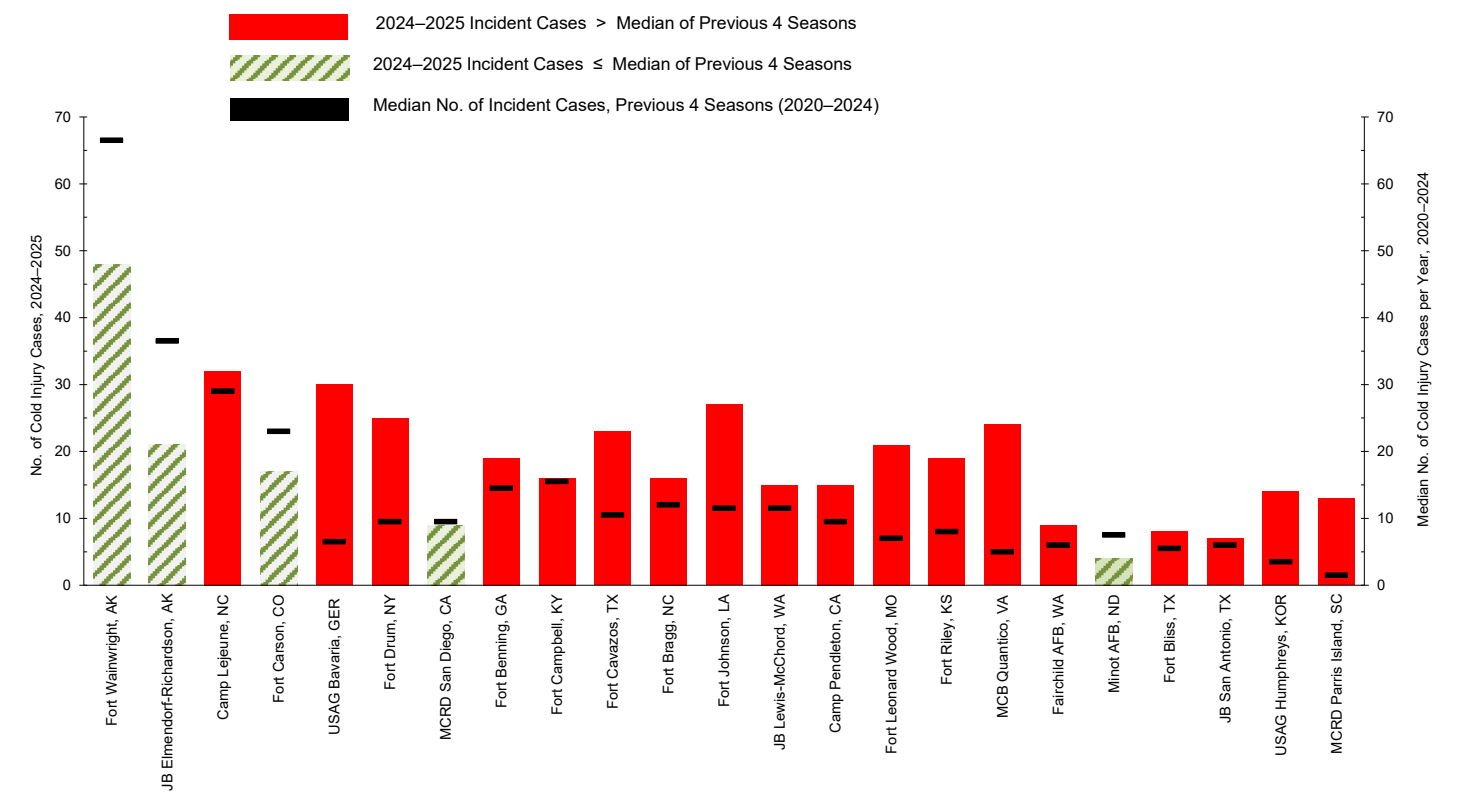rine Corps, and Navy, while the Marine Corps saw the largest surge in frostbite rates. In contrast, immersion injuries and hypothermia were the main causes of increases in the Navy and Air Force. Rates of unspecified cold injuries also increased substantially within the Army and Marine Corps, but remained lower and more variable in the Navy and Air Force.

The simultaneous increase in both specific and unspecified case rates suggests true increases in cold weather injury occurrence in the 2024-2025 cold season. The increase in IRs could indicate heightened exposure to environmental risk factors. The long-term complications of non-freezing injuries are similar to, and equally debilitating as, those produced by frostbite: hypersensitivity to cold, chronic pain, and severe pain induced by walking.[17,18,20]

Similar to previous *MSMR* reports, the highest cold weather injury rates were observed among service members who were male, those in younger age groups, and non-Hispanic Black individuals.[8,24] Increasing rates of cold weather injury have also been noted among service members in the United Kingdom (U.K.) military with similar demographic characteristics.[21,26,27] Differences in physiological responses to cold stress have been observed between various racial and ethnic groups, with individuals of African descent demonstrating greater vasoconstriction responses compared to individuals of Asian or Caucasian descent.[10,15,28] Signs and symptoms of cold weather injury (e.g., skin redness, blotchy skin) may initially be more difficult to see on service members with skin of darker color.[29,30] Service members, leadership, and medical personnel should be educated on the early signs and symptoms of cold weather injuries for a wide range of skin types.

When examining the demographic groups with increased rates within the services, it should be noted that there were differences in the most frequently observed cold weather injury types. Younger marines had higher rates of immersion injuries, while younger soldiers had higher rates of frostbite. Such differences could indicate different situational risk factors, such as specific training activities, occupational tasks, and geographic regions, for cold weather injury among the service branches. A study of U.K. service personnel noted that the most common situational risk factors for non-freezing peripheral injury were standing guard, as well as wet socks and boots.[21] Unit leaders must be able to assess environmental, situational, and individual risk factors of their training and operational environments and understand how those

FIGURE 4. Annual Frequency (cold season 2024–2025) and Median Numbers (cold seasons 2020–2024) of Cold Injuries at Locations with at Least 25 Cold Injuries During the Surveillance Period, Active Component, U.S. Armed Forces, July 2020–June 2025

Abbreviations: No., number; >, greater than; ≤, less than or equal to; JB, Joint Base; USAG, U.S. Army Garrison; GER, Germany; AFB, Air Force Base; KOR, South Korea; MCB, Marine Corps Base; MCRD, Marine Corps Recruit Depot.

factors increase risk of cold weather injuries for service members in their charge.

This analysis of cold weather injuries was unable to distinguish between injuries sustained during official military duties (e.g., training or operations) and those associated with unrelated or personal activities. This report expanded the scope of cold injuries beyond specified conditions (e.g., frostbite, immersion injury, hypothermia) to include "other specified and unspecified effects of reduced temperature." That change contributed to an increased overall case count compared to last year's report. The increase in cold injury IRs was observed uniformly for all services and specific injury types, suggesting a genuine rise in cold injury incidence

rather than solely an artifact of broadened inclusion criteria.

Cold weather injuries can be prevented by ensuring proper clothing, including layers that can be added or removed according to environmental conditions and specific physical activities, along with footwear that is non-constrictive, dry, and regularly changed if wet.[9,10,22] Proper hydration and nutrition, avoidance of long periods of sedentary or immobile positions, and planning for appropriate shelter and opportunities for re-warming are also important.

Military training or mission requirements in cold and wet weather conditions can preclude immediate warm or dry shelter, ability to change wet or damp clothing, or even healthy physical activity.[2,3,11]

To prepare for all circumstances posing a threat for cold weather injury, service members should be cognizant of, and able to identify, signs of cold weather injury in addition to environmental, individual, and situational risk factors. Service members should also be aware of protective measures for themselves and their fellow service members, whether during training, operations, combat, or recreational activities in wet or freezing conditions.

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Trends in the Prevalence of Obesity Among U.S. Active Component Service Members and Civilians, 2013–2023

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Trends in obesity among U.S. active component service members (ACSMs) and civilians are relevant to military recruitment and retention, as excess body weight is a common disqualification for military service. This study utilized measured height and weight data from the Military Health System Data Repository for ACSMs (cumulative n=12,262,745) and the National Health and Nutrition Examination Survey for civilians aged 17-62 years (cumulative n=19,334). Accounting for the design of each data source, the prevalence of obesity (body mass index ≥ 30 kg/m2) and body mass index (BMI) distributions were calculated. Joinpoint software and polynomial regression were used to assess trends over time. From 2013 through 2023, obesity prevalence increased among ACSMs, from 14.7% to 24.2%. Although obesity rates among civilians were consistently higher, this gap narrowed over the course of the decade. The same pattern was seen in young men (ages 17-24 years). Civilians have greater proportions than ACSMs within the highest classes of BMI. Persistently high obesity prevalence among ACSMs overall and in young men, particularly since 2019, may affect military recruitment, retention, and ultimately, strength and readiness.

What are the new findings?

From 2013 through 2023, the prevalence of obesity increased significantly among U.S. active component service members, 2019 to 2023 in particular, while prevalence among civilians remained consistently high. The pattern of obesity is especially relevant in young men, the largest source of potential and newly accessed military recruits.

What is the impact on readiness and force health protection?

The persistently high prevalence of obesity among civilians and growing prevalence of obesity among active component service members in general, and among young men in particular, may affect military recruitment, retention, and ultimately, strength and readiness.

Methods

Data sources

The U.S. Department of Defense (DOD) experienced agency-wide recruitment shortfalls in 2022 and 2023.[1] Excess body weight is a common disqualification for recruitment and retention of military members.[2] Some authors have suggested that the high prevalence of weight-ineligible young people has compromised national security by reducing recruitment.[3] Obesity also places a substantial burden on the Military Health System (MHS).[4]

Reports have found that the prevalence of obesity in U.S. military members increased slightly during the COVID-19 pandemic,[5] but prevalence of obesity in the overall U.S. civilian adult population remained level.[6] Examining whether trends in obesity prevalence are similar, when sex and age standardized, for the active component military and civilian populations, as well as for young men from both populations, is ultimately relevant to U.S. military strength and readiness.

The objective of this study was to examine trends over the past decade in the prevalence of obesity among U.S. active component service members (ACSMs) and civilians ages 17-62 years, both overall and by sex, to understand whether trends in these populations were similar or different. This study highlights trends in young men ages 17-24 years among both populations, to examine differences in the prevalence of obesity between potential civilian and newly accessed military recruits. Finally, this study visualizes the cross-sectional distribution of body mass index (BMI) at the end of the study period, in both men and women, to compare the age-standardized distribution of BMI categories between military and civilian populations.

For the ACSM population, this study employed a census of medical records with measured height and weight data from January 1, 2013 through December 31, 2023 from the MHS Data Repository (MDR). An encounter record in MDR can be initiated by individuals seeking care or by a healthy individuals completing an annual physical examination requirement. For each calendar year (e.g., 2013, 2014, etc.), the first encounter that included a non-pregnant height and weight measurement for an individual was abstracted from the MDR and linked to demographic data from the Defense Medical Surveillance System (DMSS).[7] The same individual could be represented in multiple years of this study period, but never more than once every given year. Records with missing racial or ethnic group or sex data were excluded (n=271,679, 2.2%).

For civilians, this study utilized measured height and weight as well as demographic data from 4 survey cycles of the National Health and Nutrition Examination Survey (NHANES): 2013-2014, 2015-2016, 2017-March 2020, and August 2021-August 2023. NHANES is a cross-sectional, interview- and examination-based survey representative of the U.S. civilian, non-institutional population, approved by the National Center for Health Statistics (NCHS) Ethics Review Board.[8] Non-pregnant NHANES participants ages 17-62 years (i.e., ACSM age range) with measured height and weight were included in this study.

Body mass index categories

BMI was calculated as weight in kilograms divided by height in meters squared, rounded to 1 decimal place. BMI categories were defined as underweight (BMI <18.5), normal weight (BMI 18.5<25.0), overweight (BMI 25.0<30.0), and obesity (BMI ≥30.0). Obesity was further classified as class 1 obesity (BMI 30.0<35.0), class 2 obesity (BMI 35.0<40.0), and class 3 obesity (BMI ≥40.0).[9] Records from ACSMs with BMI less than or equal to 12 or greater than or equal to 50 were considered implausible and excluded from this study (n=6,562, 0.1%).

Statistical analysis

Analyses were conducted using R version 4.4.0 including survey package version 4.4-2 (R Foundation), SAS-Enterprise Guide version 8.3 (SAS Institute, Inc.), and Joinpoint Regression Program version 5.4.0 (National Cancer Institute). A 2-sided p-value of less than .05 was used to determine statistical significance.

Prevalence of obesity

The crude prevalence of obesity among ACSMs was calculated both overall and by sex, age, racial and ethnic group, and branch of military service, for each year, 2013–2023. Because ACSM data are a census of the population, confidence intervals (CIs) were not calculated. Overall, and for every demographic group, the

percentage point change and relative percentage change over the study period were calculated using the prevalence of obesity in 2013 and 2023.

For civilians, examination survey weights were used to estimate the crude prevalence of obesity overall and by sex, age, and racial and ethnic group, for each survey cycle; Korn and Graubard CIs were calculated, and estimates were evaluated for reliability according to the NCHS Data Presentation Standards for Proportions.[10] Percentage point change and relative percentage change were not calculated for civilians due to the unequal lengths and spacing of NHANES survey cycles.

Overall prevalence of obesity for ACSMs and civilians were also standardized to the sex and age structure of the ACSM study population in 2023 to account for demographic composition differences between and within these populations over time.

Trends in obesity

Statistical testing for trends in obesity over time were conducted by sex, age, racial and ethnic group, and branch of military service to provide subgroup information, which is relevant for military retention and recruitment, particularly for young men (ages 17-24 years).

For ACSMs, Joinpoint software (using default settings and weighted BIC model) was used to identify inflection points in obesity prevalence over time, and to test whether apparent changes in slope at inflection points were significant. The difference in slope of trends before and after significant inflection points, measured in annual percentage point change, were reported.

For civilians, quadratic and linear trends in obesity prevalence over time were examined in regression models with the survey cycle modeled as an orthogonal polynomial, accounting for the unequal spacings and lengths of NHANES survey cycles, using the NCHS Guidelines for Analysis of Trends.[11] Because only 4 NHANES survey cycles were included in this study, Joinpoint software was not used to analyze civilian trends.

Distributions of body mass index

The prevalence of each BMI-defined weight category was calculated and used to visualize the 2023 distributions of BMI by sex among ACSMs in 2023 and the civilian population from August 2021 through August 2023, standardized to the age structure of the ACSM study population in 2023.

Results

Demographics of active component service members and civilians

This study included a cumulative total of 12,262,745 ACSM records of measured height and weight from the MHS Data Repository from 2013 through 2023 (Table 1). The demographic distribution of this study's ACSM population is similar to active duty members in the DOD 2023 Demographics Report.[12]

This study included a cumulative total of 19,334 civilian participants from 4 survey cycles of NHANES (Table 1). NHANES estimates are representative of the U.S. non-institutional, civilian population.[13]

The population of ACSMs is younger (78.1% ages 17-34 years), with a higher percentage of men (82.9%) than the U.S. civilian population (39.3% ages 17-34 years, 50.0% men).

Obesity trends overall

Sex- and age-standardized prevalence of obesity in ACSMs increased from 14.7% in 2013 to 18.7% in 2020; from the joinpoint at 2020, obesity prevalence rose more rapidly, to 24.2% in 2023 (difference in slope before and after joinpoint 1.33, $p<0.001$) (Table 2). The standardized estimated prevalence of obesity among civilians, which was consistently higher than ACSMs throughout this period, increased from 31.3% (95% CI 29.2, 33.6) in the NHANES 2013-2014 survey cycle to 37.8% (95% CI 34.7, 40.9) 2017–March 2020 and then declined to 33.0% (95% CI 30.1, 36.0) August 2021–August 2023 (quadratic trend $p=0.04$, linear trend $p=0.49$) (Table 3).

TABLE 1. Demographics, U.S. Active Component Service Members and Civilians, Ages 17–62 Years, 2013–2023[a]

	Service Members[b]		Civilians[c]	
	No.	Proportion (%)	No.	Weighted Proportion (%)
Total	12,262,745	100	19,334	100
Sex				
Men	10,171,801	82.9	9,265	50.0
Women	2,090,944	17.1	10,069	50.0
Age, y				
17–24	4,950,752	40.4	3,673	16.9
25–34	4,624,351	37.7	3,906	22.4
35–44	2,193,378	17.9	3,994	21.3
45–62	494,264	4.0	7,761	39.4
Sex, age group, y				
Men, 17–24	4,014,865	32.7	1,881	8.8
Men, 25–34	3,858,480	31.5	1,877	11.5
Men, 35–44	1,876,631	15.3	1,816	10.4
Men, 45–62	421,825	3.4	3,691	19.2
Women, 17–24	935,887	7.6	1,792	8.1
Women, 25–34	765,871	6.2	2,029	10.9
Women, 35–44	316,747	2.6	2,178	10.8
Women, 45–62	72,439	0.6	4,070	20.2
Race and ethnicity				
Hispanic	1,942,831	15.8	4,898	18.2
Black, non-Hispanic	2,064,534	16.8	4,192	12.0
White, non-Hispanic	7,038,493	57.4	6,998	59.1
Other	1,216,887	9.9	3,246	10.7
Service branch				
Army	4,792,228	39.1		
Navy	2,693,611	22.0		
Air Force	2,975,221	24.3		
Marine Corps	1,544,593	12.6		
Coast Guard	130,272	1.1		
Other[d]	126,820	1.0		

Abbreviations: No., number (unweighted); y, years.
[a] Data sources: Defense Medical Surveillance System (DMSS), 2013-2023; Military Health System Data Repository (MDR), 2013-2023; National Health and Nutrition Examination Survey (NHANES), 2013-2014 to Aug. 2021-Aug. 2023.
[b] Service member subgroup sample size ranges: men, 755,426–1,034,507; women, 181,172–201,182; ages 17-24 y, 347,540–501,015; 25-34 y, 362,316–481,673; 35-44 y, 177,713–222,560; 45-62 y, 38,787–49,178; Hispanic, 157,466–196,642; non-Hispanic Black, 160,731–204,752; non-Hispanic White, 495,575–756,582; other, 101,004–119,304; Army, 332,730–510,326; Navy, 180,424–268,924; Air Force, 227,918–312,870; Marine Corps, 100,761–162,609; Coast Guard, 6,831–25,797; other service, 856–48,645.
[c] Civilian subgroup sample size ranges: men, 4,892–7,721; women, 5,079–7,839; ages 17–24 y, 871–1,400; 25–34 y, 971–1,433; 35–44 y, 951–1,414; 45–62 y, 1,735–2,916; Hispanic, 2,490–3,534; Non-Hispanic Black, 1,597–4,098; Non-Hispanic White, 3,066–6,217; other, 1,544–2,657.
[d] Includes Space Force, Navy afloat, National Oceanic and Atmospheric Administration, Public Health Service, Office of Secretary of Defense, other/unknown.

Trends in male and female obesity

From 2013 through 2023, crude prevalence of obesity, in both men and women, was lower among ACSMs than civilians, although the difference narrowed over time **(Figure 1)**.

Prevalence of obesity in male ACSMs increased from 15.7% in 2013 to 18.1% in 2019; from the joinpoint at 2019 obesity increased more rapidly, to 25.3% in 2023 (difference in slope before and after joinpoint 1.42, $p<0.001$). Obesity increased in female ACSMs from 8.3% in 2013 to 12.0% in 2019; from the joinpoint at 2019 obesity increased more rapidly, to 19.6% in 2023 (difference in slope before and after joinpoint 1.38, $p<0.001$).

Estimated prevalence of obesity in male civilians increased from 33.5% (95% CI 30.1, 37.0) in 2013-2014 to 41.4% (95% CI 36.7, 46.3) during 2017–March 2020, then declined to 38.6% (95% CI 34.7, 42.7) during August 2021–August 2023 (quadratic trend $p=0.04$, linear trend $p=0.05$). In female civilians, obesity remained consistent from 2013-2014 (40.9%; 95% CI 37.7, 44.1) to August 2021–August 2023 (41.1%; 95% CI 35.7, 46.6) (quadratic trend $p=0.67$, linear trend $p=0.85$).

Trends in young male obesity

Among young male (ages 17-24 years) ACSMs, crude obesity prevalence increased from 7.9% in 2013 to 9.9% in 2019; from the joinpoint at 2019, obesity increased more rapidly to 15.1% in 2023 (difference in slope before and after joinpoint 0.98, $p<0.001$) **(Figure 2)**.

Among young male civilians, estimated prevalence of obesity did not change significantly, from 21.1% (95% CI 15.3, 28.0) in 2013-2014 to 24.5% (95% CI 19.2, 36.0) during August 2021–August 2023 (quadratic trend $p=0.08$, linear trend $p=0.35$).

Distributions of body mass index

Age-standardized distributions of BMI according to sex, among ACSMs in 2023 and civilians during August 2021–August 2023, were visibly different **(Figure 3)**. Male ACSMs demonstrated lower proportions in the highest classes of obesity (class 2 obesity 4.0%, class 3 obesity 0.7%) in comparison to the civilian male population (class 2 obesity 8.2%; 95% CI 6.5, 10.2 and class 3 obesity 5.7%; 95% CI 4.5, 7.1). This pattern was even more striking in women: Female ACSMs demonstrated even smaller proportions in the highest classes of obesity (class 2 obesity 3.6%, class 3 obesity 0.8%) when compared to women in the civilian population (class 2 obesity 9.0%; 95% CI 6.9, 11.5 and class 3 obesity 11.3%; 95% CI 9.7, 13.1).

TABLE 2. Trends in Prevalence of Obesity[a], U.S. Active Component Service Members, 2013–2023[b]

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Percentage Point Change	Relative % Change
Total, n	1,232,019	1,216,338	1,178,812	1,165,274	1,170,057	1,169,221	1,174,685	1,016,301	1,023,155	980,285	936,598		
	%	%	%	%	%	%	%	%	%	%	%		
Standardized[c]	14.7	14.7	15.2	16.1	16.7	17.3	17.8	18.7[c]	20.9	22.6	24.2	9.5	64.9
Crude	14.5	14.6	15.0	15.8	16.2	16.6	17.0[d]	18.0	20.5	22.4	24.2	9.6	66.2
Sex													
Men	15.7	15.7	16.2	16.9	17.3	17.7	18.1[d]	19.1	21.6	23.5	25.3	9.5	60.6
Women	8.3	8.3	8.8	9.6	10.4	11.1	12.0[d]	13.1	15.5	17.7	19.6	11.3	135.8
Age, y													
17–24	7.2	7.2	7.6	8.2	8.5	8.9	9.3[d]	10.1	11.9	13.3	14.6	7.4	102.3
25–34	16.3	16.3	17.0	17.9	18.5	19.1	19.6	20.5[d]	23.1	25.0	26.8	10.5	64.5
35–44	24.8	24.9	25.5	26.6	27.6	28.1	28.6	29.7[d]	31.8	33.5	35.0	10.2	41.2
45–62	22.6	22.7	23.7	24.7	26.4	27.0	27.1	28.0[d]	29.8	31.7	33.0	10.4	46.0
Sex, age group													
Men, 17–24	7.9	7.8	8.3	8.8	9.1	9.6	9.9[d]	10.7	12.6	13.9	15.1	7.3	92.7
Men, 25–34	17.5	17.5	18.2	19.1	19.6	20.2	20.7	21.5[d]	24.2	26.1	27.8	10.3	58.9
Men, 35–44	26.3	26.4	27.0	28.1	28.9	29.4	29.9	31.0[d]	33.0	34.7	36.2	9.9	37.7
Men, 45–62	24.0	24.1	25.1	26.1	27.9	28.5	28.5	29.4[d]	31.2	33.1	34.4	10.4	43.3
Women, 17–24	4.2	4.2	4.4	5.0	5.5	6.0	6.9[d]	7.7	9.4	10.9	12.5	8.3	195.2
Women, 25–34	9.7	9.7	10.3	11.4	12.3	13.3	14.4[d]	15.6	18.3	20.5	22.6	12.9	132.3
Women, 35–44	15.2	15.2	16.4	17.5	19.5	20.5	21.2[d]	22.7	25.2	27.5	29.0	13.8	90.7
Women, 45–62	14.2	14.7	15.3	15.7	17.1	17.8	18.5[d]	20.3	21.5	23.5	25.1	10.9	77.0
Race and ethnicity													
Hispanic	15.8	15.5	16.1	17.0	17.4	17.8	18.3[d]	19.5	22.0	24.2	26.0	10.2	64.5
Black, non-Hispanic	21.1	20.7	21.1	21.8	22.1	22.4	22.6[d]	23.4	26.0	27.6	29.0	7.9	37.6
White, non-Hispanic	12.8	12.9	13.3	13.9	14.3	14.6	15.1	15.9[d]	18.3	20.4	22.1	9.3	72.5
Other	12.5	12.8	13.5	14.5	15.2	16.4	16.8[d]	18.0	20.1	21.8	23.4	10.8	86.5
Service branch[e]													
Army	16.9	16.4	16.9	17.1	16.8	16.5	16.4	17.4[d]	19.8	22.2	24.2	7.3	43.3
Navy	15.8	16.3	17.0[d]	18.9	20.3	21.3	22.8	23.7	25.8	27.3	29.0	13.2	83.6
Air Force	13.4	13.9	14.5	15.8	16.6	17.1	17.3	18.5[d]	21.5	23.2	24.7	11.4	85.0
Marine Corps	6.2	6.1	6.3	6.4	6.7	7.3[d]	7.9	8.8	10.1	11.5	12.6	6.5	104.8
Coast Guard	17.1	16.6	17.0[d]	17.7	18.3	18.8	19.8	21.8	22.4	21.1	22.5	5.4	31.8

Abbreviations: *n*, number (unweighted); *y*, years.
[a] Defined as body mass index greater than or equal to 30.
[b] Data sources Defense Medical Surveillance System (DMSS) and Military Health System Data Repository (MDR), 2013-2023.
[c] Standardized to sex and age composition of study's active component service member population in 2023; all other groups show crude values only.
[d] Location of inflection point identified by Joinpoint Regression Program.
[e] Other service branches (n=126,820) including Space Force, Navy afloat, National Oceanic and Atmospheric Administration, Public Health Service, Office of Secretary of Defense, other/unknown included in prevalence calculations for this table but not reported separately.

Discussion

This study included newer data, collected after the COVID-19 pandemic, to describe trends in sex- and age-standardized prevalence of obesity over the past decade among ACSMs and civilians aged 17-62 years, as well as young men.

From 2013 through 2023, the prevalence of obesity in male and female ACSMs increased, while standardized estimated prevalence among civilians ages 17-62 years increased slightly but ended similar to the start of the decade. The difference in obesity prevalence between the populations apparently narrowed. Interestingly, a majority of the increase in ACSM obesity prevalence occurred recently, from 2019 until 2023. The pattern of increasing ACSM obesity prevalence and consistently high prevalence in civilians was also present in young men (ages 17-24 years), the largest source of potential military recruits as well as newly

accessed military members. More than 1 in 5 young male civilians had obesity throughout the 10-year study period.

The growing prevalence of obesity among ACSMs overall and in young men, particularly since 2019, could lead to poorer retention of newly accessed recruits and an increased burden on the MHS. The persistently high obesity prevalence among civilians presumably reduces the pool of height- and weight-eligible potential military recruits, although

TABLE 3. Trends in Prevalence of Obesity[a], U.S. Civilians, 2013–2023[b]

NHANES Survey Cycle	2013–2014			2015–2016			2017–March 2020			August 2021–August 2023		
Total, *n*	4,474			4,296			6,495			4,069		
	Weighted Prevalence (%)	95% CI Lower Limit	95% CI Upper Limit	Weighted Prevalence (%)	95% CI Lower Limit	95% CI Upper Limit	Weighted Prevalence (%)	95% CI Lower Limit	95% CI Upper Limit	Weighted Prevalence (%)	95% CI Lower Limit	95% CI Upper Limit
Total												
Standardized[c,d]	31.3	29.2	33.6	33.7	30.5	36.9	37.8	34.7	40.9	33.0	30.1	36.0
Crude	37.2	34.5	40.0	38.6	34.9	42.4	40.9	38.1	43.8	39.8	35.6	44.2
Sex												
Men[d]	33.5	30.1	37.0	37.4	32.3	42.7	41.4	36.7	46.3	38.6	34.7	42.7
Women	40.9	37.7	44.1	39.8	36.0	43.7	40.4	37.4	43.4	41.1	35.7	46.6
Age, *y*												
17–24	23.8	19.2	28.9	26.9	22.7	31.4	29.4	24.0	35.1	24.0	19.6	28.7
25–34	35.2	31.3	39.4	35.5	30.3	40.9	40.7	34.6	46.9	37.0	29.8	44.6
35–44	42.9	39.4	46.4	43.7	36.8	50.7	44.7	41.5	48.0	42.2	36.8	47.7
45–62[d]	41.2	36.0	46.4	42.3	36.9	47.9	44.2	41.0	47.4	47.2	43.6	51.0
Sex, age group, *y*												
Men, 17–24	21.1	15.3	28.0	25.2	19.2	32.1	29.9	22.6	38.0	24.5	19.2	30.6
Men, 25–34[d]	31.9	27.1	37.1	35.3	28.0	43.0	42.0	34.1	50.3	32.7	24.0	42.5
Men, 35–44	43.3	38.6	48.0	42.9	33.9	52.2	43.7	36.7	50.9	44.4	38.4	50.7
Men, 45–62[e]	35.1	29.8	40.6	40.7	34.7	47.0	45.5	39.7	51.3	45.4	40.0	50.9
Women, 17–24	26.8	22.1	31.9	28.6	22.5	35.4	28.7	22.6	35.5	23.3	17.5	30.0
Women, 25–34	38.8	33.4	44.3	35.7	31.4	40.2	39.3	31.2	47.8	41.4	33.6	49.7
Women, 35–44	42.4	38.2	46.8	44.4	35.6	53.4	45.8	41.3	50.2	39.9	32.2	48.0
Women, 45–62	46.9	40.2	53.6	43.8	36.7	51.1	43.0	38.2	47.8	49.1	45.0	53.1
Race and ethnicity												
Hispanic	42.0	37.6	46.4	46.1	41.8	50.4	43.7	40.9	46.6	42.4	34.0	51.1
Black, non-Hispanic[e]	46.8	42.5	51.2	45.1	39.8	50.4	49.3	46.3	52.3	52.7	47.3	58.1
White, non-Hispanic	36.2	32.5	39.9	37.1	32.8	41.6	40.2	35.8	44.7	39.1	35.1	43.1
Other	21.8	16.5	27.8	26.2	17.8	36.1	30.4	25.0	36.1	28.4	20.2	37.8

Note: Percentage point change and relative percentage change not calculated for civilians due to unequal NHANES survey cycle length and spacing.
Abbreviations: *n*, number (unweighted); CI, confidence interval; *y*, years.
[a] Defined as body mass index greater than or equal to 30.
[b] Data source National Health and Nutrition Examination Survey (NHANES), 2013-2014 to Aug. 2021-Aug. 2023.
[c] Standardized to sex and age composition of study's active component service member population in 2023; all other groups show crude values only.
[d] Significant quadratic trend, *p*<0.05.
[e] Significant linear trend, *p*<0.05.

other factors, such as education and medical conditions,[14] are considered for U.S. military accession.

Force-wide changes within the DOD may explain the significantly greater 2019–2023 increase in obesity among ACSMs. In early 2020, Force Health Protection Guidance was published in response to the COVID-19 pandemic, limiting close contact and reducing workplace access, leading to suspended physical fitness testing requirements by the service branches.[15] This period also saw the resolution of the War on Terror and withdrawal of troops from Iraq and Afghanistan in 2021, changing the military from a wartime to peacetime posture.[16] These changes may have shifted emphasis from combat to non-combat occupations and reduced demand for exceptional physical capabilities.

This study has several strengths. Data collected from MDR and linked to DMSS provide a near census of ACSMs, due to the annual physical examination requirement. This study population closely matched the DOD 2023 Demographics Report.[12] NHANES data are nationally representative of the civilian, non-institutional population and do not rely on survey participants seeking health care.[13] We used measured height and weight from both data sources, which is more accurate than relying on self-reported height and weight.[17]

This study has several limitations. Collection and interpretation of the data sources differed. DMSS provides a nearly complete,

FIGURE 1a. Crude Prevalence of Obesity[a], Male U.S. Active Component Service Members and Civilians, 2013–2023[b]
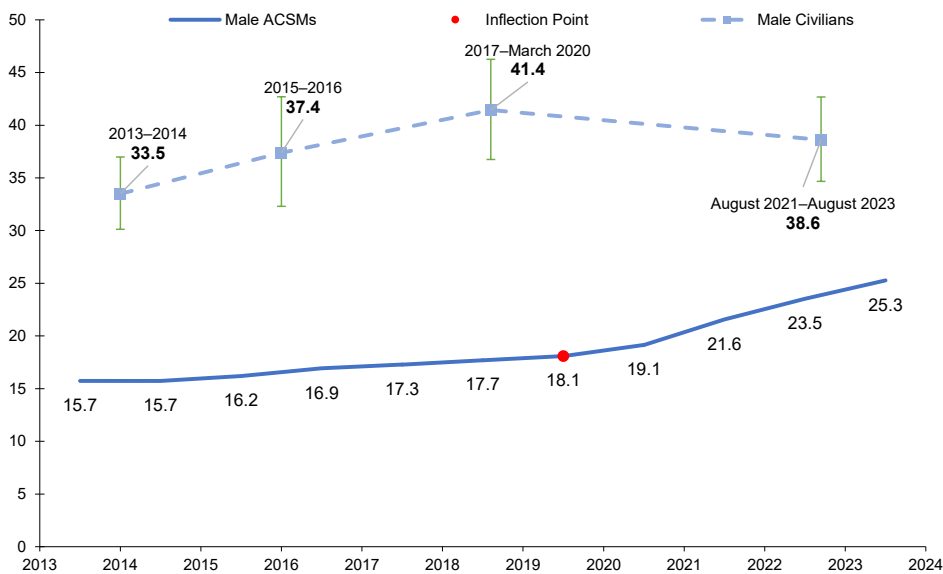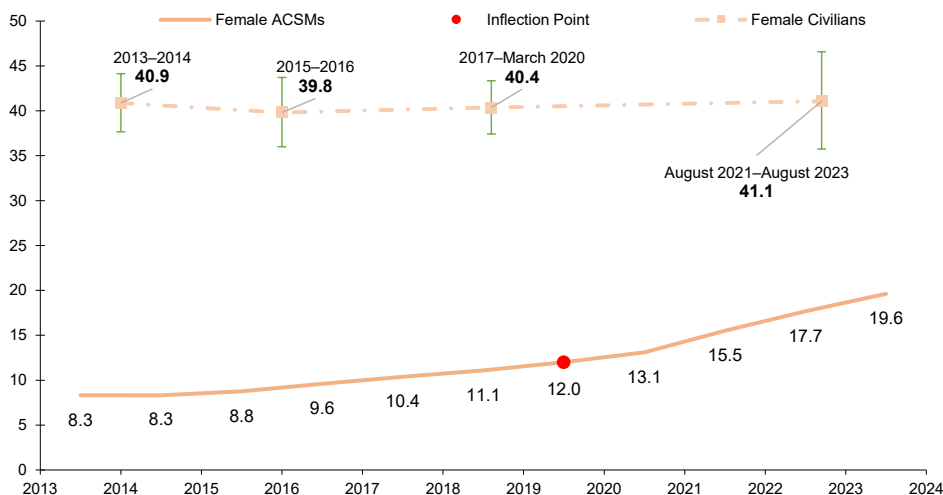

FIGURE 1b. Crude Prevalence of Obesity[a], Female U.S. Active Component Service Members and Civilians, 2013–2023[b]

Note: Significant quadratic trend in male civilians. Civilian error bars represent 95% Korn-Graubard CIs. In male ACSMs, inflection point mid-2019, slope before 0.39 and slope after 1.81 (difference 1.42, *p*<0.001). In female ACSMs, inflection point mid-2019, slope before 0.61 and slope after 1.99 (difference 1.38, *p*<0.001).
Abbreviation: ACSMs, active component service members; CIs, confidence intervals.
[a] Defined as body mass index greater than or equal to 30.
[b] Data sources: Defense Medical Surveillance System (DMSS), 2013-2023; Military Health System Data Repository (MDR), 2013-2023; National Health and Nutrition Examination Survey (NHANES), 2013-2014 to Aug. 2021-Aug. 2023.

continuous census of ACSMs in MDR, while NHANES is a cross-sectional survey with a sample selected through a complex, multi-stage probability design. Statistical power to detect significant civilian trends was lower than for ACSMs due to the smaller NHANES sample size. Data from the upcoming Military Health and Nutrition Examination Study (MHANES) may be more directly comparable to NHANES.[18] Furthermore, the first non-pregnant record of height and weight from MDR was used for ACSMs, biasing data selection from earlier in the calendar year, whereas NHANES data are collected throughout a calendar year. Seasonal variations in body weight may occur, although the magnitude is likely small.[19] Additionally, it could not be ascertained whether ACSMs had obesity before joining the military or if they developed obesity after accession.

Another important consideration when interpreting the results of this study are the limitations of using BMI to define obesity. While BMI is simple, inexpensive, and widely accepted for obesity surveillance, it does not distinguish body fat from lean body mass, nor describes body fat distribution within an individual.[20] When comparing BMI distributions, it is apparent that a higher proportion of ACSMs than civilians are in the overweight and class 1 obesity categories; conversely, a higher proportion of civilians have class 2 and class 3 obesity (i.e., severe obesity). Some ACSM classifications of overweight or class 1 obesity are likely partially attributable to higher levels of fitness and lean muscle mass in ACSMs than in civilians. Body composition measurement has recently come under increased scrutiny and will be included in a rapid review of military standards.[21] Other measures of adiposity that are better proxies for central adiposity, such as waist circumference and body composition scans, may reduce some limitations of using height and weight alone to define obesity.

Future studies could compare service-specific height and weight military accession standards with the findings from this study, to ultimately inform potential effects on military strength and readiness, as well as the burden of obesity on the MHS.

Author Affiliations
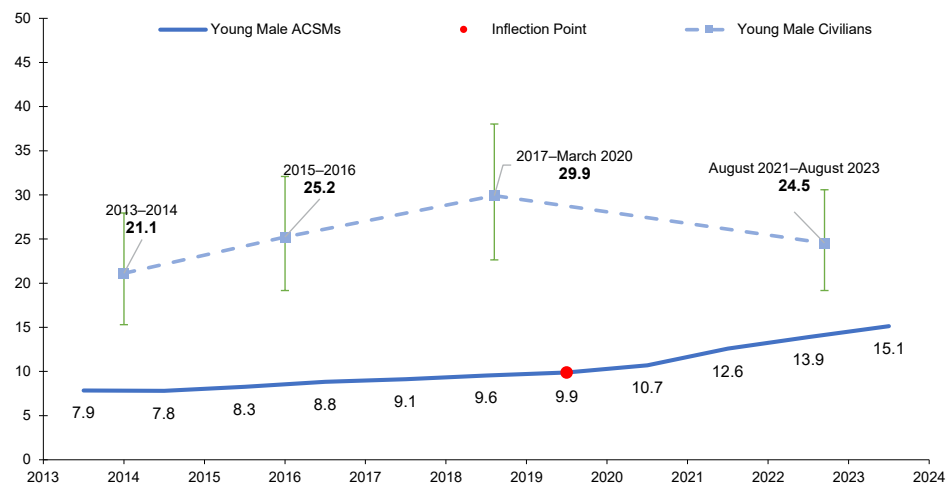*Epidemic Intelligence Service, U.S. Centers for Disease Control and Prevention, Atlanta, GA: MAJ Emmerich; National Center for Health Statistics, Centers for Disease Control and Prevention, Hyattsville, MD: MAJ Emmerich, Dr. Stierman, Dr. Ogden; Epidemiology and Analysis Branch, Armed Forces Health Surveillance Division, Public Health Directorate, Defense Health Agency, Silver Spring, MD: Dr. Mabila*

FIGURE 2. Crude Prevalence of Obesity [a], Young Male (ages 17–24 years) U.S. Active Component Service Members and Civilians, 2013–2023 [b]

Note: Inflection point mid-2019, slope before 0.35 and slope after 1.34 (difference 0.98, *p*<0.001). Civilians error bars represent 95% Korn-Graubard CIs.
Abbreviations: ACSMs, active component service members; CIs, confidence intervals.
[a] Defined as body mass index greater than or equal to 30.
[b] Data sources Defense Medical Surveillance System (DMSS), 2013–2023; Military Health System Data Repository (MDR), 2013–2023; National Health and Nutrition Examination Survey (NHANES), 2013–2014 through Aug. 2021-Aug. 2023.

FIGURE 3a. Distribution of Body Mass Index [a], Male U.S. Active Component Service Members and Civilians [b], 2023 and August 2021–August 2023 [c]
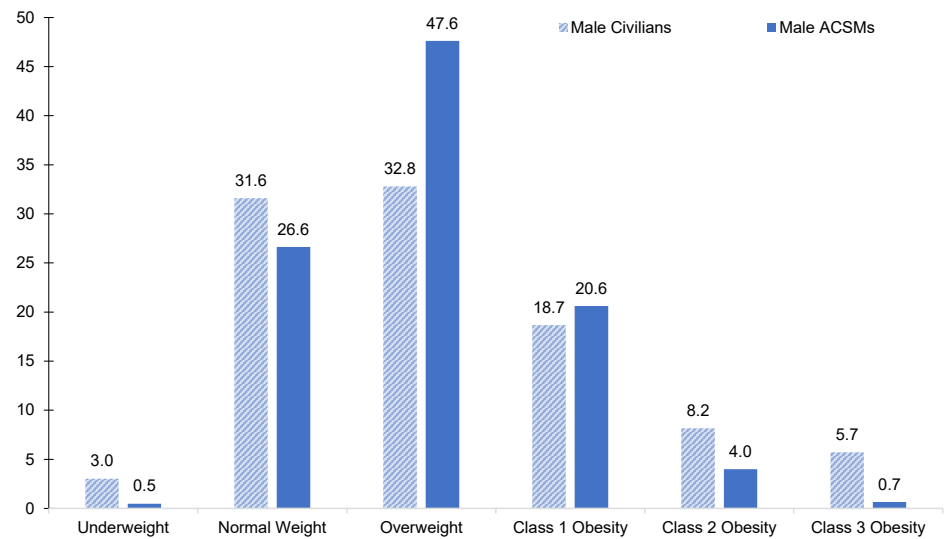
FIGURE 3b. Distribution of Body Mass Index[a], Female U.S. Active Component Service Members and Civilians[b], 2023 and August 2021–August 2023[c]

Abbreviations: ACSMs, active component service members; BMI, body mass index.
[a] Category definitions: Underweight (BMI <18.5); Overweight (BMI 25.0<30.0); Overweight (BMI 25.0<30.0); Class 1 Obesity (BMI 30.0<35.0); Class 2 Obesity (BMI 35.0<40.0); Class 3 Obesity (BMI >40.0).
[b] Standardized to age structure of study's ACSM population in 2023.
[c] Data sources: Defense Medical Surveillance System (DMSS), 2023; Military Health System Data Repository (MDR), 2023; National Health and Nutrition Examination Survey (NHANES), Aug. 2021-Aug. 2023.

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Diagnoses of Mental Health Disorders Among U.S. Active Component Service Members, 2020–2024

Mental health disorders have long been recognized as a problem in a wide range of domains, including the military, resulting in significant impacts on general morbidity, health care provision, disability, and military discharges. From 2020 through 2024, a total of 560,035 U.S. active component service members were diagnosed with at least 1 mental health disorder. Annual incidence rates of mental health disorder increased steadily from 2020 until 2022, but adjustment disorder decreased since then, anxiety gradually increased, and the remaining conditions remained relatively unchanged. Most mental health disorder diagnoses were attributable to adjustment disorders, anxiety disorders, depressive disorders, post-traumatic stress disorder, alcohol-related disorder, and other mental health disorders. Historically, mental health disorders have often been misunderstood and stigmatized, leading to under-reporting, delayed treatment, and poor prognoses. Reflecting the unique stressors and cultural stigmas of military life, ongoing efforts to raise awareness, encourage help-seeking, and improve treatment options are essential to supporting the mental and emotional well-being of service members.

What are the new findings?

While the incidence of U.S. service members who were diagnosed with at least 1 mental health disorder remained stable from 2023 to 2024, the annual incidence rate of anxiety disorders demonstrated a continual increase from 2020 to 2024.

What is the impact on readiness and force health protection?

The sustained incidence of mental health disorders (11,534.1 per 100,000 person-years) diagnosed among U.S. active component service members in addition to significant variations in relation to sex, service branch, occupation, and length of military service, underscores the need for targeted interventions along with continued monitoring to ensure force readiness.

Mental health is a significant public health issue for the U.S. military due to the unique stressors experienced by service members. Military service, especially deployment, is linked to higher rates of mental health issues both during and after service. While combat and deployments are major risk factors, even general military service can lead to mental health challenges. Mental health issues can manifest at any time but are particularly prevalent when individuals are in close proximity to combat situations or during the transition from active duty to civilian life.[1]

In 2024, mental health disorders accounted for the largest total number of hospital bed days and second highest total number of medical encounters for members of the active component of the U.S. Armed Forces.[2] In general, incidence rates (IRs) of mental health disorders have been observed to be highest among Army soldiers, female service members, and those in younger age groups.[3-6] The most recent *MSMR* update on mental health disorders, in 2024, found the IR of any mental health diagnosis increased by almost 40% between 2019 and 2023, largely attributable to adjustment disorders, anxiety disorders, depressive disorders, post-traumatic stress disorder (PTSD), alcohol-related disorders, as well as 'other' mental health disorders.[6] Mental health disorders often co-occur with other conditions, making professional diagnosis and personalized treatment plans crucial.

Despite the high prevalence and severity of mental health issues during military service, service members face challenges in accessing mental health treatment due to constraints including deployment, frequent relocation, limited mental health service capacity, and stigma associated with seeking care.[7] Addressing mental health disorders in military service members necessitates increased awareness, expanded access to care, and a prioritized focus on evidence-based treatments. Due to the significant impacts of mental health issues, military leaders, policy-makers, researchers, and the public are urging governments to provide timely and appropriate mental health services to service members.[1]

This report summarizes the numbers, types, and IRs of mental health disorder diagnoses among U.S. active component service members (ACSMs) over a 5-year surveillance period, 2020 through 2024.

TABLE 1. Mental Health Disorder Classifications

Category	ICD–9 Codes	ICD–10 Codes
Acute stress disorders	308*	F43.0
Adjustment disorders	309.0, 309.1, 309.2, 309.21, 309.22, 309.23, 309.24, 309.28, 309.29, 309.3, 309.4, 309.8, 309.82, 309.83, 309.89, 309.9	F43.2*, F43.8*, F43.9, F93.0, F94.8, F94.9
Alcohol-related disorders	291.0, 291.81, 303.0, 303.01, 303.02, 303.03, 303.9, 303.91, 303.92, 303.93, 305.0, 305.01, 305.02, 305.03	F10.1*, F10.2*
Substance-related disorders	304*, 305.2*–305.9*	F11.1*, F11.2*, F121*, F12.2*, F13.1*, F13.2*, F14.1*, F14.2*, F15.1*, F15.2*, F16.1*, F16.2*, F18.1*, F18.2*, F19.1*, F19.2*
Anxiety disorders	300.0*, 300.2*, 300.3	F40*, F41*, F42*
Post-traumatic stress disorder	309.81	F43.1*
Depressive disorders	296.2, 296.21, 296.22, 296.23, 296.24, 296.25, 296.26, 296.3, 296.31, 296.32, 296.33, 296.34, 296.35, 296.36, 296.82, 296.9, 296.99, 300.4, 311.0	F32*, F33*, F34, F34.1, F34.8, F34.81, F34.89, F34.9, F39,
Eating disorders	307.1, 307.5, 307.51, 307.59	F50.0*, F50.2*, F50.8*, F50.9
Factitious disorders	300.16, 300.19, 301.51	F68.1*
Bipolar disorder	296.0, 296.01, 296.02, 296.03, 296.04, 296.05, 296.06, 296.1, 296.11, 296.12, 296.13, 296.14, 296.15, 296.16, 296.4, 296.41, 296.42, 296.43, 296.44, 296.45, 296.46, 296.5, 296.51, 296.52, 296.53, 296.54, 296.55, 296.56, 296.6, 296.61, 296.62, 296.63, 296.64, 296.65, 296.66, 296.7, 296.8, 296.81, 296.89, 301.13	F30*, F31*, F34.0
Personality disorders	301.0, 301.1, 301.11, 301.12, 301.2, 301.21, 301.22, 301.3, 301.4, 301.5, 301.59, 301.6, 301.7, 301.8, 301.81, 301.82, 301.83, 301.84, 301.89, 301.9	F21, F60*
Schizophrenia	295*	F20*, F25*
Psychotic disorders (other psychoses)	293.81, 293.82, 297.0, 297.1, 297.2, 297.3, 297.8, 297.9, 298.0, 298.1, 298.2, 298.3, 298.4, 298.8, 298.9	F06.0, F06.2, F22, F23, F24, F28, F29
Other mental health diagnoses	Any other not excluded code 290–319	Any other not excluded code F01–F99
Exclusions	299*, 305.1, 310.2, 315*, 317*–319*	F17*, F0781, F70–F79, F80*, F81*, F82*, F84*, F88–F89

Abbreviations: ICD-9, International Classification of Diseases, 9th Revision; ICD-10, International Classification of Diseases, 10th Revision ; PTSD, post-traumatic stress disorder
*Asterisk (*) indicates that any subsequent digit, character included.

Methods

The surveillance period for this report included January 1, 2020 through December 31, 2024. The surveillance population included all individuals who served in the active components of the U.S. Army, Navy, Air Force, Marine Corps, Coast Guard, or Space Force, at any time during the surveillance period. Due to Space Force personnel data availability for 2023 only, Space Force service members were combined with Air Force personnel for this analysis.

All data used to determine mental health diagnoses were derived from records routinely maintained in the Defense Medical Surveillance System (DMSS). DMSS records document both ambulatory health care encounters and hospitalizations of active component members of the U.S. Armed Forces in fixed military and civilian (if reimbursed through the Military Health System, or MHS) hospitals and clinics.

Diagnoses were also derived from records of medical encounters of deployed service members documented in the Theater Medical Data Store (TMDS) in DMSS.

For purposes of analysis, mental health disorders were ascertained from records of medical encounters that included mental health disorder-specific diagnoses with International Classification of Diseases, 9th and 10th revisions (ICD-9/ICD-10) codes (ICD-9: 290–319; ICD-10: F01–F99) **(Table 1)** in the first or second diagnostic

position. Although the MHS transitioned to ICD-10 coding on October 1, 2015, ICD-9 codes were included in this analysis, as some TMDS encounters still contain ICD-9 diagnoses, which were needed to identify and exclude prevalent cases in records before October 1, 2015. Diagnoses of pervasive developmental disorder (ICD-9: 299.*; ICD-10: F84.*), specific delays in development (ICD-9: 315.*; ICD-10: F80.*–F82.*, F88–F89), mental retardation (ICD-9: 317.*–319.*; ICD-10: F70–F79), tobacco use disorder and nicotine dependence (ICD-9: 305.1; ICD-10: F17.*), and post-concussion syndrome (ICD-9: 310.2; ICD-10: F07.81) were excluded from analysis.

Each incident diagnosis of a mental health disorder was defined using the corresponding Armed Forces Health Surveillance Case Definition.[5] For most mental health disorders, a case was defined by either a hospitalization with an indicator diagnosis in the first or second diagnostic position; 2 outpatient or TMDS visits within 180 days documented with indicator diagnoses (from the same mental health disorder category) in the first or second diagnostic position; or a single outpatient visit in a psychiatric or mental health care specialty setting (defined by Medical Expense and Performance Reporting System [MEPRS] code beginning with 'BF') with an indicator diagnosis in the first or second diagnostic position.

The surveillance case definitions for schizophrenia, acute stress disorder, and eating disorders included some exceptions to the case parameters described. The case definition for schizophrenia required either a single hospitalization with a diagnosis of schizophrenia in the first or second diagnostic position or 4 outpatient or TMDS encounters with a diagnosis of schizophrenia in the first or second diagnostic position. Schizophrenia cases who remained in the military for more than 2 years after becoming incident cases were excluded, as those cases were assumed to have been mis-diagnosed. The case definition for acute stress disorders required 1 encounter with an indicator diagnosis in any diagnostic position, due to the transient nature of its symptoms. Eating disorder cases required 1 inpatient encounter with an indicator diagnosis in the first or second diagnostic position, or a single outpatient or TMDS encounter with an indicator diagnosis in the primary diagnostic position.

Service members diagnosed with 1 or more mental health disorders before the surveillance period (i.e., prevalent cases) were not considered at risk of incident diagnoses of the same conditions during the period. Service members diagnosed with more than 1 mental health disorder during the surveillance period were considered incident cases in each category in which they fulfilled the case-defining criteria. Service members could be considered incident cases only once in each specific mental health disorder category.

TABLE 2. Incident Diagnoses and Rates of Mental Health Disorders, Active Component, U.S. Armed Forces, 2020–2024

Category[a]	Total, 2020–2024		2020		2021		2022		2023		2024	
	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]	No.	Rate[b]
Adjustment disorders	282,883	5,000.3	50,521	4,289.0	61,158	5,203.9	62,204	5,513.5	56,051	5,116.7	52,949	4,900.6
Anxiety disorders	208,217	3,467.3	28,237	2,254.8	37,651	3,007.7	45,351	3,768.5	48,685	4,190.6	48,293	4,251.6
Depressive disorders	177,483	2,914.0	26,839	2,129.4	34,455	2,728.0	39,117	3,209.1	39,439	3,331.3	37,633	3,231.9
Other mental health disorders	124,142	2,030.1	20,197	1,604.9	24,357	1,926.4	26,748	2,183.7	26,019	2,181.1	26,821	2,284.1
PTSD	95,189	1,491.3	13,062	993.9	17,310	1,312.1	20,835	1,630.2	22,385	1,797.6	21,597	1,761.6
Alcohol-related disorders	69,248	1,093.4	13,214	1,019.0	14,245	1,091.7	14,886	1,174.1	13,589	1,096.0	13,314	1,087.8
Personality disorders	15,668	239.0	2,772	206.6	3,296	244.2	3,585	273.1	3,186	248.1	2,829	223.3
Substance-related disorders	15,275	232.8	2,971	221.3	3,361	248.8	3,488	265.5	2,914	226.6	2,541	200.3
Bipolar disorder	8,654	131.7	1,493	111.0	1,833	135.4	1,961	149.0	1,806	140.2	1,561	122.9
Other psychoses	3,838	58.3	734	54.5	845	62.4	820	62.2	765	59.3	674	53.0
Eating disorders	3,678	55.9	502	37.3	708	52.3	885	67.2	808	62.7	775	61.0
Schizophrenia	1,475	22.4	261	19.4	310	22.9	309	23.4	314	24.3	281	22.1
Acute stress disorder	1,191	18.1	201	14.9	262	19.3	291	22.1	221	17.1	216	17.0
Factitious disorders	96	1.5	17	1.3	16	1.2	24	1.8	18	1.4	21	1.7
Total	1,007,037		161,021		199,807		220,504		216,200		209,505	
Individuals, n												
>1 type of diagnosis[c]	268,480	4,074.7	33,831	2,509.5	43,445	3,202.8	48,856	3,702.7	47,853	3,706.1	45,954	3,608.0
Any diagnosis[d]	560,035	8,499.7	113,651	8,430.2	139,110	10,255.4	152,615	11,566.5	150,798	11,679.0	146,907	11,534.1

Abbreviations: No., number; PTSD, post-traumatic stress disorder; n, number.
[a] An individual may be a case within a category only once per lifetime (censored person-time).
[b] Rate per 100,000 person-years.
[c] Rate per 100,000 person-years (individual continually at risk- uncensored person-time).
[d] Defined as unique occurrence of any mental health diagnosis.

TABLE 3. Co-Morbid Incident Mental Health Disorder Diagnoses [a], Active Component, U.S. Armed Forces, 2020–2024

	Adjustment		Alcohol-related		Substance-related		Anxiety		PTSD		Depression		Bipolar	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Adjustment disorders	282,883	—	26,174	37.8	5,451	35.7	87,606	42.1	42,762	44.9	86,450	48.7	3,871	44.7
Alcohol-related disorders	26,174	9.3	69,248	—	7,195	47.1	17,501	8.4	9,682	10.2	21,464	12.1	1,531	17.7
Substance-related disorders	5,451	1.9	7,195	10.4	15,275	—	3,153	1.5	1,500	1.6	4,084	2.3	537	6.2
Anxiety disorders	87,606	31.0	17,501	25.3	3,153	20.6	208,217	—	39,733	41.7	81,610	46.0	4,097	47.3
PTSD	42,762	15.1	9,682	14.0	1,500	9.8	39,733	19.1	95,189	—	38,179	21.5	2,630	30.4
Depressive disorders	86,450	30.6	21,464	31.0	4,084	26.7	81,610	39.2	38,179	40.1	177,483	—	5,180	59.9
Bipolar disorder	3,871	1.4	1,531	2.2	537	3.5	4,097	2.0	2,630	2.8	5,180	2.9	8,654	—
Personality disorders	9,362	3.3	3,070	4.4	738	4.8	6,476	3.1	3,796	4.0	8,458	4.8	1,286	14.9
Schizophrenia	628	0.2	256	0.4	154	1.0	524	0.3	256	0.3	781	0.4	314	3.6
Other psychoses	1,791	0.6	723	1.0	475	3.1	1,346	0.7	675	0.7	1,896	1.1	767	8.9
Acute stress disorder	513	0.2	102	0.2	23	0.2	434	0.2	296	0.3	383	0.2	41	0.5
Eating disorders	1,663	0.6	440	0.6	67	0.4	1,648	0.8	999	1.1	1,752	1.0	169	2.0
Factitious disorders	57	0.0	10	0.0	3	0.0	49	0.0	14	0.0	46	0.0	7	0.1
Other mental health disorders	44,793	15.8	18,076	26.1	5,677	37.2	36,229	17.4	18,271	19.2	32,684	18.4	2,068	23.9
Total	282,883		69,248		15,275		208,217		95,189		177,483		8,654	

	Personality		Schizophrenia		Other		Acute Stress		Eating		Factitious		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Adjustment disorders	9,362	59.8	628	42.6	1,791	46.7	513	43.1	1,663	45.2	57	59.4	44,793	36.1
Alcohol-related disorders	3,070	19.6	256	17.4	723	18.8	102	8.6	440	12.0	10	10.4	18,076	14.6
Substance-related disorders	738	4.7	154	10.4	475	12.4	23	1.9	67	1.8	3	3.1	5,677	4.6
Anxiety disorders	6,476	41.3	524	35.5	1,346	35.1	434	36.4	1,648	44.8	49	51.0	36,229	29.2
PTSD	3,796	24.2	256	17.4	675	17.6	296	24.9	999	27.2	14	14.6	18,271	14.7
Depressive disorders	8,458	54.0	781	53.0	1,896	49.4	383	32.2	1,752	47.6	46	47.9	32,684	26.3
Bipolar disorder	1,286	8.2	314	21.3	767	20.0	41	3.4	169	4.6	7	7.3	2,068	1.7
Personality disorders	15,668	—	202	13.7	564	14.7	52	4.4	381	10.4	19	19.8	4,069	3.3
Schizophrenia	202	1.3	1,475	—	955	24.9	8	0.7	17	0.5	4	4.2	443	0.4
Other psychoses	564	3.6	955	64.8	3,838	—	20	1.7	32	0.9	14	14.6	1,200	1.0
Acute stress disorder	52	0.3	8	0.5	20	0.5	1,191	—	8	0.2	0	0.0	343	0.3
Eating disorders	381	2.4	17	1.2	32	0.8	8	0.7	3,678	—	2	2.1	1,273	1.0
Factitious disorders	19	0.1	4	0.3	14	0.4	0	0.0	2	0.1	96	—	37	0.0
Other mental health disorders	4,069	26.0	443	30.0	1,200	31.3	343	28.8	1,273	34.6	37	38.5	124,142	—
Total	15,668		1,475		3,838		1,191		3,678		96		124,142	

Abbreviation: PTSD, post-traumatic stress disorder; No., number.

[a] Mental health disorder diagnoses at any time during surveillance period.

Results

Numbers and incidence rates of mental health diagnoses

During the 5-year surveillance period, 560,035 ACSMs were diagnosed with at least 1 mental health disorder; of those individuals, 268,480 (47.9%) were diagnosed with mental health disorders in more than 1 diagnostic category **(Table 2)**. Overall, 1,007,037 incident diagnoses of mental health disorders were recorded in all diagnostic categories. The annual IRs of at least 1 mental health disorder increased from 8,430.2 per 100,000 person-years (p-yrs) in 2020 to 11,679.0 per 100,000 p-yrs in 2023, then decreased slightly to 11,534.1 per 100,000 p-yrs in 2024 **(Table 2)**.

Over the entire surveillance period, 95% of all incident mental health disorder diagnoses were attributable to adjustment disorders (n=282,883, 28.1%), anxiety disorders (n=208,217, 20.7%), depression disorders (n=177,483, 17.6%), 'other' mental health disorders (n=124,142, 12.3%), PTSD (n=95,189, 9.5%), and alcohol-related disorders (n=69,248, 6.9%) **(Table 2)**. In comparison, a relatively small number of incident diagnoses of personality disorders (n=15,668, 1.6%), substance-related disorders (n=15,275, 1.5%), bipolar disorder

(n=8,654, 0.9%), other psychoses (n=3,838, 0.4%), eating disorders (n=3,678, 0.4%), schizophrenia (n=1,475, 0.1%), acute stress disorders, (n=1,191, 0.1%), and factitious disorders (n=96, 0.01%) contributed to the incident diagnoses of mental health disorders among ACSMs.
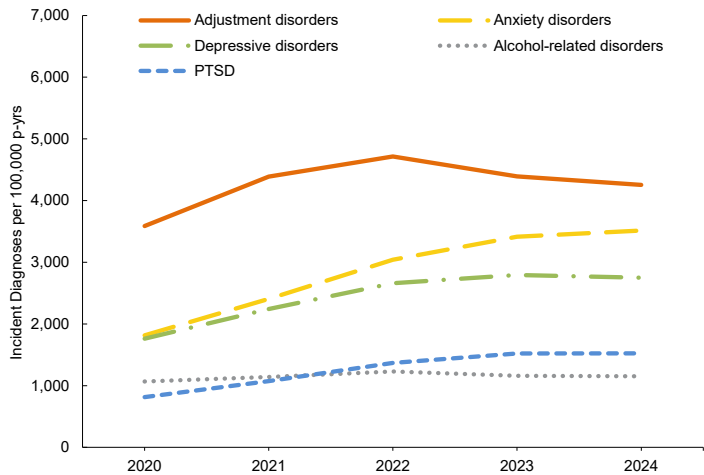
Annual IRs for adjustment disorders, alcohol-related disorder, personality disorders, substance-related disorder, bipolar disorder, eating disorders, and acute stress disorder increased steadily from 2020 until 2022 but then decreased, with adjustment disorders decreasing considerably thereafter. In contrast, anxiety increased gradually and steadily over the 5-year surveillance period, while conditions including depression, other mental health disorders, PTSD, other psychoses, and schizophrenia fluctuated (Table 2).

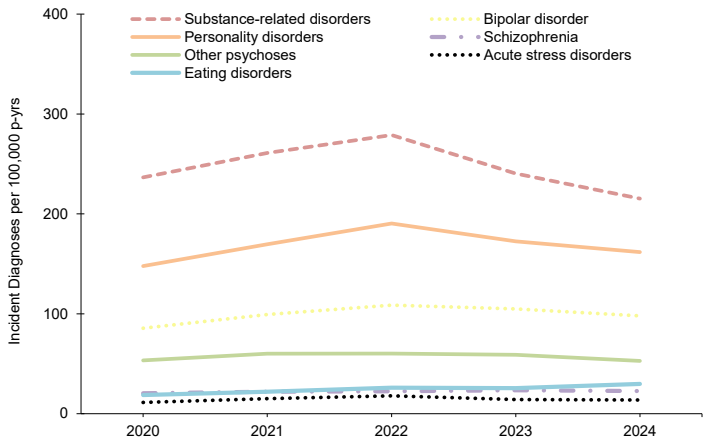### Co-occurring mental health diagnoses

Individuals with mental health disorders are often diagnosed with more than 1 mental health disorder. During the surveillance period, adjustment disorders were often co-diagnosed with other disorders, with 35.7% of substance-related disorders and 59.8% of personality disorders co-diagnosed with adjustment disorders.

FIGURE 1a. Annual Incidence Rates of the Leading 5 Mental Health Disorder Diagnoses, Active Component Men, U.S. Armed Forces, 2020–2024

Abbreviations: PTSD, post-traumatic stress disorder; p-yrs, person-years.

FIGURE 1b. Annual Incidence Rates[a] of the Next Most Frequent Mental Health Disorder Diagnoses, Active Component Men, U.S. Armed Forces, 2020–2024

[a] Due to small rate sizes, factitious disorders are not represented on this figure.

FIGURE 2a. Annual Incidence Rates of the Leading 5 Mental Health Disorder Diagnoses, Active Component Women, U.S. Armed Forces, 2020–2024
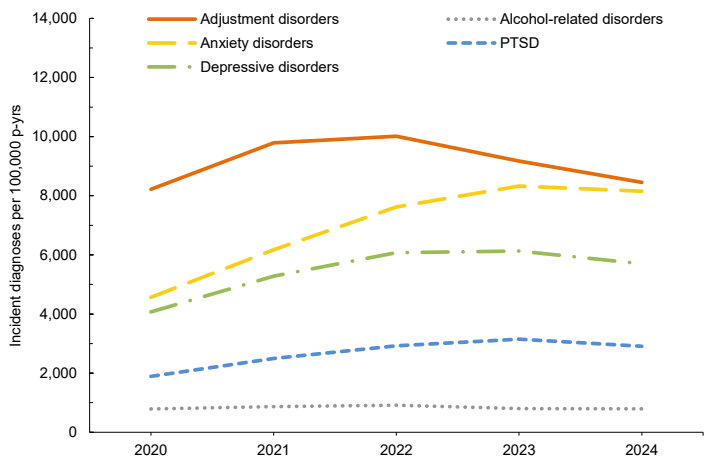
Abbreviations: PTSD, post-traumatic stress disorder; p-yrs, person-years.

FIGURE 2b. Annual Incidence Rates[a] of Next Most Frequent Mental Health Disorder Diagnoses, Active Component Women, U.S. Armed Forces, 2020–2024
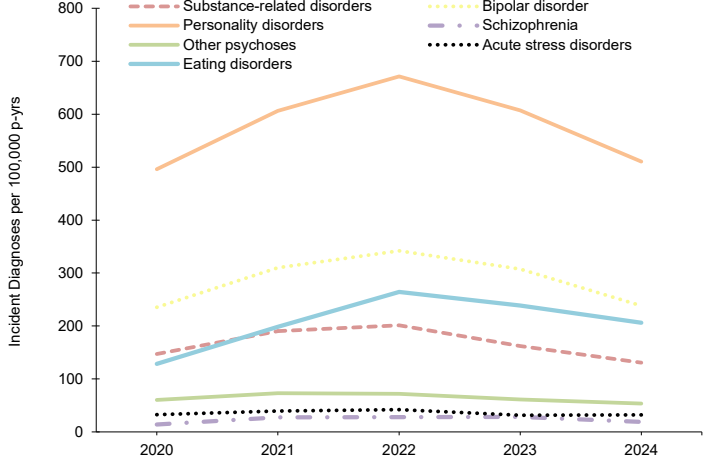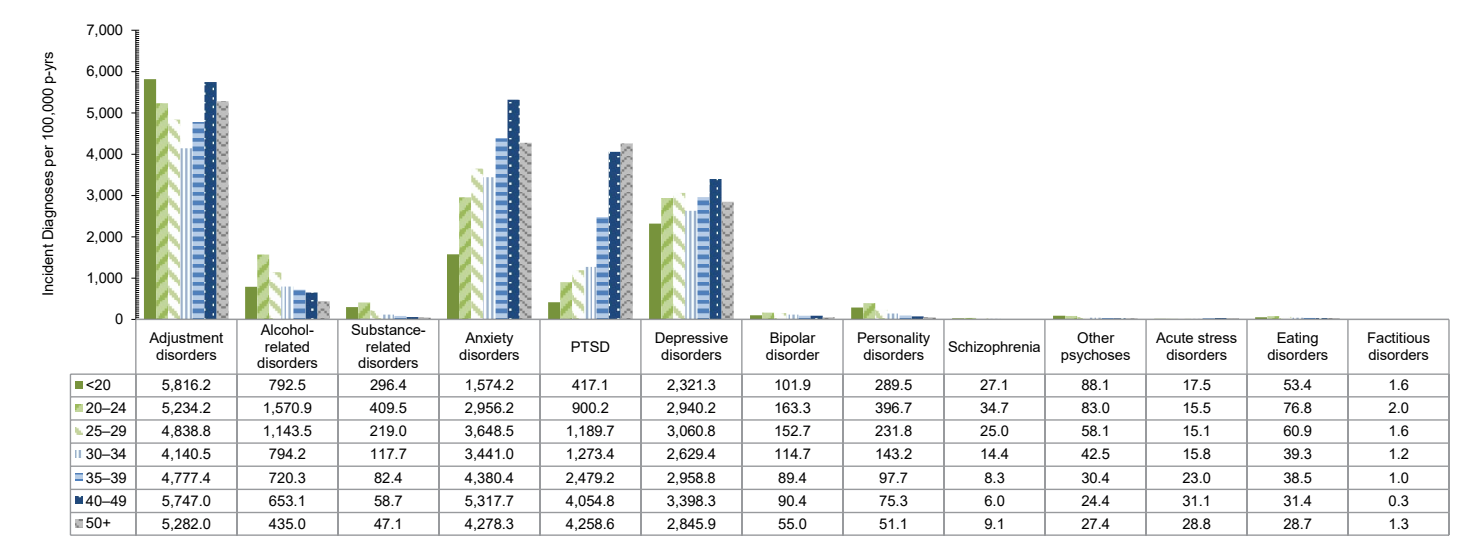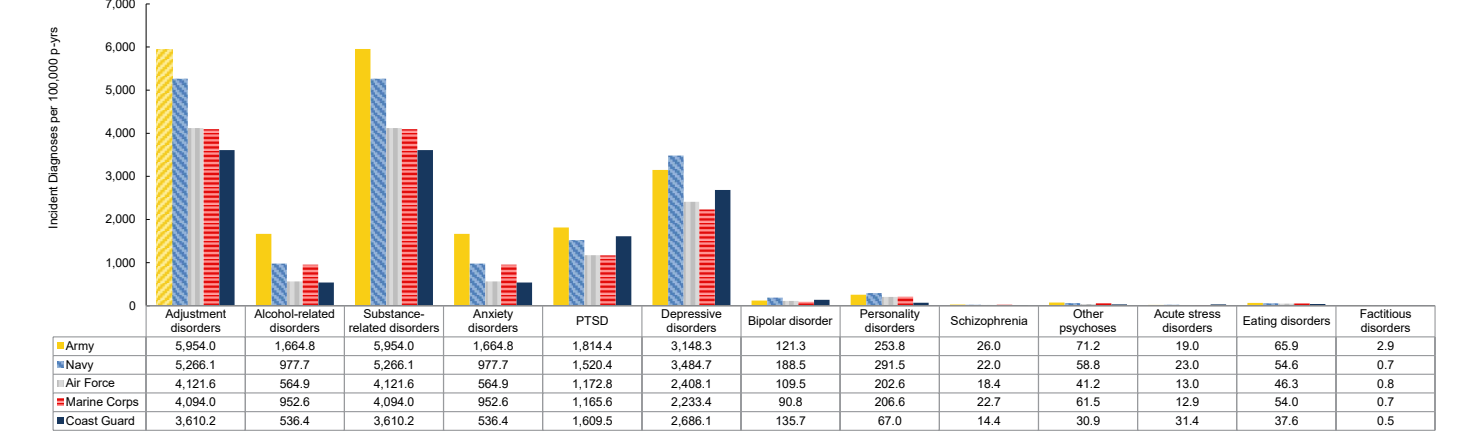
[a] Due to small rate sizes, factitious disorders are not represented.

FIGURE 3. Incidence Rates of Mental Health Disorder Diagnoses by Category and Age Group, Active Component, U.S. Armed Forces, 2020–2024
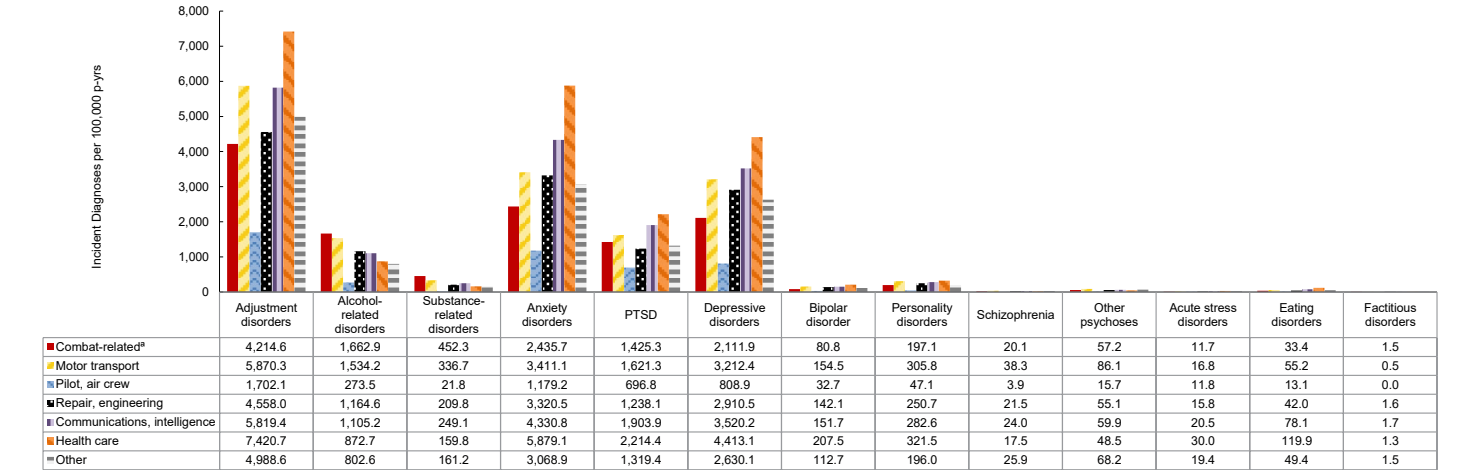

	Adjustment disorders	Alcohol-related disorders	Substance-related disorders	Anxiety disorders	PTSD	Depressive disorders	Bipolar disorder	Personality disorders	Schizophrenia	Other psychoses	Acute stress disorders	Eating disorders	Factitious disorders
<20	5,816.2	792.5	296.4	1,574.2	417.1	2,321.3	101.9	289.5	27.1	88.1	17.5	53.4	1.6
20–24	5,234.2	1,570.9	409.5	2,956.2	900.2	2,940.2	163.3	396.7	34.7	83.0	15.5	76.8	2.0
25–29	4,838.8	1,143.5	219.0	3,648.5	1,189.7	3,060.8	152.7	231.8	25.0	58.1	15.1	60.9	1.6
30–34	4,140.5	794.2	117.7	3,441.0	1,273.4	2,629.4	114.7	143.2	14.4	42.5	15.8	39.3	1.2
35–39	4,777.4	720.3	82.4	4,380.4	2,479.2	2,958.8	89.4	97.7	8.3	30.4	23.0	38.5	1.0
40–49	5,747.0	653.1	58.7	5,317.7	4,054.8	3,398.3	90.4	75.3	6.0	24.4	31.1	31.4	0.3
50+	5,282.0	435.0	47.1	4,278.3	4,258.6	2,845.9	55.0	51.1	9.1	27.4	28.8	28.7	1.3

Abbreviations: PTSD, post-traumatic stress disorder; p-yrs, person-years.

FIGURE 4. Incidence Rates of Mental Health Disorder Diagnoses by Category and Branch of Service, Active Component, U.S. Armed Forces, 2020–2024

	Adjustment disorders	Alcohol-related disorders	Substance-related disorders	Anxiety disorders	PTSD	Depressive disorders	Bipolar disorder	Personality disorders	Schizophrenia	Other psychoses	Acute stress disorders	Eating disorders	Factitious disorders
Army	5,954.0	1,664.8	5,954.0	1,664.8	1,814.4	3,148.3	121.3	253.8	26.0	71.2	19.0	65.9	2.9
Navy	5,266.1	977.7	5,266.1	977.7	1,520.4	3,484.7	188.5	291.5	22.0	58.8	23.0	54.6	0.7
Air Force	4,121.6	564.9	4,121.6	564.9	1,172.8	2,408.1	109.5	202.6	18.4	41.2	13.0	46.3	0.8
Marine Corps	4,094.0	952.6	4,094.0	952.6	1,165.6	2,233.4	90.8	206.6	22.7	61.5	12.9	54.0	0.7
Coast Guard	3,610.2	536.4	3,610.2	536.4	1,609.5	2,686.1	135.7	67.0	14.4	30.9	31.4	37.6	0.5

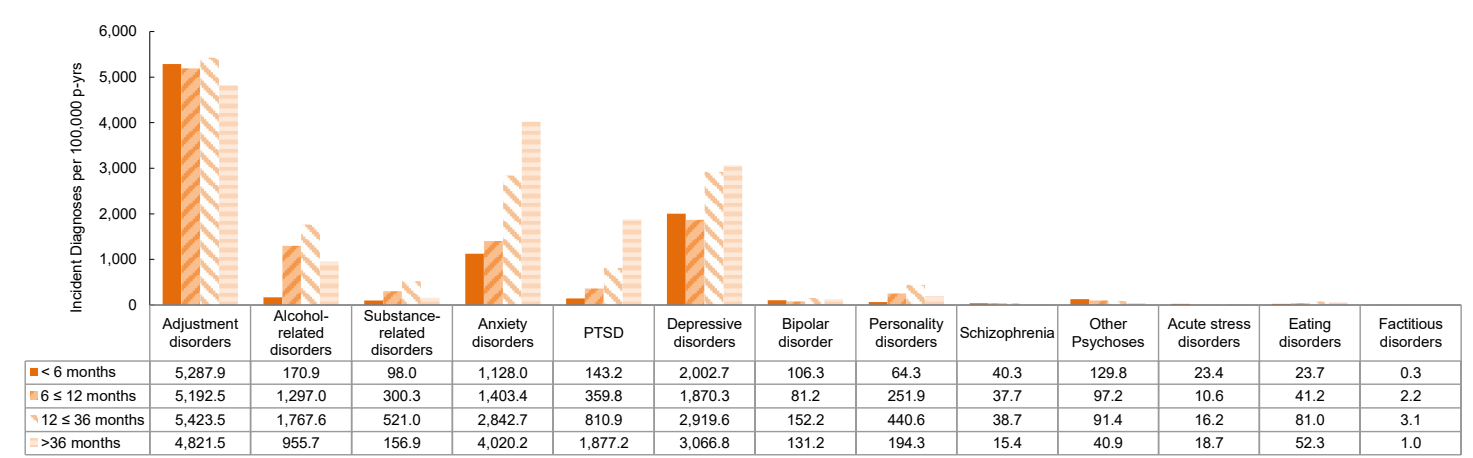Abbreviations: PTSD, post-traumatic stress disorder; p-yrs, person-years.

FIGURE 5. Incidence Rates of Mental Health Disorder Diagnoses by Category and Military Occupation, Active Component, U.S. Armed Forces, 2020–2024

	Adjustment disorders	Alcohol-related disorders	Substance-related disorders	Anxiety disorders	PTSD	Depressive disorders	Bipolar disorder	Personality disorders	Schizophrenia	Other psychoses	Acute stress disorders	Eating disorders	Factitious disorders
Combat-related[a]	4,214.6	1,662.9	452.3	2,435.7	1,425.3	2,111.9	80.8	197.1	20.1	57.2	11.7	33.4	1.5
Motor transport	5,870.3	1,534.2	336.7	3,411.1	1,621.3	3,212.4	154.5	305.8	38.3	86.1	16.8	55.2	0.5
Pilot, air crew	1,702.1	273.5	21.8	1,179.2	696.8	808.9	32.7	47.1	3.9	15.7	11.8	13.1	0.0
Repair, engineering	4,558.0	1,164.6	209.8	3,320.5	1,238.1	2,910.5	142.1	250.7	21.5	55.1	15.8	42.0	1.6
Communications, intelligence	5,819.4	1,105.2	249.1	4,330.8	1,903.9	3,520.2	151.7	282.6	24.0	59.9	20.5	78.1	1.7
Health care	7,420.7	872.7	159.8	5,879.1	2,214.4	4,413.1	207.5	321.5	17.5	48.5	30.0	119.9	1.3
Other	4,988.6	802.6	161.2	3,068.9	1,319.4	2,630.1	112.7	196.0	25.9	68.2	19.4	49.4	1.5

Abbreviations: PTSD, post-traumatic stress disorder; p-yrs, person-years.
[a] Infantry, artillery, combat engineering.

FIGURE 6. Incidence Rates of Mental Health Disorder Diagnoses by Category and Time in Service, Active Component, U.S. Armed Forces, 2020–2024

	Adjustment disorders	Alcohol-related disorders	Substance-related disorders	Anxiety disorders	PTSD	Depressive disorders	Bipolar disorder	Personality disorders	Schizophrenia	Other Psychoses	Acute stress disorders	Eating disorders	Factitious disorders
■ < 6 months	5,287.9	170.9	98.0	1,128.0	143.2	2,002.7	106.3	64.3	40.3	129.8	23.4	23.7	0.3
▨ 6 ≤ 12 months	5,192.5	1,297.0	300.3	1,403.4	359.8	1,870.3	81.2	251.9	37.7	97.2	10.6	41.2	2.2
▧ 12 ≤ 36 months	5,423.5	1,767.6	521.0	2,842.7	810.9	2,919.6	152.2	440.6	38.7	91.4	16.2	81.0	3.1
▤ >36 months	4,821.5	955.7	156.9	4,020.2	1,877.2	3,066.8	131.2	194.3	15.4	40.9	18.7	52.3	1.0

Abbreviations: PTSD, post-traumatic stress disorder; p-yrs, person-years.

Depressive disorders were also often co-diagnosed with all other mental health disorders, ranging from 26.7% of substance-related disorder cases with co-diagnoses to 59.9% of bipolar disorder diagnoses. Incident cases of anxiety disorders were also co-diagnosed with factitious disorders (51.0%), bipolar disorder (47.3%), depressive disorders (46.0%), eating disorders (44.8%), PTSD (41.7%), personality disorders (41.3%), and acute stress disorder (36.4%) **(Table 3)**.

Incidence rates of mental health diagnoses by sex

In general, most incident mental health disorder diagnoses were more prevalent among female service members, but alcohol- and substance-related disorders were more prevalent in male service members during the 5-year surveillance period. Schizophrenia was diagnosed at a higher rate in male service members in 2024 and 2020 **(Figures 1a–2b)**.

Rates of mental health disorder diagnoses in male service members steadily increased until 2022, remaining relatively unchanged since then, with the exception of decreases in adjustment disorders, substance-related disorders, and personality disorders. Anxiety disorders increased throughout the surveillance period among male service members **(Figures 1a, 1b)**.

Rates of mental health disorder diagnoses in female service members followed a similar pattern to those of male service members, with the exception of a slight decrease in anxiety disorders in 2024. Adjustment disorder IRs were the highest among women in 2024, followed by anxiety disorders, depressive disorders, other mental health disorders, and PTSD. During the 5-year surveillance period, eating disorders were 7–10 times more common in female ACSMs than in males, while personality disorders were 3.2–3.6 times more common among women **(Figures 2a, 2b)**.

Incidence rates of mental health diagnoses by age

Rates of most mental health disorders varied by age, with adjustment disorders exhibiting the highest incidence among all age groups **(Figure 3)**. Service members under age 20 years had the highest IR of adjustment disorder, compared to all other age groups. Rates of alcohol- and substance-related disorders, along with personality disorders, bipolar disorder, eating disorders, and schizophrenia, were highest for service members aged 20-24 years, while declining thereafter with increasing age. As age increased, PTSD increased, while adjustment disorders, anxiety disorders, depressive disorders, and acute stress disorders fluctuated. ACSMs ages 40-49-years had the highest IRs of anxiety and depressive disorders, and those older than age 50 years had the highest incidence of PTSD. After age 30 years, rates of adjustment disorders, anxiety disorders, and depressive disorders increased until ages 40-49 years, thereafter declining in those older than age 50 years.

Incidence rates of mental health diagnoses by service

Overall, IRs of mental health disorders were highest in the Army, specifically adjustment disorders, alcohol-related disorders, substance related disorders, anxiety disorders, PTSD, schizophrenia, other psychoses, and eating disorders. The Navy accounted for the highest IRs of depressive disorders, personality disorders, and bipolar disorder, while the Coast Guard accounted for the highest IRs of acute stress disorders **(Figure 4)**.

Incidence rates of mental health diagnoses by occupation

Rates of adjustment disorders, anxiety disorders, depressive disorders, PTSD, personality disorders, bipolar disorder, eating disorders, and acute stress disorders were generally highest in health care occupations. Service members in combat-related roles exhibited the highest IRs of alcohol- and substance-related disorders, while those in motor transport had the highest rates of other psychoses and schizophrenia. By contrast, pilots and air crew personnel showed the lowest IRs of mental health disorders **(Figure 5)**.

Incidence rates of mental health diagnoses by time in service

Rates of mental health disorder diagnoses differ by length of service, with highest IRs of schizophrenia, other psychoses, and acute stress disorders diagnoses occurring among ACSMs with less than 6 months of service. For those who served 12-36 months, the most common diagnoses were adjustment disorders, alcohol-related disorders, substance-related disorders, personality disorders, bipolar disorder, and eating disorders. Among those who served 36 months or longer, anxiety disorders, depressive disorders, and PTSD were most common (Figure 6).

Discussion

This report provides an update on incident diagnoses for mental health disorders among ACSMs of the U.S. Armed Forces from 2020 through 2024. Adjustment disorders, anxiety disorders, depressive disorders, PTSD, and alcohol-related disorder, along with other mental health disorders, consistently accounted for approximately 95% of all mental health disorder diagnoses during the 5-year surveillance period. IRs of anxiety disorders increased substantially from 2020 to 2024.

The increasing incidence of anxiety disorders and PTSD among ACSMs is complex, with multiple contributing factors including combat exposure, military culture and environment, personal and pre-existing factors, in addition to other stressors.[8,9] The consequences of these disorders can affect service readiness, military occupations, professional and personal relationships, long-term health, substance use, and potential suicidal ideation.[10]

Prior *MSMR* reports indicate that approximately one-third of anxiety disorder diagnoses from 2000 to 2011 had a co-occurring diagnosis of either adjustment or depressive disorder.[11] Co-occurring diagnoses persist in this report, which documents both adjustment disorders (42.1%) and depressive disorders (39.2%) as the leading 2 co-occurring diagnoses, from 2020 through 2024, for ACSMs with

incident anxiety disorder diagnoses. Co-occurring mental health diagnoses represent a significant challenge, as they can increase both the complexity and severity of symptomology, complicate diagnosis and treatment, and affect overall prognosis.

Mental health disorders affect male and female service members differently, with effects on both related prevalence and presentation of mental health conditions. During the 5-year surveillance period, most mental health disorders were more prevalent among female ACSMs, while alcohol and substance-related disorders were more common among male ACSMs. Female service members' vulnerability to physical and mental health issues appears to be highly correlated with unwanted gender-based experiences, which may lead them more likely to report mental health problems than male service members.[12] In particular, the IR of eating disorders among female service members in this report was 7–10 times higher than that of male service members, similar to the results of a previous report.[13] Eating disorders are complex conditions, difficult to treat and often co-occurring with other mental health conditions, making understanding each individual's unique needs and experiences crucial for effective treatment.[14] Differences in mental health disorder diagnoses between the sexes underscores the need for individualized treatment approaches that are sex-specific.

Consistent with previous findings, this report confirms age-related variations in mental health diagnoses, with service members aged 20-24 years exhibiting a particularly high incidence of mental health disorders during the 2020–2024 surveillance period.[3,15] While IRs varied by age group, each age group exhibited mental health problems that were particularly severe and unique to that age group.

From 2020 through 2024, the Army consistently reported higher IRs of most mental health disorders, likely due to its large size, frequent deployments, and high-stress missions.[6,15] While the Army has higher IRs overall, the Marine Corps is often viewed as the most mentally demanding branch due to its rigorous standards and intense emotional and psychological pressures.[16] Effective management and

prevention must take into account each branch of service's distinct demographics, culture and missions, in order to fully address mental health.

As documented in a prior report,[6] service members in health care occupations exhibited higher rates of diagnoses of most mental health disorders. Health care professionals often struggle to provide appropriate care for themselves, and when mental illness develops, tend to be reluctant to seek help when needed and neglect self-care.[17] The higher rates of mental health disorders among those in health care occupations suggest an important need for future research on effective solutions to support the mental health of military health care personnel.

During the 5-year surveillance period, adjustment disorders generally had highest incidence rates during the early stages of military service. All mental health disorders continued to increase until mid-career, after which all mental health disorders decreased or remained stable through the later career stages, with the exception of anxiety disorders and PTSD.

There are several limitations in interpreting the results in this report. First, this report was compiled based on standardized administrative records and may not be reliable indicators of the true burden of mental health disorders among military service members. Second, this report may under-estimate the incidence of mental health disorders if service members do not seek appropriate care or receive care not routinely documented as ICD-9/ICD-10-coded diagnoses (e.g., from private practitioners, counseling or advocacy support centers, chaplains), or if mental health disorders were not diagnosed or reported on standardized records of care, or if diagnoses were mis-coded or incorrectly transcribed on centrally transmitted records. Conversely, some conditions may have been erroneously diagnosed or mis-coded as mental health disorders (e.g., screening visits), which may contribute to an over-estimation of the true burden of disease. Lastly, these analyses summarize the experiences of individuals while serving in an active component of the U.S. military and do not include mental health disorders or problems that affected members of reserve

components or veterans of recent military service who received care outside the MHS.

In September 2024, the Department of Defense revised Instruction 6490.08, establishing a Department policy that promotes health-seeking behaviors for mental health services. The new policy emphasizes unrestricted, non-stigmatizing access to mental health care services, including voluntary substance mis-use education, as essential for maintaining the health and readiness of the total force.[18] As the burden of mental health disorders continues to increase during a period of policy change, ongoing surveillance and further analyses are warranted to better understand the true burden of disease in addition to health care access and provision. The results from this report underscore the need for mental health services to address a range of mental health co-morbidities in ACSMs.

Mental health stigma is a primary barrier to help-seeking in the military, consistently identified as a major concern in military studies.[19] Although stigma's direct effect on care may be minimal,[20] a holistic approach that comprehensively addresses the complex needs of military personnel is crucial, providing integrated care from military and civilian providers that proactively works to reduce the persistent stigma associated with seeking mental health support.[21,22]

The trends in this report demonstrate the ongoing need for mental health services among U.S. military members, documented in previous *MSMR* reports. Effectively addressing the increasing rates of anxiety disorders and PTSD in ACSMs requires evidence-informed prevention strategies, enhanced access to care, early intervention, appropriate and integrated treatment, strengthened support networks, along with ongoing research.[1] In addition, effective management of co-occurring disorders requires comprehensive assessment approaches complemented by treatment plans that are both individualized and integrated.[8,23]
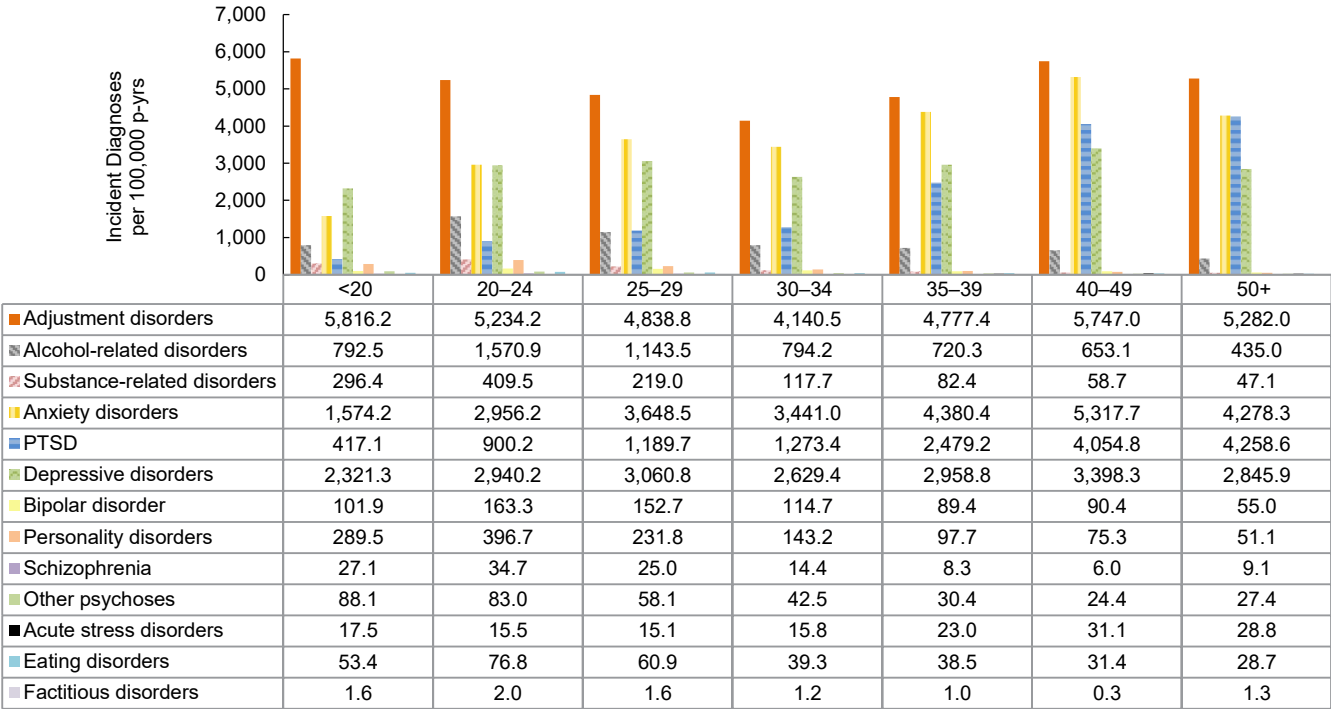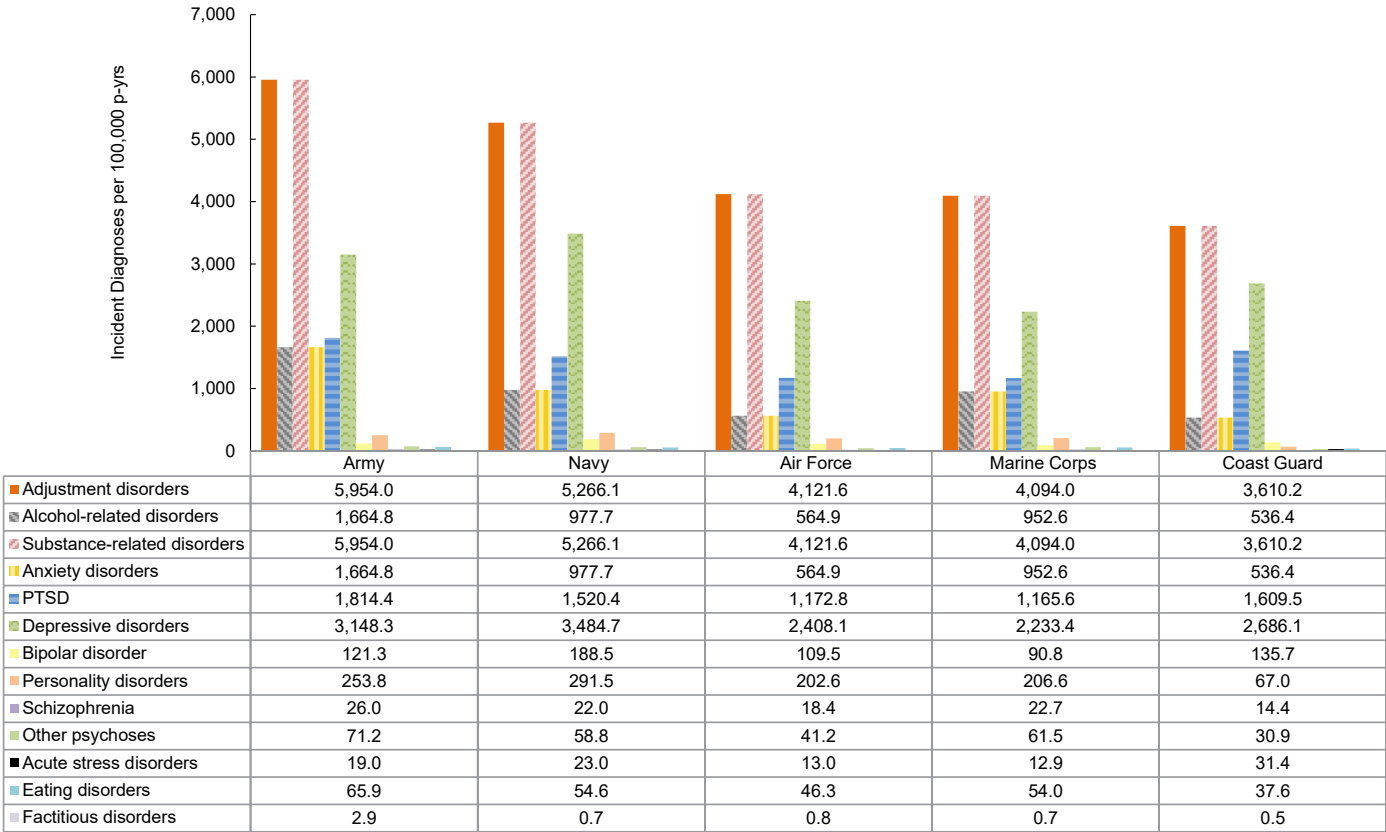
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FIGURE 3 SUPPLEMENT. Incidence Rates of Mental Disorder Diagnoses by Age Group and Category, Active Component, U.S. Armed Forces, 2020–2024
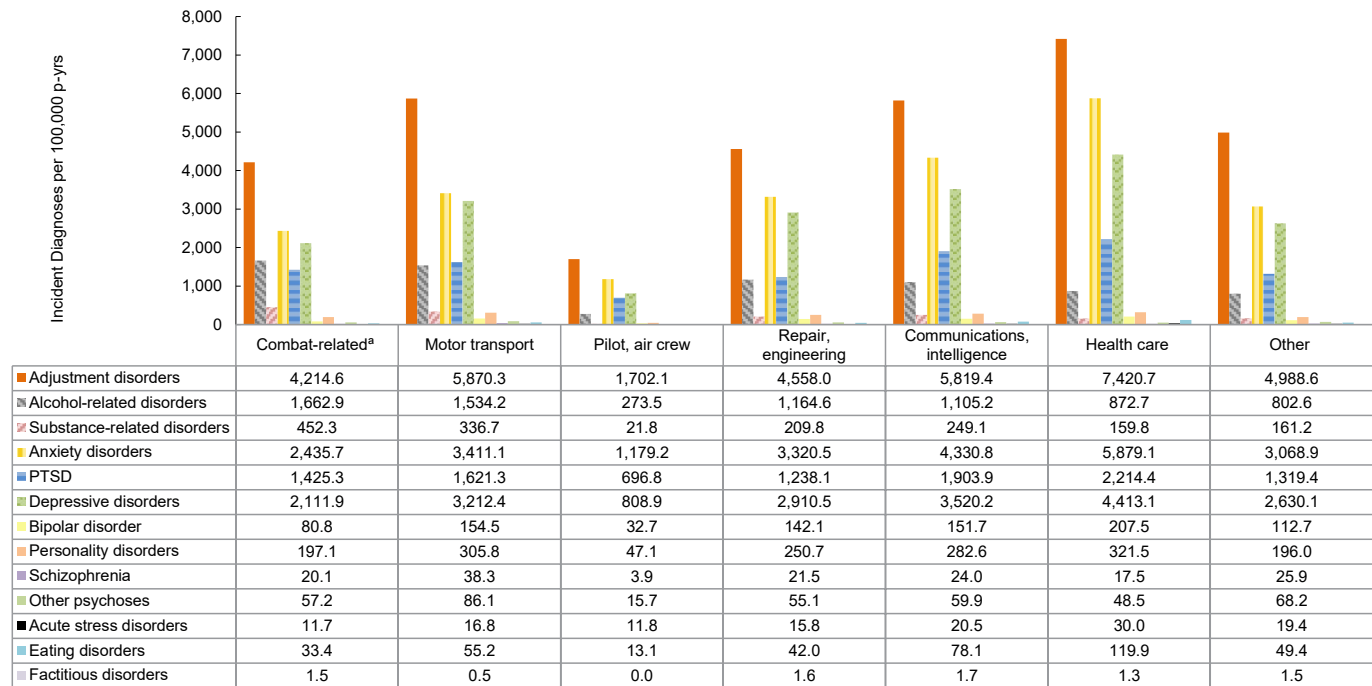

	<20	20–24	25–29	30–34	35–39	40–49	50+
Adjustment disorders	5,816.2	5,234.2	4,838.8	4,140.5	4,777.4	5,747.0	5,282.0
Alcohol-related disorders	792.5	1,570.9	1,143.5	794.2	720.3	653.1	435.0
Substance-related disorders	296.4	409.5	219.0	117.7	82.4	58.7	47.1
Anxiety disorders	1,574.2	2,956.2	3,648.5	3,441.0	4,380.4	5,317.7	4,278.3
PTSD	417.1	900.2	1,189.7	1,273.4	2,479.2	4,054.8	4,258.6
Depressive disorders	2,321.3	2,940.2	3,060.8	2,629.4	2,958.8	3,398.3	2,845.9
Bipolar disorder	101.9	163.3	152.7	114.7	89.4	90.4	55.0
Personality disorders	289.5	396.7	231.8	143.2	97.7	75.3	51.1
Schizophrenia	27.1	34.7	25.0	14.4	8.3	6.0	9.1
Other psychoses	88.1	83.0	58.1	42.5	30.4	24.4	27.4
Acute stress disorders	17.5	15.5	15.1	15.8	23.0	31.1	28.8
Eating disorders	53.4	76.8	60.9	39.3	38.5	31.4	28.7
Factitious disorders	1.6	2.0	1.6	1.2	1.0	0.3	1.3

Abbreviations: PTSD, post-traumatic stress disorder; p-yrs, person-years.

FIGURE 4 SUPPLEMENT. Incidence Rates of Mental Health Disorder Diagnoses by Branch of Service and Category, Active Component, U.S. Armed Forces, 2020–2024

	Army	Navy	Air Force	Marine Corps	Coast Guard
Adjustment disorders	5,954.0	5,266.1	4,121.6	4,094.0	3,610.2
Alcohol-related disorders	1,664.8	977.7	564.9	952.6	536.4
Substance-related disorders	5,954.0	5,266.1	4,121.6	4,094.0	3,610.2
Anxiety disorders	1,664.8	977.7	564.9	952.6	536.4
PTSD	1,814.4	1,520.4	1,172.8	1,165.6	1,609.5
Depressive disorders	3,148.3	3,484.7	2,408.1	2,233.4	2,686.1
Bipolar disorder	121.3	188.5	109.5	90.8	135.7
Personality disorders	253.8	291.5	202.6	206.6	67.0
Schizophrenia	26.0	22.0	18.4	22.7	14.4
Other psychoses	71.2	58.8	41.2	61.5	30.9
Acute stress disorders	19.0	23.0	13.0	12.9	31.4
Eating disorders	65.9	54.6	46.3	54.0	37.6
Factitious disorders	2.9	0.7	0.8	0.7	0.5

Abbreviations: PTSD, post-traumatic stress disorder; p-yrs, person-years.

FIGURE 5 SUPPLEMENT. Incidence Rates of Mental Health Disorder Diagnoses by Military Occupation and Category, Active Component, U.S. Armed Forces, 2020–2024

	Combat-relatedᵃ	Motor transport	Pilot, air crew	Repair, engineering	Communications, intelligence	Health care	Other
Adjustment disorders	4,214.6	5,870.3	1,702.1	4,558.0	5,819.4	7,420.7	4,988.6
Alcohol-related disorders	1,662.9	1,534.2	273.5	1,164.6	1,105.2	872.7	802.6
Substance-related disorders	452.3	336.7	21.8	209.8	249.1	159.8	161.2
Anxiety disorders	2,435.7	3,411.1	1,179.2	3,320.5	4,330.8	5,879.1	3,068.9
PTSD	1,425.3	1,621.3	696.8	1,238.1	1,903.9	2,214.4	1,319.4
Depressive disorders	2,111.9	3,212.4	808.9	2,910.5	3,520.2	4,413.1	2,630.1
Bipolar disorder	80.8	154.5	32.7	142.1	151.7	207.5	112.7
Personality disorders	197.1	305.8	47.1	250.7	282.6	321.5	196.0
Schizophrenia	20.1	38.3	3.9	21.5	24.0	17.5	25.9
Other psychoses	57.2	86.1	15.7	55.1	59.9	48.5	68.2
Acute stress disorders	11.7	16.8	11.8	15.8	20.5	30.0	19.4
Eating disorders	33.4	55.2	13.1	42.0	78.1	119.9	49.4
Factitious disorders	1.5	0.5	0.0	1.6	1.7	1.3	1.5

Abbreviations: PTSD, post-traumatic stress disorder; p-yrs, person-years.
ᵃ Infantry, artillery, combat engineering.

FIGURE 6 SUPPLEMENT. Incidence Rates of Mental Health Disorder Diagnoses by Time in Service and Category, Active Component, U.S. Armed Forces, 2020–2024

	< 6 months	6 ≤ 12 months	12 ≤ 36 months	>36 months
Adjustment disorders	5,287.9	5,192.5	5,423.5	4,821.5
Alcohol-related disorders	170.9	1,297.0	1,767.6	955.7
Substance-related disorders	98.0	300.3	521.0	156.9
Anxiety disorders	1,128.0	1,403.4	2,842.7	4,020.2
PTSD	143.2	359.8	810.9	1,877.2
Depressive disorders	2,002.7	1,870.3	2,919.6	3,066.8
Bipolar disorder	106.3	81.2	152.2	131.2
Personality disorders	64.3	251.9	440.6	194.3
Schizophrenia	40.3	37.7	38.7	15.4
Other Psychoses	129.8	97.2	91.4	40.9
Acute stress disorders	23.4	10.6	16.2	18.7
Eating disorders	23.7	41.2	81.0	52.3
Factitious disorders	0.3	2.2	3.1	1.0

Abbreviations: PTSD, post-traumatic stress disorder; p-yrs, person-years.

Perinatal Mental Health Conditions Among U.S. Active Component Service Women, 2016–2022

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Although mental health conditions are the leading underlying cause of maternal mortality, there is limited research on the prevalence of perinatal mental health conditions among active duty service women (ADSW). In this study of live-born deliveries among U.S. ADSW (n=62,729) with pregnancy start and end dates (i.e., dates of last menstrual period and infant delivery, respectively) from October 1, 2016 through December 31, 2021, International Classification of Diseases, 10th Revision, Clinical Modification diagnosis codes were used to identify mental health conditions: trauma and stressor-related disorders, anxiety and panic disorders, depressive disorders, suicidal ideation or attempt, and eating disorders. Data were collected through 1 year postpartum, until December 31, 2022. The prevalence of diagnosed mental health conditions from 1 year prior to pregnancy through 1 year postpartum was 33.8%. Trauma and stressor-related disorders were most prevalent (23.1%), followed by anxiety and panic disorders (16.9%), depressive disorders (14.6%), suicidal ideation or attempt (1.6%), and eating disorders (0.4%). The prevalence of mental health conditions was higher in the postpartum period (22.0%) compared to pregnancy (18.4%) and prior to pregnancy (15.0%). Overall, higher prevalence of these conditions was found among non-Hispanic Black ADSW (37.4%), and those who were unmarried (38.4%), never deployed (34.9%), or in the Army (37.4%) and Navy (36.4%).

What are the new findings?

One in 3 active duty service women were diagnosed with a mental health condition in the year preceding pregnancy through 1 year postpartum. Overall, non-Hispanic Black and junior enlisted active duty service women demonstrated higher prevalences of mental health conditions compared to all other racial and ethnic groups and military ranks.

What is the impact on readiness and force health protection?

Mental health issues can lead to early returns from deployment, which can adversely affect unit missions and cohesion. Service member retention is linked to mental health, with those who experience mental health conditions less likely to remain in military service. As the proportion of women serving in the military continues to increase, targeted perinatal mental health support and interventions should be prioritized to improve active duty service women's psychological well-being and maintain force readiness.

Most (93.5%) U.S. active duty service women (ADSW) are of childbearing age (18-44 years), averaging 15,000 live births per year.[1] From 2017 through 2019, 22.7% of maternal mortality in the general U.S. population was attributable to mental health conditions, including deaths due to suicide or overdose.[2] While comparable maternal mortality data are not published for ADSW, during the same period 37.8% of ADSW received a mental health diagnosis during pregnancy or through 1 year postpartum.[3]

Recent research suggests that deaths from suicide or accidental overdose account for a much larger percentage of pregnancy-associated deaths among ADSW (39.4%)

compared to civilian women (8.8–10.9%).[4] The increased burden of mental health conditions among ADSW continues after military service, with as many as 46.7% of female veterans reporting perinatal depression, compared to 10% of civilian women.[5] Existing research only provides the prevalence of any mental health condition versus specific diagnoses, without estimates for sub-populations of ADSW. This report describes the 2016–2022 prevalence of perinatal mental health conditions among ADSW, with data presented for 5 diagnostic categories: trauma and stressor-related disorders, anxiety and panic disorders, depressive disorders, suicidal ideation or attempt, and eating disorders.

Methods

Data sources

This study utilized data from the Department of Defense (DOD) Birth and Infant Health Research (BIHR) program, a population-level surveillance and research database that identifies live births among Military Health System (MHS) beneficiaries. Detailed information on BIHR data and methodologies have been described elsewhere.[6,7] BIHR includes military personnel data from the Defense Manpower Data Center (DMDC) and administrative medical encounter data from the MHS

Data Repository; BIHR data are used to identify and link live births to birth mothers and military sponsors through the Defense Enrollment Eligibility Reporting System, to describe associated demographic and medical characteristics. These data are linked using the unique 10-digit identifiers (i.e., Electronic Data Interchange Personal Identifier) assigned to each person with a direct DOD relationship. Institutional Review Board approval (NHRC.1999.0003) for this study was obtained from the Naval Health Research Center, with informed consent waived in accordance with criteria set forth by 32 Code of Federal Regulations Section 219.116(d).

Study population

The source population for this study included all live-born deliveries among ADSW captured in BIHR data with pregnancy start and end dates (i.e., dates of last menstrual period, or LMP, and delivery, respectively) from October 1, 2016 through December 31, 2021. This timeframe was selected to include medical data that were captured exclusively after the transition to the International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM), which occurred on October 1, 2015. Deliveries were excluded if an ADSW did not have a record of TRICARE enrollment or any medical encounter data for at least 10 of 12 months during both the year preceding pregnancy and year following delivery.

Mental health conditions

Mental health conditions of interest were identified using ICD-10-CM codes and then grouped into 5 categories: trauma and stressor-related disorders (F43.x), anxiety and panic disorders (F40.x, F41.x), depressive disorders (F32.x, F33.x, F34.x), suicidal ideation or attempt (R45.851, T14.91), and eating disorders (F50.x), in accordance with the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision.*[8] Conditions were measured within 3 timeframes: pre-pregnancy (year prior to LMP), pregnancy (from LMP to date of delivery), and postpartum (year following date of delivery).

For each diagnostic category and timeframe, cases were identified by the presence of diagnosis codes on 1 inpatient or 2 outpatient records on separate dates. This method was selected to improve reliability for capturing true mental health diagnoses and not exclusion or 'rule out' diagnoses, which are common with new mental health conditions, as many conditions exhibit overlapping symptoms. Diagnostic categories and timeframes were not mutually exclusive, meaning that ADSW with live-born deliveries could be identified with multiple mental health conditions within multiple mental health diagnostic categories at multiple timeframes in the study period. For example, if an ADSW had both an anxiety and depressive disorder diagnosis she would be represented individually in both diagnostic categories (anxiety or panic disorders and depressive disorders).

To provide the prevalence of diagnosed mental health conditions pre-pregnancy through 1 year postpartum, an overall composite variable was created to identify deliveries that met criteria for any mental health condition of interest during any timeframe. Variables were created to identify deliveries with any diagnosed mental health conditions of interest within each timeframe (pre-pregnancy, pregnancy, postpartum). To evaluate the prevalence of specific mental health conditions, variables were created for each diagnostic category (trauma / stress, anxiety / panic, depressive, suicidal ideation / attempt, eating disorders) assessed over the entire study period and within each timeframe (pre-pregnancy, pregnancy, postpartum). We also created a co-morbid mental health condition variable that summed the number of diagnosed mental health conditions (from the 5 diagnostic categories of interest) for each individual throughout the study period (1 year pre-pregnancy through 1 year postpartum). The count ranged 0–5 and was categorized as 0, 1, 2, or 3+.

Covariates

Demographic and military factors were obtained from DMDC files corresponding to the month of delivery. Variables included racial or ethnic group (i.e., American Indian or Alaska Native, Asian,

Hispanic, multiracial, Native Hawaiian /Pacific Islander, non-Hispanic Black, non-Hispanic White, unknown), age at infant delivery (<20, 20-24, 25-29, 30-34, 35+ years), marital status (married, unmarried / unknown), military rank and pay grade (junior enlisted [E1-E4], mid- / senior enlisted [E5-E9], officer / warrant officer [O1-O10 / W01-W05]), branch of service (Army, Navy, Air Force, Marine Corps, Coast Guard), and deployment history prior to infant delivery (ever deployed, never deployed). Deployment history was limited to deployments in support of post-September 11, 2001 (9/11) operations, predominately in or near the Middle East.

Statistical analysis

Frequencies and percentages were used to describe the prevalence of mental health conditions during the study period, and by demographic and military characteristics. Confidence intervals (CIs) were also calculated to assess differences between subgroups. Prevalence was not calculated for subgroups with less than 30 cases. Prevalence was calculated for the mental health conditions overall and by specific diagnostic category; measures were calculated throughout the entire study (1 year pre-pregnancy through 1 year postpartum) and by specific timeframe. All data management and statistical analyses were performed using SAS, Version 9.4 (SAS Institute Inc., Cary, NC).

Results

Analytic population

The source population included 62,729 live-born deliveries among 54,471 unique ADSW. After excluding deliveries among ADSW with less than 10 of 12 months of either TRICARE enrollment or medical encounter data before and after pregnancy, the final analytic cohort comprised 56,371 deliveries among 49,262 unique ADSW (89.9% of source population). Excluded deliveries were more likely to be among ADSW younger than age 20 years, of junior enlisted rank, and in the Marine Corps.

Prevalence of any mental health condition

Overall, 33.8% of deliveries were among ADSW diagnosed with at least 1 mental health condition of interest at any time during the study period (Table 1). Deliveries to non-Hispanic Black ADSW had the highest prevalence of any mental health condition (37.4; 95% CI 36.6, 38.2) compared to all other racial and ethnic groups (range 23.6–34.3%). A higher prevalence of mental health conditions was found among deliveries to unmarried versus married ADSW (38.4%; 95% CI 37.5, 39.2 vs. 32.5%; 95% CI 32.1, 33.0). The prevalence of mental health conditions was lower among deliveries to officers (20.8%; 95% CI 20.1, 21.6) compared to those among junior enlisted (38.5%; 95% CI 37.3, 39.6) and mid- or senior enlisted ADSW (36.6%; 95% CI 36.1, 37.0).

ADSW in the Army had the highest prevalence of mental health conditions (37.4%; 95% CI 36.7, 38.1), followed by those in the Navy (36.4%; 95% CI 35.7, 37.2), compared to deliveries among ADSW in the Air Force, Coast Guard, and Marine Corps (range 22.7–31.0%). Those who had never deployed had a higher prevalence of mental health conditions compared to those who had a history of deployment (34.9%; 95% CI 34.4, 35.3 vs. 31.9%; 95% CI 31.2, 32.5), where the definition of deployment was limited to support of post-9/11 operations.

The prevalence of any diagnosed mental health condition increased over time during the perinatal period, from 15.0% (95% CI 14.7, 15.3) in the year prior to pregnancy to 18.4% (95% CI 18.1, 18.7) during pregnancy to 22.0% (95% CI 21.7, 22.4) in the year following pregnancy. Throughout the study cohort, 17.9% (95% CI 17.6, 18.2) of deliveries were to ADSW with 1 diagnosed mental health condition, 10.0% (95% CI 9.7, 10.2) were to ADSW with 2 mental health conditions, and 6.0% (95% CI 5.8, 6.2) were to ADSW with 3 or more mental health conditions. Of those diagnosed with any of the 5 mental health conditions during the study period, 29.4% had at least 2 diagnoses, and 17.7% had 3 or more diagnoses (data not shown).

TABLE 1. Prevalence of Perinatal Mental Health Conditions Among Live Birth Deliveries, Active Component, U.S. Armed Forces, Department of Defense Birth and Infant Health Research Program Data, 2016–2022

	Live Births (n)	Any Mental Health Condition[a]			
		No.	%	95% CI Lower Limit	95% CI Upper Limit
Total	56,371	19,077	33.8	33.5	34.2
Race and ethnicity					
American Indian, Alaska Native	591	192	32.5	28.7	36.3
Asian, non-Hispanic	2,262	606	26.8	25.0	28.6
Black, non-Hispanic	13,709	5,130	37.4	36.6	38.2
Hispanic	10,946	3,535	32.3	31.4	33.2
Multi-racial, non-Hispanic	2,562	878	34.3	32.4	36.1
Native Hawaiian, Pacific Islander	828	195	23.6	20.7	26.4
White, non-Hispanic	24,146	8,086	33.5	32.9	34.1
Unknown	1,327	455	34.3	31.7	36.8
Age, *y*					
<20	468	165	35.3	30.9	40.0
20–24	19,345	7,261	37.5	36.9	38.2
25–29	17,281	5,929	34.3	33.6	35.0
30–34	12,267	3,518	28.7	27.9	29.5
35+	7,010	2,204	31.4	30.4	32.5
Marital status					
Married	43,595	14,176	32.5	32.1	33.0
Unmarried, unknown	12,776	4,901	38.4	37.5	39.2
Military rank					
Junior enlisted	6,872	2,645	38.5	37.3	39.6
Mid-, senior enlisted	38,926	14,230	36.6	36.1	37.0
Officer	10,573	2,202	20.8	20.1	21.6
Service branch					
Army	18,668	6,979	37.4	36.7	38.1
Navy	15,969	5,817	36.4	35.7	37.2
Air Force	16,207	4,685	28.9	28.2	29.6
Marine Corps	4,131	1,279	31.0	30.0	32.4
Coast Guard	1,396	317	22.7	20.5	24.9
Deployment history[b]					
Ever deployed	19,027	6,064	31.9	31.2	32.5
Never deployed	37,344	13,013	34.9	34.4	35.3
Stage of pregnancy					
Pre-pregnancy	56,371	8,444	15.0	14.7	15.3
During pregnancy	56,371	10,376	18.4	18.1	18.7
Postpartum	56,371	12,405	22.0	21.7	22.4
Diagnoses of mental health conditions					
1	56,371	10,085	17.9	17.6	18.2
2	56,371	5,614	10.0	9.7	10.2
3+	56,371	3,378	6.0	5.8	6.2

Abbreviations: No., number; CI, confidence interval; *y*, years.
[a] Composite variable which includes all 5 mental health diagnostic categories (trauma/stressor-related disorders, anxiety/panic disorders, depressive disorders, suicidal ideation/attempt, eating disorders)
[b] Limited to deployments in support of post-9/11 operations, predominately in and around Middle East region.

Prevalence of specific mental health conditions

Throughout the entire study period, the most commonly diagnosed mental health conditions were trauma and stressor-related disorders (23.1%; 95% CI 22.8, 23.5), followed by anxiety and panic disorders (16.9%; 95% CI 16.6, 17.3), depressive disorders (14.6%; 95% CI 14.4, 14.9), suicidal ideation or attempt (1.6%; 95% CI 1.5, 1.7), and eating disorders (0.4%; 95% CI 0.3, 0.4) **(Table 2)**. Similar to the overall prevalence of mental health conditions, when examined by specific diagnostic category, a higher prevalence of all diagnoses was found in deliveries of ADSW who were unmarried, of enlisted rank, in the Army or Navy, or who had never deployed.

For trauma and stressor-related disorders, deliveries to non-Hispanic Black ADSW had the highest prevalence (27.5%; 95% CI 26.7, 28.2) compared to all other racial and ethnic groups (range 17.2–22.8%). By age, the lowest prevalence for trauma and stress-related disorders was in deliveries among ADSW ages 30-34 years (18.5%; 95% CI 17.9, 19.1) compared to all other age groups (range 20.9–26.8%). The highest prevalence of trauma and stressor-related disorders was seen postpartum (14.2%; 95% CI 13.9, 14.5), compared to pre-pregnancy (10.3%; 95% CI 10.1, 10.6) and during pregnancy (9.4%; 95% CI 9.1, 9.6).

For anxiety and panic disorders, the lowest prevalence was found among deliveries to Native Hawaiian or Pacific Islander (8.1%; 95% CI 6.2, 10.0) and non-Hispanic Asian (11.1%; 95% CI 9.8, 12.4) ADSW compared to all other racial or ethnic groups (range 15.8–18.7%). Deliveries to ADSW in the Navy had the highest prevalence (19.2%; 95% CI 16.8, 19.9) compared to all other service branches (range 13.1–17.0%).

For depressive disorders, higher prevalence was found among deliveries to junior enlisted (17.4%; 95% CI 16.5, 18.3) and mid- or senior enlisted ADSW (16.2%; 95% CI 15.8, 16.5) compared to officers (7.3%; 95% CI 6.8, 7.8). The lowest prevalence of depressive disorders was seen pre-pregnancy (4.6%; 95% CI 4.5, 4.8) compared to during pregnancy (8.3%; 95% CI 8.1, 8.6) and postpartum (7.8%; 95% CI 7.6, 8.1).

For suicidal ideation or attempt, junior enlisted ADSW prevalence (3.4%; 95% CI 3.0, 3.8) was 8.5 times the prevalence among officers (0.4%; 95% CI 0.3, 0.5) and 2 times prevalence in mid- and senior enlisted ADSW (1.6%; 95% CI 1.4, 1.7).

For eating disorders, there were no significant differences in prevalence by demographic or military characteristics as well as timeframe.

Discussion

In this study of live-born deliveries among ADSW, 1 in 3 were diagnosed with a mental health condition 1 year prior to pregnancy through 1 year postpartum. Of those diagnosed with a mental health condition, 1 in 4 were diagnosed with a trauma and stressor-related disorder, which existing research has linked to an increase in suicide risk, particularly among women.[9-12] Mental health conditions are also associated with adverse pregnancy outcomes, such as pre-term birth and hypertensive disorders of pregnancy, with highest risk in those with trauma or stressor-related disorders.[13-16] This high prevalence (33.8%) of mental health conditions reveals the potential risk of adverse pregnancy outcomes among ADSW.[14,16,17] To our knowledge, this is the largest study to examine the prevalence of specific mental health conditions before and during the perinatal period among a sample of live births to ADSW.[3]

There is limited research focused on perinatal mental health conditions among ADSW. Abramovitz and colleagues investigated the prevalence of post-traumatic stress disorder (PTSD) (identified by diagnosis codes) among 134,244 pregnant ADSW from 2007 through 2014, utilizing the same data source (BIHR) as the current study. Abramovitz et al. found that 1.7% of ADSW had a diagnosis of PTSD from the year prior to pregnancy through the end of pregnancy.[18] In contrast, this study estimated the prevalence of all trauma or stressor-related disorders, not just PTSD, and found a higher prevalence during pre-pregnancy (10.3%) and pregnancy (9.4%). A recent study of a nationally representative sample in the U.S. found a prevalence of a

trauma or stressor-related disorder during pregnancy of only 0.2%, much lower than reported in this study and existing studies of military populations.[14]

Andriotti and colleagues utilized TRICARE claims data to identify new mental health cases in the 2 years prior to pregnancy, during pregnancy, and 2 years postpartum.[17] Andriotti et al. provided limited details, however, for which mental health conditions were included in their study or which specific diagnosis codes were used to identify mental health cases. As in our study, Andriotti et al. found an increase in the prevalence of mental health conditions in the postpartum period (20%) compared to pregnancy (15%).[17] Globally, the prevalence of perinatal mental health conditions is estimated to be 10% during pregnancy and 13% postpartum, which is lower than that found by Andriotti and colleagues[17] as well as the current study of ADSW.[19]

A U.S. Government Accountability Office (GAO) report of perinatal mental health conditions among TRICARE beneficiaries, 2017–2019, found that 37.8% of ADSW had a diagnosed mental health condition during pregnancy or in the year postpartum.[3] The GAO estimate is higher than this study's estimated 33.8% prevalence, with several methodological differences between the 2 studies. First, the GAO report defined mental health cases by the presence of any mental health ICD-10 code (F01-F99) and only required 1 code, either inpatient or outpatient. The current study limited analysis to 5 categories of mental health conditions defined by the presence of either 1 inpatient ICD-10 code or 2 outpatient ICD-10 codes on separate days. We chose this method to improve reliability of capturing a true diagnosed case versus exclusion or 'rule out' diagnoses. Second, the GAO report only included mental health conditions diagnosed during pregnancy through 1 year postpartum, while this study also included mental health diagnoses in the year prior to pregnancy. Finally, this study only included live-born deliveries, while the GAO report included pregnancy losses and stillbirths. Despite these methodological differences, the results from the GAO report and this study are similar: Both found a higher prevalence of mental health conditions

TABLE 2. Prevalence of Specific Perinatal Mental Health Conditions, Among Live Birth Deliveries, Active Component, U.S. Armed Forces, Department of Defense Birth and Infant Health Research Program Data, 2016–2022

	Total (n)	Trauma, Stressor				Anxiety, Panic				Depression			
		No.	%	95% CI Lower Limit	95% CI Upper Limit	No.	%	95% CI Lower Limit	95% CI Upper Limit	No.	%	95% CI Lower Limit	95% CI Upper Limit
Total	56,371	13,028	23.1	22.8	23.5	9,548	16.9	16.6	17.3	8,251	14.6	14.4	14.9
Race and ethnicity													
American Indian, Alaska Native	591	128	21.7	18.3	25.0	100	16.9	13.9	19.9	87	14.7	11.9	17.6
Asian, non-Hispanic	2,262	428	18.9	17.3	20.5	252	11.1	9.8	12.4	243	10.5	9.5	12.0
Black, non-Hispanic	13,709	3,765	27.5	26.7	28.2	2,167	15.8	15.2	16.4	2,338	17.1	16.4	17.7
Hispanic	10,946	2,475	22.6	21.8	23.4	1,730	15.8	15.1	16.5	1,578	14.4	13.8	15.1
Multi-racial, non-Hispanic	2,562	585	22.8	21.2	24.5	467	18.2	16.7	19.7	407	15.9	14.5	17.3
Native Hawaiian, Pacific Islander	828	142	17.2	14.6	19.7	67	8.1	6.2	10.0	82	9.9	7.9	11.9
White, non-Hispanic	24,146	5,216	21.6	21.1	22.1	4,524	18.7	18.2	19.2	3,331	13.8	13.4	14.2
Unknown	1,327	289	21.8	19.6	24.0	241	18.2	16.1	20.2	185	13.9	12.1	15.8
Age, y													
<20	468	116	24.8	20.9	28.7	68	14.5	11.3	17.7	65	13.9	10.8	17.0
20–24	19,345	5,174	26.8	26.1	27.4	3,420	17.7	17.1	18.2	3,243	16.8	16.2	17.3
25–29	17,281	4,010	23.2	22.6	23.8	3,052	17.7	17.1	18.2	2,551	14.8	14.2	15.3
30–34	12,267	2,264	18.5	17.8	19.1	1,854	15.1	14.5	15.8	1,448	11.8	11.2	12.4
35+	7,010	1,464	20.9	19.9	21.8	1,154	16.5	15.6	17.3	944	13.5	12.7	14.3
Marital status													
Married	43,595	9,516	21.8	21.4	22.2	7,219	16.6	16.2	16.9	5,993	13.8	13.4	14.1
Unmarried, unknown	12,776	3,512	27.5	26.7	28.3	2,329	18.2	17.6	18.9	2,258	17.7	17.0	18.3
Rank													
Junior enlisted	6,872	1,897	27.6	26.6	28.7	1,215	17.7	16.8	18.6	1,195	17.4	16.5	18.3
Mid-, senior enlisted	38,926	9,785	25.1	24.7	25.6	7,227	18.6	18.2	19.0	6,289	16.2	15.8	16.5
Officer	10,573	1,346	12.7	12.1	13.4	1,106	10.5	9.9	11.0	767	7.3	6.8	7.8
Service branch													
Army	18,668	5,088	27.3	26.6	27.9	3,170	17.0	16.4	17.5	2,947	15.8	15.3	16.3
Navy	15,969	3,918	24.5	23.9	25.2	3,073	19.2	18.6	19.9	2,751	17.1	16.6	17.8
Air Force	16,207	2,928	18.1	17.5	18.7	2,515	15.5	15.0	16.1	1,865	11.5	11.0	12.0
Marine Corps	4,131	920	22.3	21.0	23.5	607	14.7	13.6	15.8	554	13.4	12.4	14.5
Coast Guard	1,396	174	12.5	10.7	14.2	183	13.1	11.3	14.9	134	9.6	8.1	11.1
Deployment history[b]													
Ever deployed	19,027	4,077	21.4	20.8	22.0	3,140	16.5	16.0	17.0	2,654	14.0	13.5	14.4
Never deployed	37,344	8,951	24.0	23.5	24.4	6,408	17.2	16.8	17.5	5,597	15.0	14.6	15.4
Stage of pregnancy													
Pre-pregnancy	56,371	5,819	10.3	10.1	10.6	3,074	5.5	5.3	5.6	2,608	4.6	4.5	4.8
During pregnancy	56,371	5,279	9.4	9.1	9.6	5,501	9.8	9.5	10.0	4,703	8.3	8.1	8.6
Postpartum	56,371	7,999	14.2	13.9	14.5	4,961	8.8	8.6	9.0	4,422	7.8	7.6	8.1

Abbreviations: n, number; No., number; CI, confidence interval; y, years.
[a] Frequencies and 95% CIs were not calculated for cells with less than 30.
[b] Limited to deployments in support of post-9/11 operations, predominately in and around Middle East region.

	Suicidal Ideation, Attempt				Eating Disorder			
	No.	%	95% CI Lower Limit	95% CI Upper Limit	No.	%	95% CI Lower Limit	95% CI Upper Limit
Total	879	1.6	1.5	1.7	216	0.4	0.3	0.4
Race and ethnicity								
American Indian, Alaska Native	a	a	a	a	a	a	a	a
Asian, non-Hispanic	a	a	a	a	a	a		a
Black, non-Hispanic	303	2.2	2.0	2.5	43	0.3	0.2	0.4
Hispanic	186	1.7	1.5	1.9	40	0.4	0.3	0.5
Multi-racial, non-Hispanic	34	1.3	0.9	1.8	a	a	a	a
Native Hawaiian, Pacific Islander	a	a	a	a	a	a	a	a
White, non-Hispanic	285	1.2	1.0	1.3	108	0.5	0.4	0.5
Unknown	a	a	a	a	a	a	a	a
Age, *y*								
<20	a	a	a	a	a	a	a	a
20–24	575	3.0	2.7	3.2	89	0.5	0.4	0.6
25–29	191	1.1	1.0	1.3	58	0.3	0.3	0.4
30–34	65	0.5	0.4	0.7	38	0.3	0.2	0.4
35+	38	0.5	0.4	0.7	a	a	a	a
Marital status								
Married	574	1.3	1.2	1.4	151	0.4	0.3	0.4
Unmarried, unknown	305	2.4	2.1	2.7	65	0.5	0.4	0.6
Rank								
Junior enlisted	234	3.4	3.0	3.8	33	0.5	0.3	0.6
Mid-, senior enlisted	607	1.6	1.4	1.7	148	0.4	0.3	0.4
Officer	38	0.4	0.3	0.5	35	0.3	0.2	0.4
Service branch								
Army	429	2.3	2.1	2.5	70	0.4	0.3	0.5
Navy	215	1.4	1.2	1.5	69	0.4	0.3	0.5
Air Force	169	1.0	0.9	1.2	44	0.3	0.2	0.4
Marine Corps	63	1.5	1.1	1.9	28	0.7	0.4	0.9
Coast Guard	a	a	a	a	a	a	a	a
Deployment history[b]								
Ever deployed	196	1.0	0.9	1.2	78	0.4	0.3	0.5
Never deployed	683	1.8	1.7	2.0	138	0.4	0.3	0.4
Stage of pregnancy								
Pre-pregnancy	343	0.6	0.5	0.7	99	0.2	0.1	0.1
During pregnancy	219	0.4	0.3	0.4	97	0.2	0.1	0.2
Postpartum	380	0.7	0.6	0.7	105	0.2	0.2	0.2

Abbreviations: n, number; No., number; CI, confidence interval; *y*, years.
[a] Frequencies and 95% CIs were not calculated for cells with less than 30.
[b] Limited to deployments in support of post-9/11 operations, predominately in and around Middle East region.

in non-Hispanic Black ADSW compared to other racial and ethnic groups, and a higher prevalence among ADSW in the Army and Navy compared to other service branches.

One key difference between the GAO report and this study is that the GAO found a higher prevalence of mental health conditions among ADSW who deployed, while this study found that ADSW who had not deployed had a higher prevalence. To capture deployment history, the GAO report relied on ICD-10 code (Z91.82), while this study obtained deployment data from DMDC limited to deployments in support of post-9/11 operations. This difference in methodology may explain the differing results.

This study also found lower prevalence among Native Hawaiian and Pacific Islander ADSW compared to all other racial and ethnic groups, which conflicts with existing, albeit limited, research.[20,21] This study's population included 1,419 ADSW who identified as American Indian, Alaska Native, Native Hawaiian, or Pacific Islander, which provided a rare opportunity to evaluate perinatal mental health in these historically under-researched populations. Women of those racial and ethnic groups may face unique barriers to care due to living in remote geographic locations, lack of culturally appropriate screening tools, insufficient cultural congruency with health care providers, and other structural factors that increase their risk of poor health outcomes.[20] Those risks may be mitigated by military service, which provides access to health care and stable salaries, both factors that may help explain why rates of perinatal mental health conditions in this study were lower among Native Hawaiian and Pacific Islander ADSW compared to other racial and ethnic groups, including American Indian and Alaska Native service women.

Strengths of this study include the use of a large, population-based dataset of ADSW. All women in this study were employed, with access to health care, which provided a unique opportunity to examine differences in perinatal mental health by socio-demographic characteristics. Another strength of this study is that mental health conditions were evaluated at 3 distinct points in time—from 1 year prior to pregnancy, during pregnancy, and at 1 year postpartum—which allowed assessment of prevalence over time. Lastly, only live-born deliveries were included in this study, in recognition of the singular impact that experiencing a pregnancy loss or stillbirth may have on mental health.

Limitations of this study include the use of medical encounter data, which may be subject to coding accuracy and quality. The ICD-10-CM diagnosis codes utilized to identify mental health conditions have not been validated, but we attempted to improve accuracy of capture through our requirement of 1 inpatient or 2 outpatient diagnoses on separate days. The study observation period (2016–2022) included the COVID-19 pandemic, which may have had impacts on the prevalence and detection of perinatal mental health conditions.[22,23]

Additionally, the prevalence of mental health conditions only reflects those actively seeking care or otherwise engaged in the health care system. Many service members may not seek health care due to stigma, despite access to these resources.[24-26] A recent GAO report[27] found that only 52% of U.S. service women who delivered at a military hospital or clinic received recommended perinatal mental health screenings, increasing risk of under-diagnosis.

The true prevalence of mental health conditions among ADSW before and during the perinatal period is likely much larger than reported in this study. Future research should include prospective screening studies to identify ADSW who are not seeking care for mental health but who may meet diagnostic criteria for a mental health diagnosis. Lastly, these findings are not completely generalizable to all ADSW because those excluded were more likely of younger ages and junior enlisted members, resulting in a study population biased towards slightly older ADSW with more time in service.

This study highlights the prevalence of perinatal mental health conditions among military sub-populations. ADSW have unique mental health *and* reproductive health needs as a result of stressors inherent to military life, including, but not limited to, potential (and sometimes sudden) deployment and engagement in armed conflict.[28,29]

Mental health directly affects physical health. Military service members who are mentally fit are more likely to perform their duties efficiently, enhancing operational readiness. Mental health issues can lead to early returns from deployment, which can affect unit mission and cohesion. Ten percent of all aeromedical evacuations during operations Enduring Freedom, Iraqi Freedom, and New Dawn were due to psychiatric reasons.[30] Service member retention is also linked to mental health, with those experiencing mental health conditions less likely to remain in the military than those not experiencing mental health conditions.[31]

Enhanced screening and targeted management of mental health conditions may be a mechanism to improve service member retention and decrease adverse pregnancy outcomes among this population. Future research should employ qualitative methods to further explain differences in prevalence by demographic factors. Prospective studies are needed to evaluate effective screening practices and interventions for perinatal mental health conditions among ADSW.

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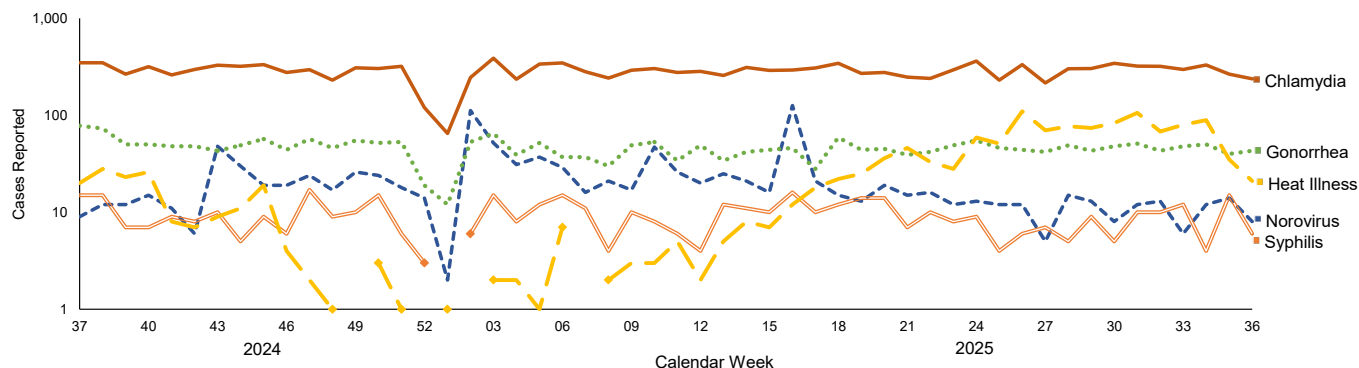
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Reportable Medical Events at Military Health System Facilities Through Week 36, Ending September 6, 2025

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

[a]Cases are shown on a logarithmic scale.

Note: There were 0 reported heat illness cases during weeks 49 and 52 of 2024 and weeks 2 and 7 of 2025. There were 0 reported syphilis cases during week 1 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 (August 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

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

| Reportable Medical Event[b] | Active Component Service Members | | | | | MHS Beneficiaries[d] |
| | August 2025 | July 2025 | YTD 2025 | YTD 2024 | Total 2024 | August 2025 |
	No.	No.	No.	No.	No.	No.
Amebiasis	0	2	13	8	15	0
Arboviral diseases, neuroinvasive, non-neuroinvasive	0	0	1	2	4	0
Babesiosis	1	0	1	0	0	0
Brucellosis	0	0	0	1	1	0
COVID-19-associated hospitalization, death	7	3	30	36	41	37
Campylobacteriosis	29	42	220	229	326	34
Chikungunya virus disease	0	0	0	0	1	0
Chlamydia trachomatis infection	1,279	1,369	10,065	11,057	16,097	164
Cholera, O1, O139	0	0	0	2	3	0
Coccidioidomycosis	2	1	14	42	53	0
Cold weather injury	1	0	280	135	174	N/A
Cryptosporidiosis	5	7	48	62	82	10
Cyclosporiasis	8	7	22	8	11	3
Dengue virus infection	2	0	8	11	12	0
E. coli, Shiga toxin-producing	6	7	47	60	93	5
Ehrlichiosis, anaplasmosis	0	0	1	1	1	3
Giardiasis	12	12	73	69	98	6
Gonorrhea	195	209	1,541	1,931	2,823	20
H. influenzae, invasive	0	0	2	3	3	0
Heat illness[e]	306	360	1,170	1,091	1,276	N/A
Hepatitis A	0	0	1	5	7	1
Hepatitis B, acute, chronic[f]	6	2	51	79	108	5
Hepatitis C, acute, chronic	1	1	15	27	35	3
Influenza-associated hospitalization[g]	1	1	49	38	54	3
Lead poisoning, pediatric[h]	N/A	N/A	N/A	N/A	N/A	4
Legionellosis	0	0	1	4	5	0
Leishmaniasis	0	1	1	0	0	0
Leprosy	0	0	0	1	2	0
Listeriosis	0	0	1	0	0	0
Lyme disease	10	22	76	75	101	14
Malaria	11	5	24	12	21	1
Measles	0	0	0	0	0	1
Meningococcal disease	0	0	1	0	2	0
Mpox	2	1	6	11	14	1
Mumps	0	1	2	0	0	0
Norovirus infection	46	52	844	334	654	55
Pertussis	3	5	36	18	39	4
Q fever	0	0	1	0	3	0
Rabies post-exposure prophylaxis (PEP)	65	65	415	421	637	61
Salmonellosis	17	19	105	98	160	23
Schistosomiasis	0	0	0	0	1	0
Shigellosis	8	1	29	37	53	0
Spotted fever rickettsiosis	3	4	24	17	22	6
Syphilis[i]	43	32	319	429	587	9
Toxic shock syndrome	0	0	0	2	2	0
Trypanosomiasis	0	0	1	2	5	0
Tuberculosis	1	2	7	2	6	0
Tularemia	0	2	2	1	1	0
Typhoid fever	0	0	0	1	1	0
Typhus fever	1	3	6	1	2	0
Varicella	0	3	10	12	18	3
Zika virus infection	0	0	0	1	1	0
Total case counts	2,071	2,241	15,563	16,376	23,655	476

Abbreviations: MHS, Military Health System; YTD, year-to-date; No., number; COVID-19, coronavirus disease 2019; N/A, not applicable; *E, Escherichia*; *H., Haemophilus*.
[a] RMEs submitted to DRSi as of Nov. 18, 2025. RMEs were classified by date of diagnosis or, where unavailable, date of onset. Monthly comparisons are displayed for the period Jul. 1, 2025–Jul. 31, 2025 and Aug. 1, 2025–Aug. 31, 2025. YTD comparison is displayed for the period Jan. 1, 2025–Aug. 31, 2025 for MHS facilities. Previous year counts are provided as: previous YTD, Jan. 1, 2024-Aug. 31, 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 time 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 include individuals classified as retired and family members (including spouse, child, other, unknown). National Guard, reservists, civilians, contractors, and foreign nationals were excluded from these counts.
[e] Only reportable for service members.
[f] Observed 2024 to 2025 decrease in hepatitis B cases may be in part due to updated case validation process.
[g] Influenza-associated hospitalization is reportable only for individuals younger than age 65 years.
[h] Pediatric lead poisoning is reportable only for children ages 6 years or younger.
[i] Observed 2024 to 2025 decline in syphilis cases may be in part due to updated case validation process that began Jan. 2024.