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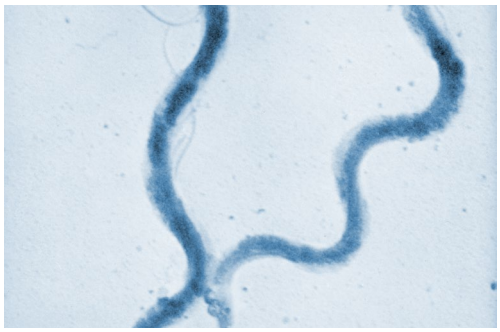
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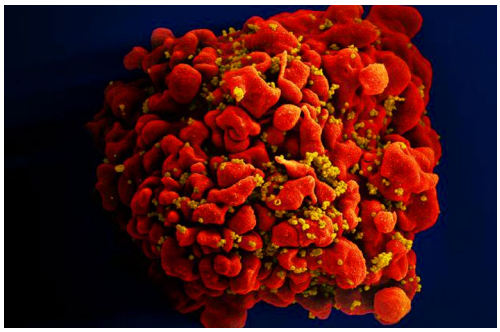
3 *Update:* Sexually Transmitted Infections Among U.S. Active Component Service Members, 2017–2025

This report details annual incidence rates and trends of 5 major STIs, chlamydia, genital human papillomavirus (HPV), genital herpes simplex virus (HSV), gonorrhea, and syphilis, among U.S. active component service members.



13 *Update:* Routine Screening for Antibodies to Human Immunodeficiency Virus in the Active and Reserve Components, U.S. Armed Forces, 2021–2025

This report summarizes numbers and trends of newly identified HIV-antibody seropositivity from 2021 through 2025 among active and reserve component members of the U.S. Armed Forces.



22 Associations Between MHS GENESIS Electronic Health Record Transition and Estimated Medical Personnel on Reporting of Most Frequent Reportable Medical Events, 2016–2023

Jacob D. Smith, MPH; David H. Yun, MD, MPH; Alexis L. Maule, PhD; Grace C. McCrea, MPH; Idalia G. Aguirre, MPH; Kiara D. Scatliffe-Carrion, MPH; Markku Malmi, PhD; John F. Ambrose, PhD, MPH

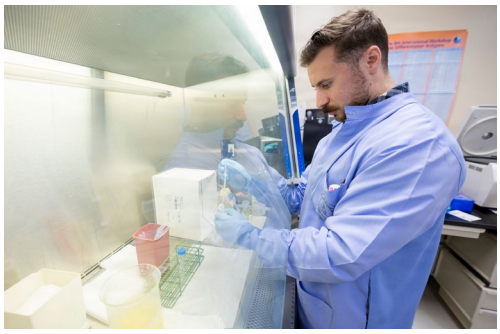
This report examines whether the transition to MHS GENESIS system, which began in 2020, and estimated Military Health System facility medical personnel sizes were associated with timeliness of reporting of reportable medical events.



33 *Brief Report:* End of 2025–2026 Season Influenza Vaccine Effectiveness Estimates Using Routine Surveillance Data for Non-Service Member Beneficiaries of the Military Health System

Bismark Kwaah, MPH; Laurie S. DeMarcus, MPH; Whitney N. Jenkins, MPH, DrPH; Khabira H. Salter, MS, PhD; William E. Gruner, MS, MB(ASCP); Tamara R. Hartless, MPH; Victor K. Heh, PhD; Deanna Muehleman, PhD; Anthony C. Fries, PhD; Fabrice E. Evengue, MPH, DHSc

This report analyzes 2025-2026 end-of-season influenza vaccine effectiveness for Military Health System dependents against symptomatic, laboratory-confirmed influenza, treated in outpatient, or ambulatory care, facilities.



37 *Surveillance Snapshot:* Trends in Tobacco Use and Cessation Counseling Encounters Among U.S. Active Component Service Members, 2018–2025

Kristen R. Rossi, MPH; Scott J. Russell, MPH; Sithembile L. Mabila, PhD, MSc

This data summary describes self-reported tobacco product use in conjunction with trends of coded encounters for tobacco cessation counseling among U.S. active component service members.



Update

Sexually Transmitted Infections Among U.S. Active Component Service Members, 2017–2025

Sexually transmitted infections (STIs) are leading reportable medical events that directly affect the operational readiness and long-term health of active component service members (ACSMs) in the U.S. Armed Forces. This study evaluated annual incidence rates (IRs), distribution patterns, and temporal trends of 5 major STIs—chlamydia, gonorrhea, herpes simplex virus (HSV), human papillomavirus (HPV), and syphilis—among ACSMs from 2017 through 2025. Using medical administrative records, laboratory data, and medical event reports maintained in the Defense Medical Surveillance System (DMSS), incident cases of STIs from January 1, 2017 until December 31, 2025 were identified among ACSMs. Annual IRs were calculated per 100,000 person-years (p-yrs) of active service. Percent changes from historic peak rates and 2024-to-2025 annual changes were analyzed by sex, age, race and ethnicity, and branch of service. Chlamydia was the most frequent STI (n=218,925) during the surveillance period, producing nearly twice as many cases as the other 4 infections combined, with highest IRs in the Army and Marine Corps. Incidence rates for chlamydia, gonorrhea, HSV, and HPV peaked 2017–2019 and declined thereafter, through 2025. By 2025, chlamydia rates had fallen to a 9-year low of 1,318.0 per 100,000 p-yrs—a 47.0% decline from its 2019 peak—with the greatest reductions among personnel under age 25 years. Conversely, total syphilis incidence surged by 72.1%, rising from 52.3 per 100,000 p-yrs in 2017 to a historic high of 89.9 per 100,000 p-yrs in 2025, with particularly high rates in the Navy. Except for genital HPV, which peaked among junior officers and those with more than high school education, rates were highest among junior enlisted personnel (grades E1–E4), non-Hispanic Black service members, and unmarried individuals. Targeted clinical outreach, standardized service-wide screening compliance, and sustained behavioral risk reduction interventions remain vital to mitigating transmission.

What are the new findings?

During the 2017–2025 surveillance period, incidence rates for chlamydia, gonorrhea, genital HSV, and genital HPV among active component service members each declined substantially, with chlamydia and gonorrhea rates dropping to the lowest points of the 9-year surveillance period. In contrast, syphilis incidence surged by 72.1% throughout the force, culminating in historic surveillance highs in 2025 heavily determined by steep increases among service members under age 20 years. While incidence of syphilis remains highest among non-Hispanic Black service members, since 2023 the rate has dropped sharply, while conversely, rates among Hispanic and non-Hispanic White personnel have gradually increased.

What is the impact on readiness and force health protection?

Sexually transmitted infection (STI) incidence remains concentrated among young, junior enlisted, and highly deployable personnel. In addition to increased medical encounters, STIs can result in temporary duty limitations and lost duty time; untreated or recurrent STIs can also cause long-term reproductive morbidity. The recent surge in syphilis, despite an overall decline in reported STI incidence, reveals a force health protection vulnerability with potential readiness consequences.

Sexually transmitted infections (STIs) are among the leading reportable medical events affecting active component service members (ACSMs) of the U.S. Armed Forces.[1] Independent evaluations, including findings from the National Academies of Sciences, Engineering, and Medicine, emphasize that military recruits and active duty personnel warrant focused surveillance due to behavioral, occupational, and demographic factors that elevate STI transmission risk.[2] Within military populations, age and sex are primary sociodemographic markers for increased infection rates.[3] Although the active component of the U.S. Armed Forces is predominantly young (mean age 26 years) and male (~85%), diagnosed STI patterns diverge markedly by sex: Female personnel consistently demonstrate substantially higher reported incidence rates (IRs) for infections such as chlamydia—driven, in part, by targeted routine screening programs—while young male personnel account for the vast majority of overall cases.[3] Adjusting for these demographic characteristics, in addition to differences in screening patterns, is essential when evaluating military incidence against national civilian surveillance data.

The U.S. Centers for Disease Control and Prevention (CDC) and the Defense Health Agency (DHA) independently coordinate surveillance for notifiable bacterial STIs, including *Chlamydia trachomatis* (chlamydia), *Neisseria gonorrhoeae* (gonorrhea), and *Treponema pallidum* (syphilis).[4,5] In military operational environments, these bacterial infections may present dual challenges: acute readiness degradation through lost duty days and medical nondeployability, with potential long-term sequelae such as pelvic inflammatory disease and chronic reproductive morbidity.[6] Compounding these operational concerns, emerging antimicrobial resistance for *N. gonorrhoeae* threatens standard first-line treatment regimens and underscores the need for robust force-wide surveillance.[7,8]

In addition to reportable bacterial infections, viral STIs such as human papillomavirus (HPV) and genital herpes simplex virus (HSV) contribute substantially to the burden among service members.[3] Research indicates that ACSMs experience higher rates of HPV infection than civilians and may be at greater risk for developing HPV-related cancers.[9] CDC and DHA guidelines do not require reporting of viral STIs, however, which makes standardized surveillance challenging. Nonetheless, tracking these trends is vital to evaluate primary prevention initiatives, especially given potentially sub-optimal military HPV vaccination rates.[10,11] Although U.S. Preventive Services Task Force (USPSTF) guidelines recommend cervical cancer screening every 3–5 years, dependent on age,[12] recent research shows compliance among ACSMs has been declining over time.[13]

This report provides new data on the annual IRs, trends, and distribution patterns for 5 major sexually transmitted infections (STIs)—chlamydia, gonorrhea, syphilis, genital HPV, and genital HSV—among ACSMs in the U.S. Armed Forces from January 1, 2017 through December 31, 2025. When interpreting these findings, readers should exercise caution if evaluating the data in comparison with national civilian statistics. The military's unique demographic composition, screening protocols, and health surveillance may artificially elevate case detection compared to the general public. Consequently, direct, unadjusted comparisons to civilian surveillance databases may fail to reflect true relative disease burdens.

Methods

The surveillance population for this report consists of all ACSMs of the U.S. Army, Navy, Air Force, and Marine Corps who served at any time during the surveillance period of January 1, 2017 through December 31, 2025; Space Force personnel are included in Air Force surveillance data. STI diagnoses were ascertained from medical administrative data and reports of notifiable medical events routinely provided to the Armed Forces Health Surveillance Division (AFHSD) for health surveillance and maintained in the Defense Medical Surveillance System (DMSS). STI cases were also derived from positive laboratory test results recorded in the Health Level 7 (HL7) chemistry and microbiology databases compiled by the Defense Centers for Public Health (DCPH)–Portsmouth.

After the days in active service for each service member were ascertained, they were aggregated to a total for all service members for each calendar year. The resultant annual totals are expressed as person-years (p-yrs) of service, used as the denominators for calculating annual IRs. Person-time not considered time at risk for an STI was excluded, such as the 30 days following each incident chlamydia or gonorrhea infection, as well as all person-time following an initial diagnosis, medical event report, or positive laboratory test of HSV, HPV, or syphilis. Incidence rates were calculated as incident cases of a given STI per 100,000 p-yrs of active component service, with percent changes in incidence calculated by unrounded rates.

An incident case of chlamydia was defined by either 1) a case-defining diagnosis **(Table 1)** in the first or second diagnostic position of a record of an outpatient or in-theater medical encounter, 2) a confirmed notifiable disease report, or 3) a positive laboratory test (for any specimen source or test type). An incident case of gonorrhea was similarly defined by 1) a case-defining diagnosis in the first or second diagnostic position of an inpatient, outpatient, or in-theater encounter record, 2) a confirmed notifiable disease report, or 3) a positive laboratory test (for any specimen source or test type). For both chlamydia and gonorrhea, an individual could be counted as having a subsequent case only if more than 30 days occurred between the dates recorded for each case-defining diagnosis.

An incident case of syphilis was defined by either 1) a qualifying International Classification of Diseases, 9th or 10th revision (ICD-9/ICD-10) code in the first, second, or third diagnostic position of a hospitalization record, 2) at least 2 outpatient or in-theater encounters within 30 days with a qualifying ICD-9 or ICD-10

TABLE 1. ICD-9, ICD-10 Diagnostic Codes Used to Identify STI Cases in Electronic Health Care Records, Active Component, U.S. Armed Forces, 2017–2025

STI	ICD-9[a]	ICD-10[a]
Chlamydia	099.41, 099.5*	A56.*
Gonorrhea	098.*	A54.*
Syphilis	091.*, 092.*, 093.*–096.*, 097.0, 097.1, 097.9	A51.* (excluding A51.31), A52.*, A53.0, A53.9
HPV	078.11, 079.4, 795.05, 795.09, 795.15, 795.19, 796.75, 796.79	A63.0, R85.81, R85.82, R87.81, R87.810, R87.811, R87.82, R87.820, R87.821, B97.7
Genital HSV	054.1*	A60.*

Abbreviations: ICD-9, International Classification of Diseases, 9th Revision; ICD-10, International Classification of Diseases, 10th Revision; STI, sexually transmitted infection; HPV, human papillomavirus; HSV, herpes simplex virus.
[a] Asterisk (*) indicates that any subsequent digit or character is included.

code in the first or second position, 3) a confirmed notifiable disease report for any type of syphilis, or 4) a record of a positive polymerase chain reaction (PCR) or treponemal laboratory test. Stages of syphilis (primary, secondary, late, latent) could not be distinguished because HL7 laboratory data do not allow for stage differentiation, and because a high degree of misclassification is associated with use of ICD diagnosis codes for stage determination.[14,15] An individual could be considered an incident case of syphilis only once during the surveillance period; those with evidence of a prior syphilis infection were excluded.

Incident cases of genital HSV were identified by either 1) presence of requisite ICD-9/ICD-10 codes in either the first or second diagnostic positions of an outpatient or in-theater encounter record or 2) a positive laboratory test from a genital specimen source. Antibody tests were excluded because they do not allow distinction between genital and oral infections. Incident cases of genital HPV were similarly identified by either 1) presence of requisite ICD-9/ICD-10 codes in either the first or second diagnostic positions of an outpatient or in-theater encounter record or 2) a positive laboratory test from any specimen source or test type. Outpatient encounters for HPV with evidence of HPV immunization within 7 days, before or after the encounter date, were excluded, as were outpatient encounters with a procedural or Current Procedural Terminology (CPT) code indicating HPV vaccination, since such encounters were potentially related to vaccination administration. An individual could be counted as an incident case of HSV or HPV only once during the surveillance period. Individuals with diagnoses of HSV or HPV infection before the surveillance period were excluded.

To characterize trends during the surveillance period, age- and sex-specific percent changes relative to each group's peak rate were calculated. Recent trends were assessed through annual percentage changes that compare 2025 with 2024. When notable differences in rates or trends were observed, absolute differences in IRs from peak levels were also calculated to identify which age- and sex-specific groups contributed most to the overall decline. Results are presented as age- and sex-specific trends for the entire 2017–2025 surveillance period, and as recent changes from 2024 to 2025, for each STI. Incidence rates are expressed per 100,000 p-yrs.

Results

General incidence and distribution patterns

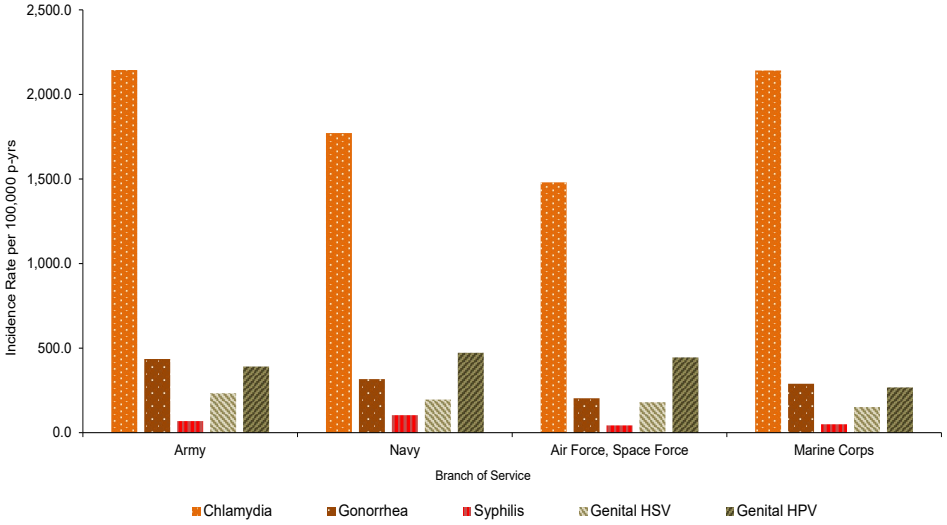
During the 2017–2025 surveillance period, chlamydia was the most common STI among ACSMs, followed in decreasing order of frequency by genital HPV, gonorrhea, genital HSV, and syphilis **(Table 2)**. Chlamydia accounted for the majority of STI cases (n=218,925) during the surveillance period, yielding nearly twice as many cases as the combined total of the other 4 STIs (n=114,700), and nearly 5 times higher than HPV (n=45,810), the next most frequently identified STI. Except for syphilis, overall IRs were higher among female service members than male service members. Unadjusted IRs were more comparable between sexes for gonorrhea than for chlamydia, genital HPV, or genital HSV **(Table 2)**.

Service members ages 20-24 years accounted for the largest proportion of total incident cases, comprising over half of chlamydia (57.6%) and gonorrhea (51.4%) cases, as well as 35–42% of cases for syphilis, genital HSV and genital HPV. Service members ages 25-29 years accounted for the next largest proportion among all 5 infections, comprising approximately 19–27% of STI cases. In contrast to bacterial STIs, which were more concentrated in the youngest cohorts, service members ages 30-34 years accounted for a substantial proportion of overall genital HPV cases (22.5%, n=10,303).

Incidence rates for all 5 STIs were highest among those who had never married (among those with defined marital status) as well as non-Hispanic Black service members. Except for HPV, rates of infection were also highest among individuals with a high school education or less, and among junior enlisted members (grades E1-E4). In contrast, genital HPV revealed a different pattern, with the highest incidence observed among those with education following high school, and among junior officers.

Clear variations in these epidemiological patterns also emerge when stratifying infections by service branch **(Figure 1)**. Chlamydia was the most common STI among all military branches, with overall 9-year IRs ranging from 1,479.9 to 2,143.9 cases per 100,000 person-years **(Figure 1)**. While the Army and Marine Corps consistently evinced the highest rates of

FIGURE 1. Incident Rates of STIs, Active Component, U.S. Armed Forces, 2017–2025



Abbreviations: STIs, sexually transmitted infections; p-yrs, person-years; HSV, herpes simplex virus; HPV, human papillomavirus.

TABLE 2. Incident Counts and Incidence Rates of STIs, Active Component, U.S. Armed Forces, 2017–2025

	Chlamydia		Gonorrhea		Syphilis		Genital HSV		Genital HPV	
	No.	Rate[a]	No.	Rate[a]	No.	Rate[a]	No.	Rate[a]	No.	Rate[a]
Total	218,925	1882.34	38,103	327.20	7,983	68.71	22,804	198.74	45,810	408.06
Service branch										
Army	89,000	2143.93	18,122	435.94	2,850	68.71	9,502	232.28	15,741	391.48
Navy	52,716	1772.00	9,431	316.64	3,075	103.61	5,739	195.58	13,521	472.60
Air Force, Space Force	43,041	1479.86	5,925	203.50	1,264	43.49	5,158	180.07	12,346	445.11
Marine Corps	34,168	2141.09	4,625	289.38	794	49.73	2,405	151.74	4,202	267.51
Sex										
Male	136,182	1414.20	30,286	314.23	6,775	70.46	11,945	125.17	13,873	146.38
Female	82,743	4135.39	7,817	389.50	1,208	60.30	10,859	562.16	31,937	1825.90
Age										
<20	30,936	3722.58	4,095	491.51	938	112.64	1,737	208.68	490	58.81
20–24	125,995	3442.45	19,590	533.97	2,957	80.71	9,549	261.91	16,004	439.98
25–29	42,620	1572.99	8,668	319.58	2,033	75.16	6,017	224.75	12,244	463.86
30–34	12,935	689.67	3,538	188.56	1,149	61.43	2,997	163.05	10,303	584.21
35–39	4,715	334.74	1,520	107.89	552	39.31	1,563	114.28	4,226	328.39
40+	1,724	150.46	692	60.39	354	30.98	941	84.52	2,543	238.63
Race and ethnicity										
White, non-Hispanic	77,035	1232.14	9,406	150.31	2,424	38.79	9,398	152.03	19,992	330.06
Black, non-Hispanic	73,398	3899.41	19,266	1021.15	2,794	148.76	6,924	376.85	10,473	583.06
Hispanic	46,966	2245.66	6,048	288.72	1,861	89.09	4,327	209.32	9,261	457.85
Other, unknown	21,526	1532.48	3,383	240.59	904	64.44	2,155	155.20	6,084	450.55
Rank, grade										
Junior enlisted (E1–E4)	162,091	3289.22	26,072	527.88	5,229	106.06	12,445	253.34	20,736	423.65
Senior enlisted (E5–E9)	47,907	1039.13	9,962	215.93	2,137	46.46	7,771	172.51	16,905	389.28
Junior officer (O1–O3)	7,548	644.20	1,550	132.23	433	37.00	1,841	158.89	5,925	523.52
Senior officer (O4–O10)	819	109.29	357	47.64	138	18.45	549	74.87	1,808	258.85
Warrant officer (W01–W05)	560	327.19	162	94.63	46	26.95	198	119.61	436	274.39
Education										
High school or less	189,687	2584.20	31,636	430.24	5,933	80.86	16,201	222.63	27,059	375.66
Some college	12,675	955.50	2,598	195.73	730	55.16	2,479	192.14	6,003	488.52
Bachelor's, advanced degree	13,851	522.01	3,346	126.06	1,159	43.77	3,672	141.19	11,343	454.69
Other, unknown	2,712	873.97	523	168.45	161	51.98	452	147.47	1,405	468.53
Marital status										
Single	157,126	3020.92	26,463	507.75	5,257	101.09	12,561	242.95	22,349	436.73
Married	48,618	831.86	9,394	160.64	2,249	38.54	7,885	137.26	17,887	320.02
Other, unknown	13,181	2254.33	2,246	383.53	477	81.82	2,358	421.24	5,574	1072.63
Military occupation										
Combat-related[b]	25,671	1645.14	4,697	300.68	713	45.70	2,334	150.81	3,128	203.82
Motor transport	10,652	3139.18	2,007	590.24	504	148.61	913	272.03	1,785	539.10
Pilot, air crew	2,147	519.49	286	69.18	92	22.29	424	103.93	1,139	285.89
Repair, engineering	59,419	1769.31	10,130	301.28	1,708	50.91	5,720	172.27	10,415	318.43
Communications, intelligence	54,192	2189.95	10,367	418.33	1,650	66.78	6,132	252.82	12,897	550.29
Health care	16,334	1654.15	2,858	289.11	658	66.76	2,486	256.96	6,925	751.29
Other	50,510	2022.75	7,758	310.25	2,658	106.51	4,795	194.14	9,521	392.46

Abbreviations: STIs, sexually transmitted infections; HSV, herpes simplex virus; HPV, human papillomavirus; No., number; y, years.
[a] Incidence rate per 100,000 person-years.
[b] Infantry, artillery, combat engineering, armor.

chlamydia and gonorrhea, rates of syphilis were more than twice as high in the Navy versus the Marine Corps and Air Force **(Table 2)**. In contrast, the Air Force and Space Force consistently maintained the lowest overall IRs for chlamydia, gonorrhea, and syphilis.

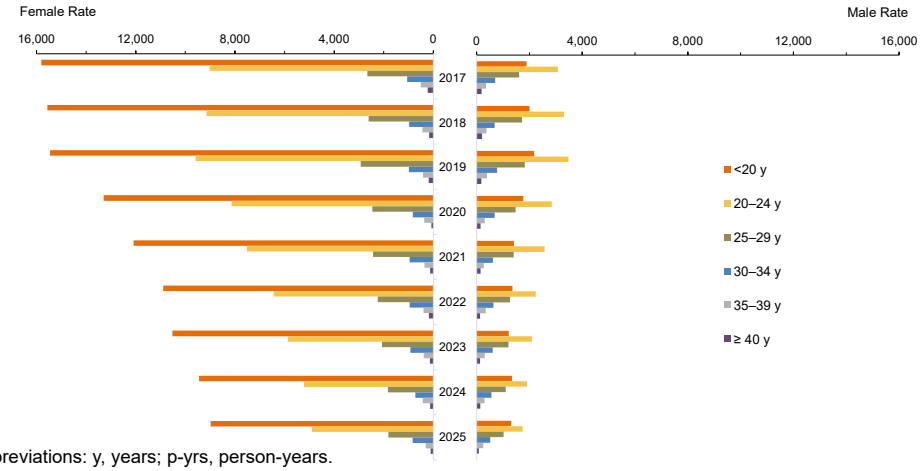
Chlamydia

Age- and sex-stratified trends

Annual chlamydia rates continued to decline in 2025, extending the downward trend observed since 2020 **(Figure 2)**. In 2025, chlamydia incidence fell to its lowest point in 9 years, to 1,318.0 cases per 100,000 p-yrs, a 47.0% decline from the 2019 peak rate of 2,486.1 cases per 100,000 p-yrs. The largest reductions occurred among younger age groups. Among female service members, the overall IR decreased 47.7% from its 2019 peak—a decline of 2,606.2 cases per 100,000 p-yrs to 2,857.6 in 2025—driven by substantial rate drops among service women ages 24 years and younger **(Figure 1)**. Specifically, rates fell by 48.9% (4,684.3 fewer cases per 100,000 p-yrs) in women ages 20-24 years and by 41.9% (6,477.3 fewer cases per 100,000 p-yrs) in those younger than age 20 years compared to 2019. Among male service members, the largest declines from 2019 peaks occurred in the ages 20-24-years group (1,742 fewer cases per 100,000 p-yrs, 50.0% decrease), followed by the younger than age 20 years group (875 fewer cases per 100,000 p-yrs, 40.1% decrease), and the ages 25-29-years group (798 fewer cases per 100,000 p-yrs; 43.8% decrease) (data not shown).

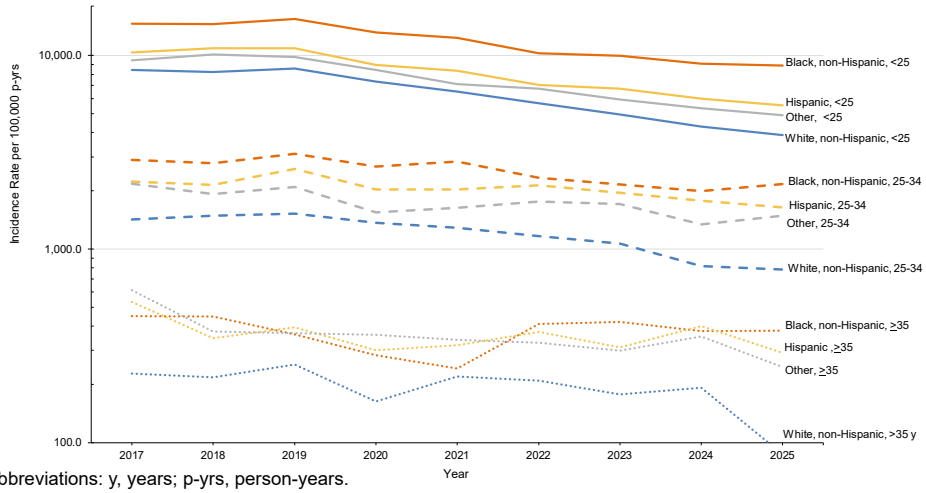
Chlamydia rates among female service members were generally 3 times higher than among male service members throughout the 9-year surveillance period. Among service members younger than age 20 years, female IRs were approximately 7–9 times higher than male rates. Older groups (≥30 years old) accounted for a much smaller share of the total incidence and contributed minimally to overall declines in both sexes. Declines in chlamydia rates were consistent among all racial and ethnic groups **(Figures 3a, 3b)**.

FIGURE 2. Chlamydia Infection Incidence Rates[a] Among Women and Men, by Age, Active Component, U.S. Armed Forces, 2017–2025



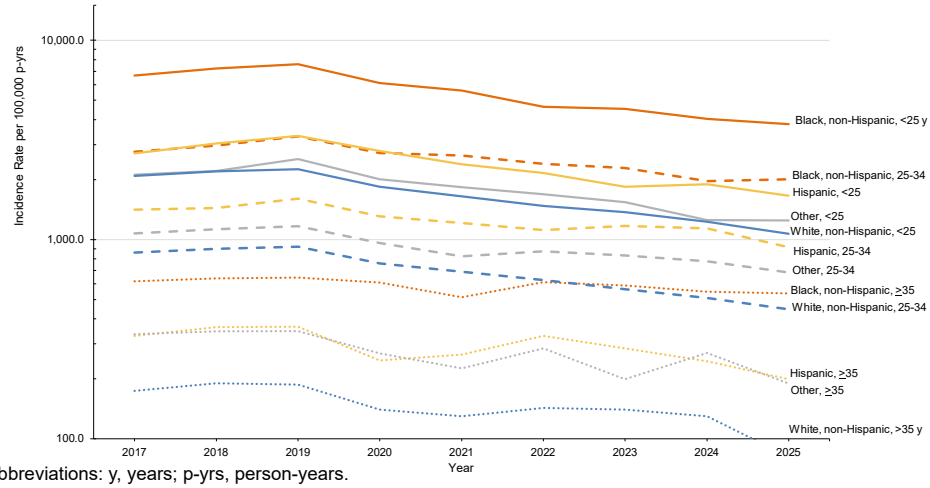
Abbreviations: y, years; p-yrs, person-years.
[a] Incidence rates per 100,000 p-yrs.

FIGURE 3a. Chlamydia Infection Incidence Rates[a] Among Women, by Age and Racial and Ethnic Group, Active Component, U.S. Armed Forces, 2017–2025



Abbreviations: y, years; p-yrs, person-years.
[a] Rates presented on a logarithmic scale.

FIGURE 3b. Chlamydia Infection Incidence Rates[a] Among Men, by Age and Racial and Ethnic Group, Active Component, U.S. Armed Forces, 2017-2025



Abbreviations: y, years; p-yrs, person-years.
[a] Rates presented on a logarithmic scale.

Age- and sex-specific changes in 2025 versus 2024

From 2024 to 2025, chlamydia IRs among female ACSMs declined by 3.0%—from 2,947.2 cases per 100,000 p-yrs to 2,857.6 cases per 100,000 p-yrs—while IRs among males declined by 8.5%, from 1,065.3 cases per 100,000 p-yrs to 974.7 cases per 100,000 p-yrs. Among women, annual declines occurred in most age groups, with the ages 35-39-years group accounting for the largest reduction, 27.3%; from 425.8 to 309.6 cases per 100,000 p-yrs. Annual chlamydia rates increased by 14.8% among women ages 30-34 years, from 727.5 to 835.1 per 100,000 p-yrs. Among men, IRs declined across all age groups from 2024 to 2025, with the largest percentage drop observed among personnel ages 40 years and older, declining 36.8%, from 135.9 to 86.0 cases per 100,000 p-yrs (data not shown).

Gonorrhea

Age- and sex-stratified trends

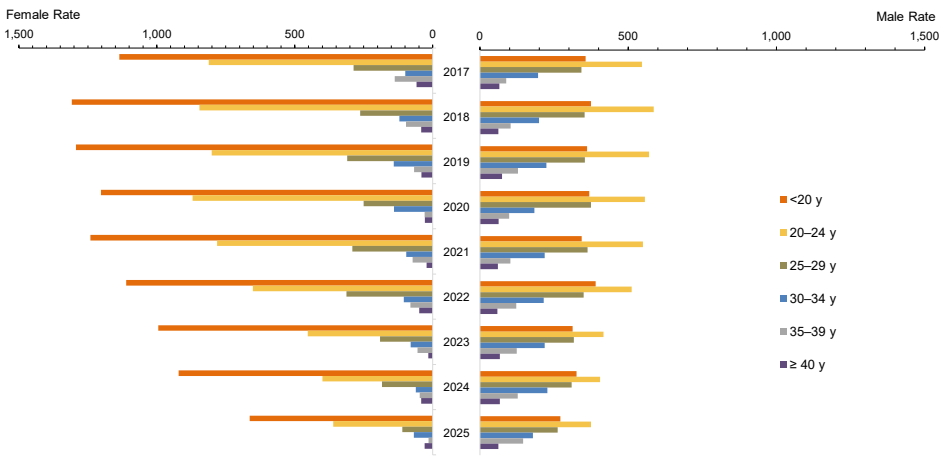
The incidence of gonorrhea peaked in 2018 among female service members (490.9 per 100,000 p-yrs) and in 2019 among male service members (349.0 per 100,000 p-yrs), then declined thereafter through 2025 **(Figure 4)**. The largest reductions in gonorrhea incidence occurred among younger age groups. Among female service members, total unadjusted incidence decreased from 490.9 per 100,000 p-yrs at the 2018 peak to 207.0 per 100,000 p-yrs in 2025 (-57.8%), with women younger than age 25 years accounting for 73.0% of this reduction. Similarly, the total unadjusted incidence among male service members declined from 349.0 per 100,000 p-yrs at the 2019 peak to 246.4 per 100,000 p-yrs in 2025 (-29.4%), with men younger than age 30 years accounting for nearly all (91.0%) of the total decline. Women ages 25 and older (all age groups) also experienced notable declines from their peak rates through 2025—from -50.4% in women ages 40 years and older to -89.3% in those ages 35-39 years—while incidence among men ages 30 years and older remained relatively stable.

As with chlamydia infections, female service members younger than age 20 years evinced the highest gonorrhea incidence, with average rates 3.2 times those of their male counterparts. Among service members aged 30 years and older, sex disparity inverted: Male IRs exceeded female rates most surveillance years (data not shown).

Age- and sex-specific changes in 2025 versus 2024

From 2024 to 2025, gonorrhea incidence among service women declined 19.3% (256.5 to 207.0 per 100,000 p-yrs), with the largest decrease (-68.6%) among the 35-39-years age group. The total rate among service men declined 10.9%, with no notable changes in age-stratified rates (data not shown).

FIGURE 4. Gonorrhea Infection Incidence Rates[a] Among Women and Men, by Age, Active Component, U.S. Armed Forces, 2017–2025



Abbreviations: y, years; p-yrs, person-years.
[a] Incidence rates per 100,000 p-yrs.

Syphilis

Age- and sex-stratified trends

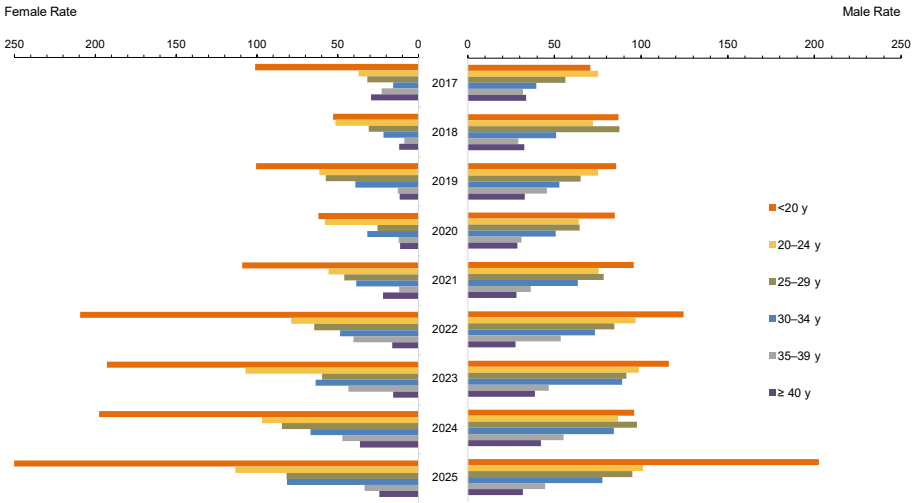
Total syphilis incidence rose 72.1% over the surveillance period, from 52.3 per 100,000 p-yrs in 2017 to 89.9 per 100,000 p-yrs in 2025, with the sharpest single-year rise in 2025 **(Figure 5)**. Between 2020 and 2025, the syphilis IR among female service members more than doubled, surpassing the rate among male service members in 2024 **(Figure 6)**. The steepest increase among service women was observed in the younger than age 20-years group, among whom incidence rose about 5.6-fold, from a low of 52.7 per 100,000 p-yrs in 2018 to 292.8 cases per 100,000 p-yrs in 2025.

Syphilis incidence among service men younger than age 20 years reached an intermediate peak of 124.4 per 100,000 p-yrs in 2022 before rising to a surveillance period high in 2025 of 202.5 per 100,000 p-yrs, a 2.9-fold increase from the 2017 low of 70.5 per 100,000 p-yrs. Men ages 20-24 years experienced a smaller (1.3-fold) increase from 2017 to 2025, while IRs among men ages 25-34 years increased 1.7–2.0-fold. Conversely, male service members ages 40 years and older experienced an overall decline in syphilis incidence, from 33.5 to 31.8 per 100,000 p-yrs, 2017 through 2025 (data not shown).

Syphilis burden was highest among non-Hispanic Black service members, who evinced IRs 3.1–5 times greater than non-Hispanic White ACSMs, who had lowest incidence. Non-Hispanic Black men younger than age 25 years accounted for a disproportionate number of syphilis cases, and had the highest IRs, which peaked in 2023 at 272.5 per 100,000 p-yrs and declined to 232.9 (-14.5% decrease) per 100,000 p-yrs in 2025. Rates among non-Hispanic Black women younger than age 25 years peaked at 197.3 per 100,000 p-yrs in 2023 and declined to 189.3 (4.1% decrease) per 100,000 p-yrs in 2025.

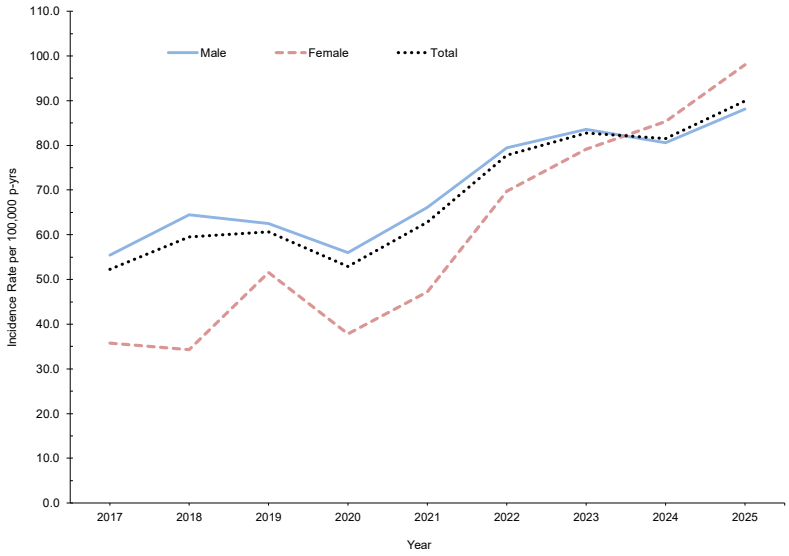
Other demographic groups demonstrated notable relative increases. Among non-Hispanic White women younger than age 25 years, incidence increased 2.6-fold, from 46.8 per 100,000 p-yrs in 2017 to 123.1 per 100,000 p-yrs in 2025. Among Hispanic women ages 25-34 years, syphilis incidence rose 6.5-fold over the same period, from 14.9 per 100,000 p-yrs to 97.1 per 100,000 p-yrs in 2025 (data not shown).

FIGURE 5. Syphilis Infection Incidence Rates[a] Among Women and Men, by Age, Active Component, U.S. Armed Forces, 2017–2025



Abbreviations: y, years; p-yrs, person-years.
[a] Incidence rates per 100,000 p-yrs.

FIGURE 6. Syphilis Infection Incidence Rates by Sex, Active Component, U.S. Armed Forces, 2017–2025



Abbreviations: y, years; p-yrs, person-years.

Age- and sex-specific changes in 2025 versus 2024

Changes in syphilis rates in 2025 compared to 2024 diverged by sex. From 2024 to 2025, syphilis incidence among female service members rose by 14.9% (from 85.3 per 100,000 p-yrs to 98.0 per 100,000 p-yrs) and by 9.3% among male service members (from 80.6 to 88.1 per 100,000 p-yrs). Annual IR increases among female service members were concentrated in the younger than age 20-years (+48.2%), 20-24-years (+17.2%), and 30-34-years (+21.9%) groups. Among male service members, annual IR increases were primarily driven by younger age groups, notably in those younger than age 20 years (+110.7%, from 96.1 to 202.5 per 100,000 p-yrs) and ages 20-24 years (+16.7%, from 86.7 to 101.1 per 100,000 p-yrs) (data not shown).

Genital human papillomavirus

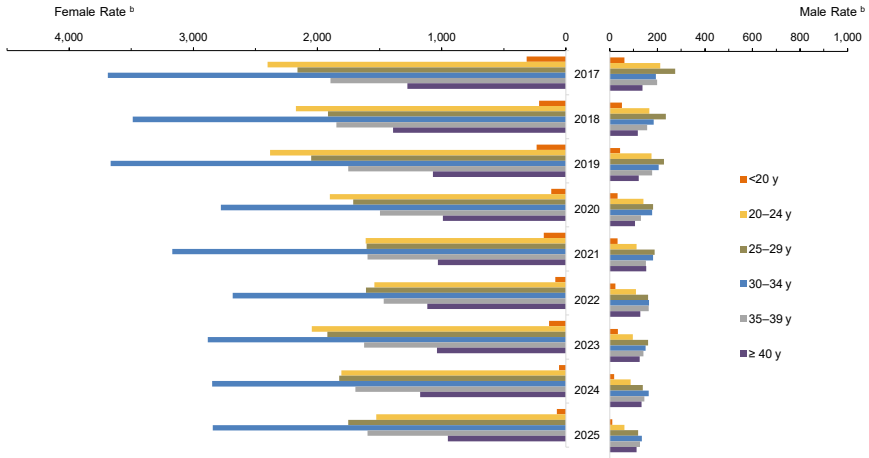
Age- and sex-stratified trends

Annual IRs of genital HPV cases among all ACSMs decreased by 28.1% during the surveillance period, declining from 487.7 cases per 100,000 p-yrs in 2017 to 350.7 cases per 100,000 p-yrs in 2025. During this period, HPV infection rates among female service members fluctuated substantially compared to their male counterparts, within an overall decreasing trend, whereas IRs of HPV among service men demonstrated a steady and gradual decline. On average, the HPV infection rate among female service members was 13 times higher than the infection rate of their male counterparts **(Figure 7)**.

Incidence of HPV among female service members peaked at 2,168.3 per 100,000 p-yrs in 2017, then decreased 25.3% to 1,620.1 cases per 100,000 p-yrs in 2025, with a low of 1,584.0 per 100,000 p-yrs in 2022. Service women younger than age 20 years had the largest reduction (-76.8%) in genital HPV, from 315.3 per 100,000 p-yrs in 2017 to 73.1 per 100,000 p-yrs in 2025. Declines in older age groups were modest, ranging 16–36%. Among women ages 30-34 years—the female age group with the largest detection rate of HPV—incidence of HPV decreased by 23%, from 3,687.4 to 2,843.8 cases per 100,000 p-yrs, from 2017 to 2025 (data not shown).

Among male service members, the IR of HPV peaked at 203.2 cases per 100,000 p-yrs in 2017, then declining to a low of 97.3 cases per 100,000 p-yrs (-52.1%) in 2025 **(Figure 7)**. Declines among service men of most age groups were pronounced from their peak levels. The magnitude of reduction progressively decreased with increasing age, with the greatest decline observed in men younger than age 20 years (-84.0%; from 61.7 in 2017 to 9.9 per 100,000 p-yrs in 2025), followed by those ages 20-24 years (-70.9%; from 212.7 in 2017 to 61.9 in 2025) and ages 25-29 years (-56.7%; from 274.4 in 2017 to 118.9 in 2025). Older groups of male service members experienced more gradual declines, with men ages 30-39 years experiencing an average 33% decrease over the entire surveillance period, and men ages 40 years and older remaining largely stable, declining by 17.5% from 137.2 in 2017 to 113.1 in 2025 (data not shown).

FIGURE 7. Genital HPV Infection Incidence Rates[a] Among Women and Men, by Age, Active Component, U.S. Armed Forces, 2017–2025



Abbreviations: HPV, human papillomavirus; *y*, years; p-yrs, person-years.
[a] Incidence rates per 100,000 p-yrs.
[b] Axis bounds are sex-specific.

Age- and sex-specific changes in 2025 versus 2024

Among female service members, HPV IRs declined in all age groups except those younger than age 20 years (among whom the rate rose by 35.8%, from 53.8 to 73.1 per 100,000 from 2024 to 2025). The largest relative percent reduction in IRs, 19.0%, occurred among female service members ages 40 years and older, from 1,174.1 to 951.2 per 100,000 p-yrs. Among male service members, the younger than age 20-years group declined from 18.3 in 2024 to 9.9 in 2025 (-46%), followed by the ages 20-24-years and ages 25-29-years groups, with decreases of 29.6% and 14.4%, respectively (data not shown).

Genital herpes simplex virus

Age- and sex-stratified trends

From 2017 to 2025, genital HSV incidence among all ACSMs fell 43.6%, from 261.01 to 147.11 per 100,000 p-yrs. HSV infections among female service members decreased substantially, whereas infections among male service members declined relatively gradually. Total female incidence fell 48.3%, from 761.4 cases per 100,000 p-yrs in 2017 to 393.6 cases per 100,000 p-yrs in 2025, with the largest relative decline among women younger than age 20 years (-53.0%, from 1,101.60 to 518.27 per 100,000 p-yrs). Male incidence decreased by 44.2%, from 167.5 per 100,000 p-yrs in 2017 to 93.4 cases per 100,000 p-yrs in 2025, with the largest relative decline in the ages 20-24 years group (-54.6%, from 212.22 to 96.31 per 100,000 p-yrs) **(Figure 8)**.

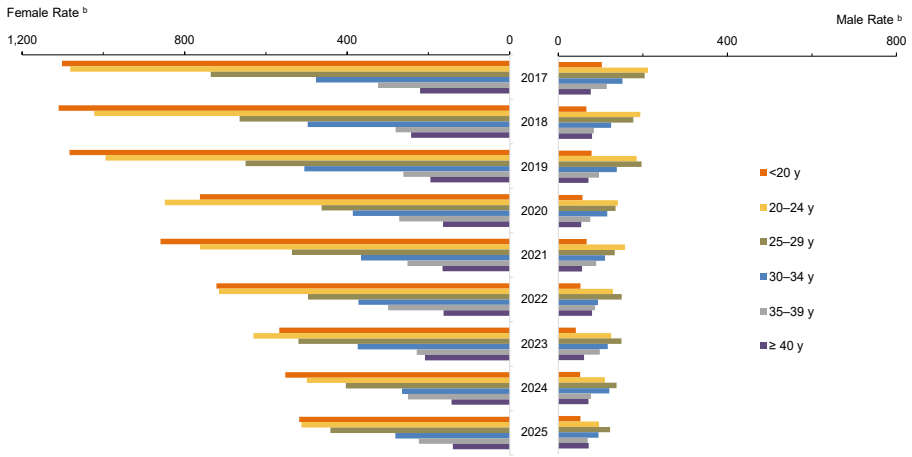
The female-to-male IR ratio was highest among junior personnel: The HSV IR among service women younger than age 20 years was roughly 12.8 times higher than the HSV IR of their male counterparts. This rate disparity narrowed progressively with increasing age, falling to 5.2 times higher among personnel ages 20-24 years and 2.7 times higher among those ages 40 years and older (data not shown).

Age- and sex-specific changes in 2025 versus 2024

Incidence patterns of HSV from 2024 to 2025 differed by sex. Total IRs among women rose by approximately 3%, from 382.5 to 393.6 per 100,000 p-yrs; IRs decreased among women younger than age 20 years (-6.1%, from 552.1 to 518.3 per 100,000 p-yrs), ages 35-39 years (-10.7%, from 250.4 to 223.53 per 100,000 p-yrs), and ages 40 years and older (-2.3%, from 143.4 to 140.1 per 100,000 p-yrs), meanwhile, IRs increased among women ages 20-24 years (+2.6%, from 499.3 to 512.2 per 100,000 p-yrs), ages 25-29 years (+9.5%, 402.9 to 441.1 per 100,000 p-yrs), and ages 30-34 years (+6.2%, 264.7 to 281.2 per 100,000 p-yrs).

In contrast to HSV patterns among service women, the IRs of HSV among service men decreased by 12.2%, from 106.4 to 93.4 per 100,000 p-yrs, from 2024 to 2025. Reductions in HSV among service men were observed in nearly all age groups, but rates among men younger than age 20 years, while remaining essentially unchanged, increased marginally (from 51.8 to 52.3 per 100,000 p-yrs), as well as among men ages 40 years and older (from 71.4 to 72.1 per 100,000 p-yrs) (data not shown).

FIGURE 8. Genital HSV Infection Incidence Rates[a] Among Women and Men by Age Group, Active Component, U.S. Armed Forces, 2017–2025



Abbreviations: HSV, herpes simplex virus; y, years; p-yrs, person-years.
[a] Incidence rates per 100,000 p-yrs.
[b] Axis bounds are sex-specific.

Discussion

During the 2017–2025 surveillance period, STI trends in the U.S. Armed Forces diverged noticeably, with IRs of chlamydia, gonorrhea, genital HSV, and genital HPV declining substantially from their 2017–2019 peaks. Chlamydia infections declined to their lowest rate in 9 years. Conversely, the syphilis IR escalated by 72.1% throughout the total force and more than doubled among active component females from 2020 to 2025. Demographic disparities remained consistent throughout the surveillance period, with the highest burdens for most monitored infections among junior enlisted personnel (E1–E4), service members with a high school education or less, and non-Hispanic Black personnel.

The widespread declines in chlamydia, gonorrhea, and viral STIs were largely influenced by younger age groups, particularly service members ages 24 years and younger. Mandatory annual chlamydia screening for active duty women younger than age 25 years facilitates early case detection and prompt therapy.[16] Recent research has evidenced rapid clinical management among active duty personnel, with mean time to treatment shown to be 3.5 days for chlamydia and 5.0 days for gonorrhea, within the therapeutic period for prevention of long-term clinical sequelae.[17] Nevertheless, demographic differences in treatment intervals persist, with longer delays observed among men, individuals ages 25-34 years, and Army personnel.[17]

Variations in clinical screening protocols also explain distinct sex- and age patterns of infections. Universal screening mandates among junior female personnel account for chlamydia rates among women that substantially exceed those of their male peers.[16] In older cohorts, however, the pattern is inverted for gonorrhea, with rates among men ages 30 years and older surpassing those of women, as female testing shifts from universal annual screening to risk-based evaluation. Among viral infections, genital HPV rates decreased by 28.1% overall, led by notable reductions among personnel younger than age 20 years. The trend was evident in both young women and young men, with male personnel maintaining not only low baseline incidence but a gradual, continuous decrease. These sustained improvements may reflect the population benefit of multivalent HPV vaccination administered prior to military service. Concurrently, genital HSV incidence dropped by 43.6%, although women younger than age 20 years continue to experience substantially higher initial HSV rates than young men before sex ratios converge in older cohorts. Concurrent decreases in cervical cancer screening compliance among eligible service women, however, pose a potential threat to sustained detection of high-risk HPV and precancerous cervical dysplasia.[18]

Comparisons of service branches reveal distinct operational and demographic patterns. The Army and Marine Corps had the highest IRs of chlamydia, while the Navy had the highest rates of genital HPV as well as elevated syphilis rates. Conversely, the Air Force and Space Force maintained lowest bacterial infection incidence. These variations may reflect differences in service age structure, gender distribution, occupational specialties, and operational deployment tempos. Despite overall improvements, diagnostic gaps have been noted in the literature, particularly for extragenital screening. Although national guidelines recommend annual pharyngeal and rectal testing for high-risk populations, including men who have sex with men and personnel with HIV,[19] these protocols remain under-utilized in military primary health care. In an evaluation of active duty Air Force members with incident HIV diagnoses, primary care providers performed extragenital screening in only 3% of eligible patients, leaving 32% with undetected STIs—nearly 80% of which were localized to rectal or pharyngeal sites.[20] Expanded adoption of anatomical site-specific testing can detect asymptomatic extragenital reservoirs that standard urine-based screenings overlook.[19,20]

The continuous rise in syphilis represents the most pressing clinical and readiness concern identified. The 72.1% surge in syphilis infections during the surveillance period was characterized by escalations among younger service members, including a 5.6-fold rise among women younger than age 20 years and a 2.9-fold increase among men of the same age group, with disproportionate effects among non-Hispanic Black service members and Navy personnel. This surge concurs with civilian trends documented by the U.S. Healthy People 2030 initiative, which classifies female primary and secondary syphilis reduction as an unmet objective.[21] In military populations, this increase has serious implications for reproductive readiness as well as maternal and infant health. Health surveillance of Military Health System (MHS) beneficiaries from 2012 to 2022 documented a 233% increase in maternal syphilis and a 355% increase in congenital syphilis.[22] While those estimates were based on administrative coding for maternal syphilis, which displays moderate positive predictive value (59%) due to historical or precautionary billing, congenital diagnoses demonstrate high diagnostic validity (91%), confirming true increases in active disease transmission.[22]

Behavioral data from the Department of Defense Health Related Behaviors Survey provides essential context for these transmission patterns. In the most recently published data from the 2018 survey, 19.3% of active component respondents reported 2 or more sexual partners in the preceding year, and 34.9% reported condomless sex with a new partner.[23] While analysis and publication of the 2024 survey dataset are pending, these baseline metrics highlight persistent exposure risks, particularly among junior personnel adapting to military life.[23]

Several limitations affect these STI analyses. First, IR fluctuations may partially reflect temporal changes in case detection and screening density rather than true shifts in disease burden. Second, diagnostic coding errors may bias incidence estimates; misclassification of exclusion or "rule-out" visits or vaccinations (e.g., HPV) as active infections over-estimates incidence, while relying on general symptom codes (e.g., urethritis) instead of pathogen-specific codes under-estimates incidence. Third, this report likely under-estimates the true STI burden due to the fact that data from non-reimbursed civilian clinics, deployed settings (e.g., shipboard, battalion aid stations, in-theater), and civilian care laboratory tests were not captured.

Cases of syphilis, genital HSV, and genital HPV infections based solely upon laboratory test results are considered 'suspect' because laboratory results cannot distinguish between active and chronic infections. Because incident cases of syphilis, genital HSV, and genital HPV were identified based upon a first qualifying encounter or laboratory result, it is likely most cases were acute and not chronic.

The 2017–2025 surveillance period for STI incidence in the U.S. Armed Forces reveals divergent trajectories. The substantial, multi-year declines in chlamydia, gonorrhea, genital HSV and genital HPV are countered by an unprecedented 72.1% surge in syphilis incidence. Because STIs remain heavily concentrated among junior enlisted personnel and unmarried service members, disease prevention directly affects operational deployability and total force fitness.

Acknowledgment

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Disclaimers

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

The editors disclose use of an artificial intelligence (AI) language model in the preparation of this report. Assistance was provided by Gemini Enterprise, a large language model from Google optimized specifically for Department of War mission support within an Impact Level 5 (IL5) environment. This AI application was used to assist with initial drafts of the discussion to refine prose for clarity. MSMR *editors directed all AI review and analysis, with subsequent editorial staff review and edits. The editors assert full responsibility for the accuracy and integrity of the final content.*

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Update

Routine Screening for Antibodies to Human Immunodeficiency Virus in the Active and Reserve Components, U.S. Armed Forces, 2021–2025

This report provides an annual surveillance update through 2025 on routine screening results for antibodies to the human immunodeficiency virus (HIV) among members of the U.S. Armed Forces. Approximately 6.1 million active, guard, and reserve component personnel were tested for HIV antibody seropositivity from 2021 through 2025, resulting in 1,365 incident diagnoses and an overall seropositivity rate of 0.22 per 1,000 individuals tested. Incident cases remained concentrated among male service members (97.5%) and individuals under age 35 years (85.3%). In 2025, the highest rate overall was observed in the Army Reserve (0.51 per 1,000 tested), followed by the Navy active component (0.33 per 1,000 tested) and Army National Guard (0.32 per 1,000 tested). The lowest active component rates were documented in the Air Force (0.12 per 1,000 tested) and Coast Guard (0.11 per 1,000 tested). In 2025, 68.7% of active duty soldiers and 77.9% of active duty sailors diagnosed with HIV from 2021 through 2025 remained in military service, demonstrating the impact of updated retention policies.

What are the new findings?

From 2021 through 2025, approximately 6.1 million U.S. service members were screened for HIV, identifying 1,365 new infections, with a stable overall seropositivity rate of 0.22 per 1,000 tested. In 2025, the highest rate was documented in the Army Reserve, at 0.51 per 1,000, while career longevity reached historic levels as updated retention policies preserved a majority of diagnosed service members on active and reserve duty.

What is the impact on readiness and force health protection?

The HIV antibody screening program remains an important element of U.S. military force health protection, particularly for men younger than age 35 years, in all service branches and components. The retention of HIV-positive service members reflects changes in U.S. Department of War policies that allow service members who are asymptomatic and have undetectable viral loads to serve without restrictions.

The U.S. Department of War (DOW) has conducted an active surveillance program for the human immunodeficiency virus (HIV) since 1986. All service members of the active component, National Guard, and reserve component are screened at specific points in time: prior to entry (all accessions must be HIV-negative prior to start of service), before deployment or any change in status (e.g., change in component, between branches, commissioning), and once every 2 years while a member of the U.S. military.[1]

From 1990 through 2024, more than 46 million tests for HIV antibodies were conducted among members of the U.S. Armed Forces, resulting in identification of 11,280 HIV new diagnoses (24.3 per 100,000 persons tested). As initial control efforts prohibited HIV-positive individuals from military accession or service, rates of HIV diagnoses dropped precipitously during the first decade of screening, but the rate has remained stable for the last 2 decades.[2]

Infection with HIV remains a disqualifying diagnosis for entry into U.S. military service, but in June 2022, the then-Department of Defense (DOD) amended policies to prevent HIV-positive service members with an undetectable viral load from being discharged or separated solely on the basis of HIV status.[1] In addition, HIV-positive personnel are not non-deployable solely for a positive status, as decisions related to deployability are made individually, justified by a service member's ability to perform assigned duties.[3]

Summaries of HIV seropositivity for members of the U.S. military have been published in *MSMR* since 1995. This report summarizes numbers and trends of newly identified HIV-antibody seropositivity from January 1, 2021 through December 31, 2025 among active and reserve component members of 5 services of the U.S. Armed Forces, in addition to the Army and Air Force National Guard.

Methods

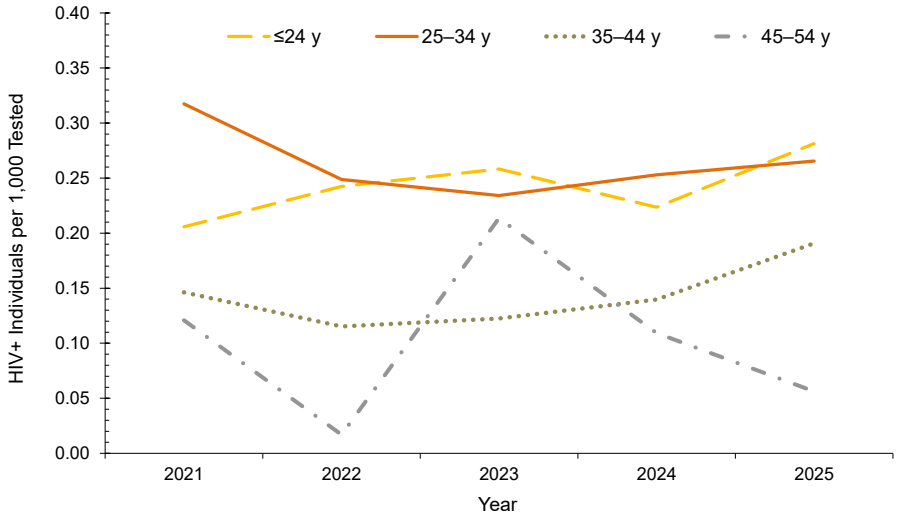
The surveillance population included all individuals eligible for HIV antibody screening from January 1, 2021 through December 31, 2025, while serving in the active and reserve components of the U.S. Army, Navy, Air Force, Marine Corps, and Coast Guard; Space Force members were categorized as Air Force personnel for this

analysis. Testing records from U.S. military medical testing programs, including records of initial HIV-antibody detection, were identified using Department of War Serum Repository (DOWSR) specimen records accessioned in the Defense Medical Surveillance System (DMSS).

An incident case of HIV-antibody seropositivity was defined as an individual with positive HIV test results on 2 different, serial specimens. Individuals who had just 1 positive result without a subsequent negative result were also defined as positive, to capture those who had yet to test positive a second time. The total number of HIV-positive tests was acquired from DMSS to calculate seropositivity rates as a standardized methodology for all services.

Annual rates of HIV seropositivity among service members were calculated by dividing the number of new incident cases of HIV-antibody seropositivity during each calendar year by the number of individuals tested at least once during the relevant calendar year. Rates were further stratified by branch of service, component, and sex. Overall rates by age category were calculated for all services for the complete annual years 2021 through 2025.

FIGURE 1. HIV Antibody Seropositivity Rates by Age [a], U.S. Armed Forces [b], 2021–2025



Abbreviations: HIV, human immunodeficiency virus; +, positive; y, years.
* A total of 124 individuals were excluded from age-stratified rate analysis due to missing dates of birth.
[a] Rates are not represented for service members ages 55 years and older due to rate instability; only 5 service members of this age group were identified as HIV+ 2021–2025.
[b] Includes all components (active, Guard, reserve) of Army, Navy, Air Force, Marine Corps, and Coast Guard personnel.

Results

From 2021 through 2025, approximately 6.1 million service members (active component, Guard, reserve) were tested for antibodies to HIV; 1,365 were identified as HIV-antibody-positive (seropositivity 0.22 per 1,000 tested) (data not shown). The male rate (0.27 per 1,000 tested) persisted above the female rate (0.03 per 1,000 tested) throughout the surveillance period, as only 34 women were identified as newly HIV-antibody-positive during that time. Age-specific HIV seropositivity rates are presented for complete annual years in **Figure 1.** In 2025, the highest HIV seropositivity rate was observed among service members ages 24 years and younger, followed by those ages 25-34 years. This continues a trend seen since 2021, where these 2 age groups have consistently reported the highest rates, often alternating for the leading position. In 2023, the seropositivity rate for service members ages 45-54 years increased to 0.21 per 1,000 tested, corresponding to an increase from 1 HIV seropositive case identified in 2022 to 12 cases in 2023 (data not shown).

U.S. Army, active component

In 2025, a total of 278,097 U.S. Army active component soldiers were tested for HIV antibodies; 60 were identified as HIV-antibody-positive (seropositivity 0.22 per 1,000 tested) **(Table 1)**. During the surveillance period, annual seropositivity rates fluctuated between a low of 0.16 per 1,000 tested in 2024 and a high of 0.28 per 1,000 tested in 2021 **(Table 1, Figure 2)**. Annual seropositivity rates for male active component soldiers were considerably higher than the seropositivity rates of female active component soldiers **(Figure 2)**. On average, 1 new HIV infection was detected per 5,383 screening tests among active component soldiers in 2025 **(Table 1)**. Of the 355 active component soldiers diagnosed with HIV infection since 2021, 244 (68.7%) were still in military service in 2025.

Army National Guard

In 2025, a total of 185,301 U.S. Army National Guard members were tested for HIV antibodies; 59 were identified as HIV-antibody-positive (seropositivity 0.32 per 1,000 tested) **(Table 2)**. On average, 1 new HIV infection per 3,486 screening tests was detected among National Guard soldiers in 2025. Of the 260 National Guard soldiers diagnosed with HIV infection since 2021, 203 (78.1%) were still in service in 2025.

Army Reserve

In 2025, a total of 66,839 U.S. Army Reserve members were tested for HIV antibodies; 34 were identified as HIV-antibody-positive (seropositivity 0.51 per 1,000 tested) **(Table 3)**. On average, 1 new HIV infection per 2,214 screening tests was detected among Army reservists in 2025. Of the 146 Army reservists diagnosed with HIV infection since 2021, 113 (77.4%) were still in service in 2025.

U.S. Navy, active component

A total of 173,291 members of the U.S. Navy active component were tested for HIV antibodies in 2025; 57 were identified as HIV-antibody-positive (seropositivity 0.33 per 1,000 tested), marking the service branch's highest seropositivity rate since 2021 **(Table 4, Figure 3)**. Annual seropositivity rates for male active component sailors were considerably higher

TABLE 1. New Diagnoses of HIV Infection, by Sex, Active Component, U.S. Army, 2021–2025

Year	Total HIV Tests	Total Persons Tested	Males Tested	Females Tested	Total New HIV +	New HIV + Males	New HIV + Females	Overall Rate per 1,000 Tested	Male Rate per 1,000 Tested	Female Rate per 1,000 Tested	HIV+ in Military Service in 2025
2021	403,580	323,390	270,761	52,629	90	89	1	0.28	0.33	0.02	39
2022	373,903	306,620	256,624	49,996	74	72	2	0.24	0.28	0.04	45
2023	374,673	303,652	254,104	49,548	83	79	4	0.27	0.31	0.08	59
2024	378,309	303,633	251,863	51,770	48	47	1	0.16	0.19	0.02	41
2025	322,980	278,097	230,180	47,917	60	60	0	0.22	0.26	0	60
Total	1,853,445	1,515,392	1,263,532	251,860	355	347	8	0.23	0.27	0.03	244

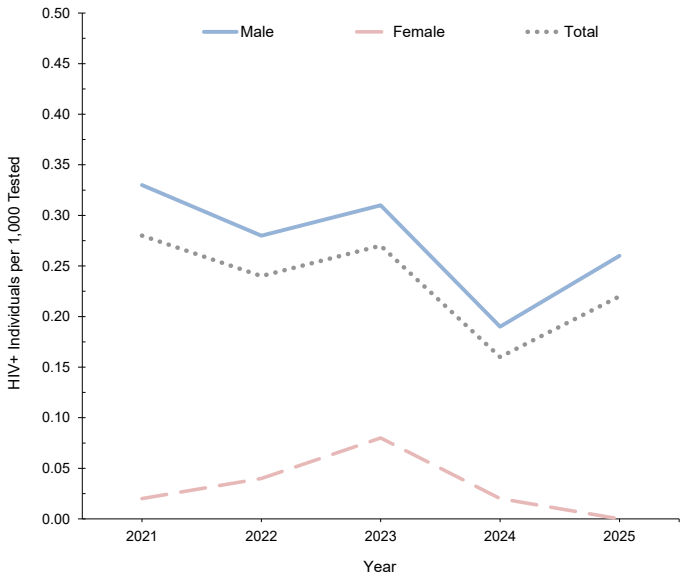
Abbreviations: HIV, human immunodeficiency virus; +, positive.

than the seropositivity rates of female active component soldiers **(Figure 3)**. On average, 1 new HIV infection per 3,284 screening tests was detected among active component sailors in 2025. Of the 262 active component sailors diagnosed with HIV infection since 2021, 204 (77.9%) were still in service in 2025.

Navy Reserve

In 2025, a total of 27,666 members of the U.S. Navy Reserve were tested for HIV antibodies; 6 sailors were identified as HIV-antibody-positive (seropositivity 0.22 per 1,000 tested) **(Table 5)**. On average, 1 new HIV infection was detected per 4,944 screening tests among Navy reservists in 2025. Of the 31 reserve component sailors diagnosed with HIV infection since 2021, 20 (64.5%) were still in service in 2025.

FIGURE 2. HIV Antibody Seropositivity Rates by Sex, Active Component, U.S. Army, 2021–2025



Abbreviations: HIV, human immunodeficiency virus; +, positive.

TABLE 2. New Diagnoses of HIV Infections, by Sex, U.S. Army National Guard, 2021–2025

Year	Total HIV Tests	Total Persons Tested	Males Tested	Females Tested	Total New HIV +	New HIV + Males	New HIV + Females	Overall Rate per 1,000 Tested	Male Rate per 1,000 Tested	Female Rate per 1,000 Tested	HIV+ in Military Service in 2025
2021	218,014	190,076	153,962	36,114	50	48	2	0.26	0.31	0.06	28
2022	207,596	179,160	143,855	35,305	40	37	3	0.22	0.26	0.08	27
2023	214,442	186,793	149,570	37,223	48	47	1	0.26	0.31	0.03	36
2024	208,401	182,044	144,014	38,030	63	61	2	0.35	0.42	0.05	53
2025	205,701	185,301	145,971	39,330	59	58	1	0.32	0.4	0.03	59
Total	1,054,154	923,374	737,372	186,002	260	251	9	0.28	0.34	0.05	203

Abbreviations: HIV, human immunodeficiency virus; +, positive.

TABLE 3. New Diagnoses of HIV Infections, by Sex, U.S. Army Reserve, 2021–2025

Year	Total HIV Tests	Total Persons Tested	Males Tested	Females Tested	Total New HIV +	New HIV + Males	New HIV + Females	Overall Rate per 1,000 Tested	Male Rate per 1,000 Tested	Female Rate per 1,000 Tested	HIV+ in Military Service in 2025
2021	119,026	101,357	75,487	25,870	29	29	0	0.29	0.38	0	17
2022	104,345	90,560	67,084	23,476	34	34	0	0.38	0.51	0	19
2023	79,409	69,055	50,615	18,440	24	23	1	0.35	0.45	0.05	18
2024	99,095	87,607	64,195	23,412	25	25	0	0.29	0.39	0	25
2025	75,277	66,839	48,412	18,427	34	32	2	0.51	0.66	0.11	34
Total	477,152	415,418	305,793	109,625	146	143	3	0.35	0.47	0.03	113

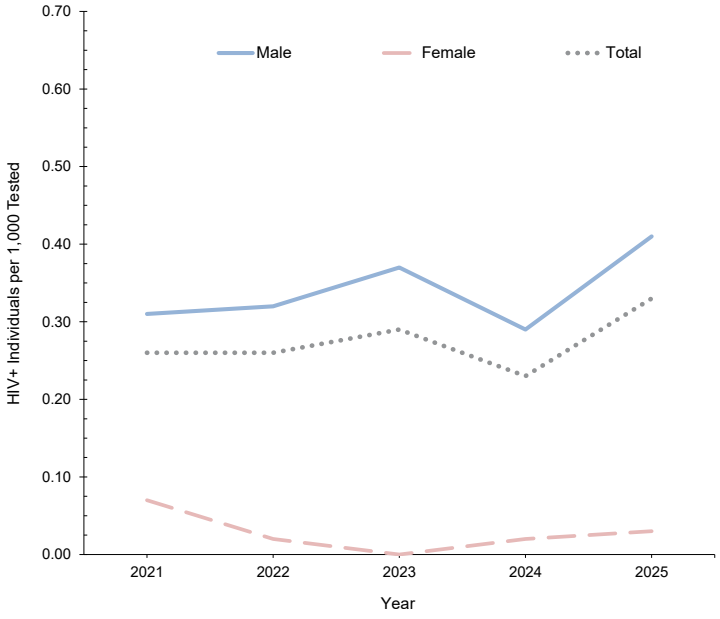
Abbreviations: HIV, human immunodeficiency virus; +, positive.

TABLE 4. New Diagnoses of HIV Infections, by Sex, Active Component, U.S. Navy, 2021–2025

Year	Total HIV Tests	Total Persons Tested	Males Tested	Females Tested	Total New HIV +	New HIV + Males	New HIV + Females	Overall Rate per 1,000 Tested	Male Rate per 1,000 Tested	Female Rate per 1,000 Tested	HIV+ in Military Service in 2025
2021	242,389	215,033	168,951	46,082	55	52	3	0.26	0.31	0.07	31
2022	226,457	195,687	152,713	42,974	50	49	1	0.26	0.32	0.02	33
2023	223,078	191,892	149,533	42,359	55	55	0	0.29	0.37	0	47
2024	224,448	193,660	150,953	42,707	45	44	1	0.23	0.29	0.02	36
2025	187,209	173,291	134,952	38,339	57	56	1	0.33	0.41	0.03	57
Total	1,103,581	969,563	757,102	212,461	262	256	6	0.27	0.34	0.03	204

Abbreviations: HIV, human immunodeficiency virus; +, positive.

FIGURE 3. HIV Antibody Seropositivity Rates by Sex, Active Component, U.S. Navy, 2021–2025



Abbreviations: HIV, human immunodeficiency virus; +, positive.

U.S. Air Force, active component

In 2025, a total of 170,579 U.S. Air Force active component members were tested for HIV antibodies; 20 were diagnosed with HIV infection (seropositivity 0.12 per 1,000 tested) **(Table 6)**. The seropositivity rate among male Air Force service members reached its lowest level in 2025 **(Figure 4)**. On average, 1 new HIV infection per 11,236 screening tests was detected among active component Air Force members in 2025. Of the 136 active component Air Force members diagnosed with HIV infection since 2021, 91 (66.9%) were still in service in 2025.

Air National Guard

In 2025, a total of 57,183 members of the Air National Guard were tested for HIV antibodies; 9 were diagnosed with HIV

TABLE 5. New Diagnoses of HIV Infections, by Sex, U.S. Navy Reserve, 2021–2025

Year	Total HIV Tests	Total Persons Tested	Males Tested	Females Tested	Total New HIV +	New HIV + Males	New HIV + Females	Overall Rate per 1,000 Tested	Male Rate per 1,000 Tested	Female Rate per 1,000 Tested	HIV+ in Military Service in 2025
2021	36,452	33,153	25,009	8,144	11	9	2	0.33	0.36	0.25	3
2022	32,202	28,741	21,546	7,195	7	5	2	0.24	0.23	0.28	6
2023	32,629	29,744	22,131	7,613	0	0	0	0	0	0	0
2024	31,229	28,379	20,963	7,416	7	7	0	0.25	0.33	0	6
2025	29,663	27,666	20,498	7,168	6	6	0	0.22	0.29	0	5
Total	162,175	147,683	110,147	37,536	31	27	4	0.21	0.25	0.11	20

Abbreviations: HIV, human immunodeficiency virus; +, positive.

TABLE 6. New Diagnoses of HIV Infections, by Sex, Active Component, U.S. Air Force, 2021–2025

Year	Total HIV Tests	Total Persons Tested	Males Tested	Females Tested	Total New HIV +	New HIV + Males	New HIV + Females	Overall Rate per 1,000 Tested	Male Rate per 1,000 Tested	Female Rate per 1,000 Tested	HIV+ in Military Service in 2025
2021	256,698	208,291	162,266	46,025	30	29	1	0.14	0.18	0.02	13
2022	238,661	190,517	148,620	41,897	31	31	0	0.16	0.21	0	16
2023	252,582	193,414	151,103	42,311	28	28	0	0.14	0.19	0	19
2024	234,567	174,816	136,519	38,297	27	27	0	0.15	0.2	0	23
2025	224,715	170,579	133,235	37,344	20	20	0	0.12	0.15	0	20
Total	1,207,223	937,617	731,743	205,874	136	135	1	0.15	0.18	0	91

Abbreviations: HIV, human immunodeficiency virus; +, positive.

infection (seropositivity 0.16 per 1,000 airmen tested) **(Table 7)**. On average, 1 new HIV infection per 8,149 screening tests was detected among Air National Guard members in 2025. Of the 32 Air National Guard members diagnosed with HIV infection since 2021, 27 (84.4%) were still in service in 2025.

Air Force Reserve

In 2025, a total of 34,429 members of the Air Force Reserve were tested for HIV antibodies; 5 were diagnosed with HIV infection (seropositivity 0.15 per 1,000 tested) **(Table 8)**. On average, 1 new HIV infection per 8,280 screening tests was detected among Air Force reservists in 2025. Of the 33 Air Force reservists diagnosed with HIV infection since 2021, 24 (72.7%) were still in service in 2025.

U.S. Marine Corps, active component

In 2025, a total of 89,546 active component members of the U.S. Marine Corps were tested for HIV antibodies; 20 were identified as HIV-antibody-positive (seropositivity 0.22 per 1,000 tested) **(Table 9)**. Annual seropositivity rates rose from a low of 0.11 per 1,000 tested in 2021 to a high of 0.23 per 1,000 in 2024 **(Table 9, Figure 5)**. On average, 1 new HIV infection per 4,868 screening tests was detected among active component marines in 2025. Of the 92 active component marines diagnosed with HIV infection since 2021, 64 (69.6%) were still in service in 2025.

Marine Corps Reserve

In 2025, a total of 16,067 Marine Corps Reserve members were tested for HIV antibodies; 3 were identified as HIV-antibody-positive (seropositivity 0.19 per 1,000 tested) **(Table 10)**. On average, 1 new HIV infection per 5,752 screening tests was detected among Marine Corps reservists in 2025. Of the 13 active component Marine reservists diagnosed with HIV infection since 2021, 8 (61.5%) were still in service in 2025.

U.S. Coast Guard, active component

In 2025, a total of 18,149 U.S. Coast Guard active component service members were tested for HIV antibodies; 2 were identified as HIV-antibody-positive (seropositivity 0.11 per 1,000 tested) **(Table 11)**. On average, 1 new HIV infection per 9,450 screening tests was detected among U.S Coast Guard active component members in 2025. All 5 active component Coast Guard members diagnosed with HIV infection since 2021 were still serving in 2025.

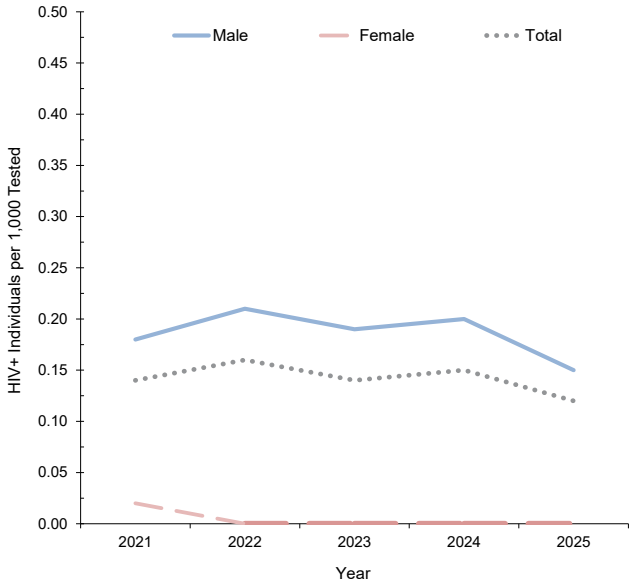
Coast Guard Reserve

In 2025, a total of 3,238 U.S. Coast Guard Reserve members were tested for HIV antibodies, with none identified as HIV-antibody-positive **(Table 12)**.

Discussion

The 2025 surveillance data for HIV infection among the U.S. military demonstrate historical stability, with an overall seropositivity rate of 0.22 per 1,000 tested, closely adhering to both the 2025 rate (0.21 per 1,000 tested) and historical comparisons established in the mid-1990s.[4,5] For nearly 4 decades, the U.S. military has routinely screened service members and civilian applicants, successfully balancing clinical vigilance with force preservation.[6–9]

FIGURE 4. HIV Antibody Seropositivity Rates by Sex, Active Component, U.S. Air Force, 2021–2025



Abbreviations: HIV, human immunodeficiency virus; +, positive.

TABLE 7. New Diagnoses of HIV Infections, by Sex, U.S. Air National Guard, 2021–2025

Year	Total HIV Tests	Total Persons Tested	Males Tested	Females Tested	Total New HIV +	New HIV + Males	New HIV + Females	Overall Rate per 1,000 Tested	Male Rate per 1,000 Tested	Female Rate per 1,000 Tested	HIV+ in Military Service in 2025
2021	68,105	60,304	47,161	13,143	8	8	0	0.13	0.17	0	5
2022	61,344	54,818	42,781	12,037	4	3	1	0.07	0.07	0.08	2
2023	70,823	56,966	44,636	12,330	6	6	0	0.11	0.13	0	6
2024	69,646	52,549	41,055	11,494	5	5	0	0.1	0.12	0	5
2025	73,343	57,183	44,643	12,540	9	9	0	0.16	0.2	0	9
Total	343,261	281,820	220,276	61,544	32	31	1	0.11	0.14	0.02	27

Abbreviations: HIV, human immunodeficiency virus; +, positive.

TABLE 8. New Diagnoses of HIV Infections, by Sex, U.S. Air Force Reserve, 2021–2025

Year	Total HIV Tests	Total Persons Tested	Males Tested	Females Tested	Total New HIV +	New HIV + Males	New HIV + Females	Overall Rate per 1,000 Tested	Male Rate per 1,000 Tested	Female Rate per 1,000 Tested	HIV+ in Military Service in 2025
2021	41,581	37,424	27,015	10,409	15	14	1	0.4	0.52	0.1	8
2022	37,262	33,449	24,174	9,275	4	4	0	0.12	0.17	0	4
2023	38,996	33,704	24,377	9,327	4	4	0	0.12	0.16	0	3
2024	38,730	31,845	22,636	9,209	5	5	0	0.16	0.22	0	4
2025	41,401	34,429	24,930	9,499	5	5	0	0.15	0.2	0	5
Total	197,970	170,851	123,132	47,719	33	32	1	0.19	0.26	0.02	24

Abbreviations: HIV, human immunodeficiency virus; +, positive.

TABLE 9. New Diagnoses of HIV Infections, by Sex, Active Component, U.S. Marine Corps, 2021–2025

Year	Total HIV Tests	Total Persons Tested	Males Tested	Females Tested	Total New HIV +	New HIV + Males	New HIV + Females	Overall Rate per 1,000 Tested	Male Rate per 1,000 Tested	Female Rate per 1,000 Tested	HIV+ in Military Service in 2025
2021	148,022	129,753	117,781	11,972	14	14	0	0.11	0.12	0	4
2022	129,450	112,838	101,846	10,992	13	12	1	0.12	0.12	0.09	6
2023	129,596	112,495	101,128	11,367	20	20	0	0.18	0.2	0	14
2024	125,764	107,265	96,181	11,084	25	25	0	0.23	0.26	0	20
2025	97,368	89,546	80,549	8,997	20	20	0	0.22	0.25	0	20
Total	630,200	551,897	497,485	54,412	92	91	1	0.17	0.18	0.02	64

Abbreviations: HIV, human immunodeficiency virus; +, positive.

TABLE 10. New Diagnoses of HIV Infections, by Sex, U.S. Marine Corps Reserve, 2021–2025

Year	Total HIV Tests	Total Persons Tested	Males Tested	Females Tested	Total New HIV +	New HIV + Males	New HIV + Females	Overall Rate per 1,000 Tested	Male Rate per 1,000 Tested	Female Rate per 1,000 Tested	HIV+ in Military Service in 2025
2021	26,091	22,696	21,836	860	6	6	0	0.26	0.27	0	2
2022	19,962	17,746	17,023	723	2	2	0	0.11	0.12	0	1
2023	21,579	19,193	18,309	884	0	0	0	0	0	0	0
2024	21,454	18,527	17,620	907	2	2	0	0.11	0.11	0	2
2025	17,255	16,067	15,194	873	3	3	0	0.19	0.2	0	3
Total	106,341	94,229	89,982	4,247	13	13	0	0.14	0.14	0	8

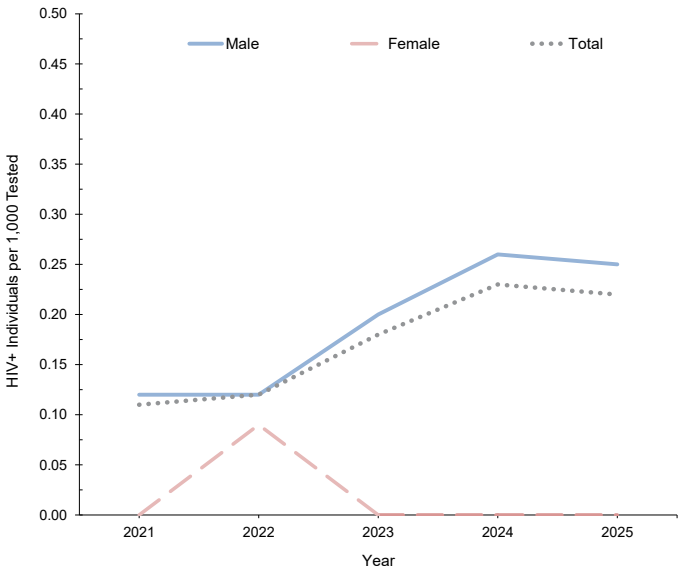
Abbreviations: HIV, human immunodeficiency virus; +, positive.

As early as 1995, the U.S. Army processed roughly 1.1 million specimens annually, establishing an economically efficient, scalable model for force-wide HIV monitoring that persists today.[10]

The progression of career longevity highlights the modern era of the military's HIV program. Following the June 2022 DOW policy updates, which prohibited the discharge of asymptomatic service members with undetectable viral loads, retention rates have risen substantially. While only 26% of HIV-positive soldiers remained in uniform 1990–1994,[5] current data show that 68.7% of active component Army soldiers diagnosed since 2021 continue to serve.

Demographically, new diagnoses remain concentrated among young male service members, with personnel younger than age 25 years accounting for over 41%

FIGURE 5. HIV Antibody Seropositivity Rates by Sex, Active Component, U.S. Marine Corps, 2021–2025



Abbreviations: HIV, human immunodeficiency virus; +, positive.

TABLE 11. New Diagnoses of HIV Infections, by Sex, Active Component, U.S. Coast Guard, 2021–2025

Year	Total HIV Tests	Total Persons Tested	Males Tested	Females Tested	Total New HIV +	New HIV + Males	New HIV + Females	Overall Rate per 1,000 Tested	Male Rate per 1,000 Tested	Female Rate per 1,000 Tested	HIV+ in Military Service in 2025
2021	20,461	19,798	16,630	3,168	1	1	0	0.05	0.06	0	1
2022	19,578	18,934	15,930	3,004	0	0	0	0	0	0	0
2023	19,287	18,493	15,479	3,014	0	0	0	0	0	0	0
2024	19,837	18,888	15,785	3,103	2	2	0	0.11	0.13	0	2
2025	18,899	18,149	15,171	2,978	2	2	0	0.11	0.13	0	2
Total	98,062	94,262	78,995	15,267	5	5	0	0.05	0.06	0	5

Abbreviations: HIV, human immunodeficiency virus; +, positive.

TABLE 12. New Diagnoses of HIV Infections, by Sex, U.S. Coast Guard Reserve, 2021–2025

Year	Total HIV Tests	Total Persons Tested	Males Tested	Females Tested	Total New HIV +	New HIV + Males	New HIV + Females	Overall Rate per 1,000 Tested	Male Rate per 1,000 Tested	Female Rate per 1,000 Tested	HIV+ in Military Service in 2025
2021	3,230	3,025	2,512	513	0	0	0	0	0	0	0
2022	2,918	2,826	2,332	494	0	0	0	0	0	0	0
2023	2,905	2,787	2,274	513	0	0	0	0	0	0	0
2024	3,217	3,058	2,529	529	0	0	0	0	0	0	0
2025	3,377	3,238	2,679	559	0	0	0	0	0	0	0
Total	15,647	14,934	12,326	2,608	0	0	0	0	0	0	0

Abbreviations: HIV, human immunodeficiency virus; +, positive.

of cases in 2025. This demographic distribution corroborates the 2022–2025 National HIV/AIDS Strategy focus on youth ages 13-24 years.

Because this study population underwent rigorous pre-entry screening and entered military service confirmed as negative for HIV seroprevalence, these findings reflect a highly selected population and should not be generalized to the wider, unscreened public. This distinction is further compounded by the fact that civilian applicant data from the U.S. Military Entrance Processing Command have not been integrated into the DMSS since 2020; this report therefore documents only active and reserve personnel who sero-converted after starting military service. These rates reflect incident infections acquired during uniformed service and are not directly comparable to civilian surveillance reports.

Periodic, mandatory testing of active and reserve personnel, coupled with the routine screening of civilian applicants, remains a cornerstone of the DOW's HIV control and clinical management efforts.[12] The seropositivity rates for HIV in 2025 documented the U.S. Armed Forces underscore that the comprehensive screening program is still a vital instrument of force health protection. This clinical vigilance is especially critical for male service members younger than age 35 years, who continue to evince the highest rate of new diagnoses in all branches and components of the U.S. Armed Forces.

Only 34 female service members were newly identified as HIV-antibody-positive during the 2021-2025 surveillance period, corresponding to a substantially lower seropositivity rate than that observed among male service members. This low testing result yield warrants additional evaluation of the resource implications and population-specific effectiveness of routine HIV screening among female service members; these surveillance data alone, however, cannot determine whether sex-specific changes in testing policy would maintain timely case detection and force health protection.

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Disclaimers

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

The editors disclose use of an artificial intelligence (AI) language model in the preparation of this report. Assistance was provided by Gemini Enterprise, a large language model from Google optimized specifically for Department of War mission support within an Impact Level 5 (IL5) environment. This AI application was used to assist with initial drafts of the discussion to refine prose for clarity. MSMR *editors directed all AI review and analysis, with subsequent editorial staff review and final edits. The editors assert full responsibility for the accuracy and integrity of the final content.*

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Associations Between MHS GENESIS Electronic Health Record Transition and Estimated Medical Personnel on Reporting of Most Frequent Reportable Medical Events, 2016–2023

Jacob D. Smith, MPH; David H. Yun, MD, MPH; Alexis L. Maule, PhD; Grace C. McCrea, MPH; Idalia G. Aguirre, MPH; Kiara D. Scatliffe-Carrion, MPH; Markku Malmi, PhD; John F. Ambrose, PhD, MPH

The Military Health System (MHS) GENESIS transition aimed to modernize electronic health records for the MHS, which brought adoption challenges and process changes that led to temporary delays in data workflows. Understanding how the transition to MHS GENESIS affects the public health surveillance of reportable medical events (RMEs) is essential for interpreting recent findings as well as improving future Department of War (DOW) surveillance efforts. Using both the MHS Data Repository (MDR) and Disease Reporting System internet (DRSi), the 9 most frequently reported RMEs among DOW beneficiaries from January 1, 2016 through November 1, 2023 were identified. MDR medical encounters were matched to DRSi records by matching on the closest available encounter date to the date first reported to DRSi. Piecewise Cox proportional hazard models, adjusting for the MHS GENESIS transition, estimated medical personnel, and RME categories, were used to analyze timeliness of reporting to DRSi for DOW beneficiaries. The rate of reporting for RMEs occurring among the active component during the post-MHS GENESIS transition was 34% lower, at any given time, compared to the pre-MHS GENESIS transition period. Reporting of RMEs from facilities with estimated small and medium medical personnel was 10-12% higher compared to facilities with estimated large medical personnel, respectively.

What are the new findings?

The rate of active component RME reporting for post-MHS GENESIS transition, at any given time, was 34% lower compared to pre-MHS GENESIS transition from the Composite Health Care System (CHCS) and Armed Forces Health Longitudinal Technology Application (AHLTA). Small and medium Military Health System facilities, based on estimated medical personnel, had 10–12% higher rates of RME reporting, at any given time, compared to large military hospitals and clinics.

What is the impact on readiness and force health protection?

Timely RME reporting is essential for accurate monitoring of trends in disease incidence among warfighters and MHS beneficiaries; accurate health surveillance is necessary to mitigate disease and maintain readiness of the fighting force. The observed reduction in active component RME reporting rates during the post-MHS GENESIS transition period is a meaningful decrement in surveillance data that could have negatively affected force health protection efforts throughout the DOW.

Rapid reporting of notifiable medical conditions that pose threats to public health is vital for swift initiation of effective public health responses. The *Armed Forces Reportable Medical Events Guidelines and Case Definitions* provides precise case definitions for medical conditions that present significant potential threats to public health and military operations, in addition to specific guidelines for required reporting to military public health by military hospitals and clinics.[1-5] Within the U.S. Department of War (DOW), reportable medical events (RMEs) are reported directly through a centralized system, the Disease Reporting System internet (DRSi).

Military public health personnel have relied on data from electronic health records (EHRs) since the 1990s to conduct routine disease surveillance. The military's EHR infrastructure evolved from the non-integrated, inconsistent data standard Composite Health Care System (CHCS), launched in 1989, to the Armed Forces Health Longitudinal Technology Application (AHLTA) system of 2004, encumbered by performance shortcomings, that was supplemented in 2007 by the deployment of Essentris, a dedicated inpatient EHR to complement AHLTA.[6-9]

From 2017 through 2024, under Congressional mandate, the Military Health System (MHS) GENESIS, the latest inter-operable EHR component, went live throughout the MHS.[8,10] The phased implementation of MHS GENESIS presented adoption challenges, however; in addition, it caused process changes that led to temporary workflow delays.[7] In addition, the COVID-19 pandemic emerged as the first MHS hospitals and clinics began their 'go-live' transition. Subsequent phases of the MHS GENESIS migration—from 2020 through 2022—were concurrent with evolving public health guidelines and urgent requirements for real-time COVID-19 surveillance within the MHS.

No published reports have described how the reporting of RMEs was affected by the transition to the MHS GENESIS as the new inter-operable EHR system.[10] Three reports published in *MSMR* investigated the reporting completeness and timeliness of RMEs in 1998-2007, 2008-2014, and 2018-2022.[3-5] Hurt and Ying (2015) describe annual increases from 2008 to 2014 in reporting timeliness (i.e., time required for medical encounter reporting to DRSi) for cases reported within 1 week for active component ambulatory and inpatient care cases.[4] The most recent *MSMR* report found fluctuations in timeliness of 2018–2022 reporting of inpatient cases and decreases in timeliness of reporting of ambulatory cases.[5]

According to the most recent *MSMR* report, between 2018 and 2022 military hospitals and clinics reported 60.0% to 74.7% of RMEs for hospitalized non-active component service member beneficiaries to DRSi within 1 week of the medical encounter, and reported 92.9–100% of their RMEs to DRSi within 1 month.[5] Military hospitals and clinics reported 37.5–44.5% of RMEs associated with ambulatory care of non-active component service member beneficiaries to DRSi within 1 week, and within 1 month 85.1–89.0% of the time.[5]

The prior reports substantiated differences in reporting metrics over time but did not examine potential reasons for measured inconsistencies. The purpose of the current analysis is to determine 1) if the transition from the legacy EHR systems, CHCS and AHLTA, to the new MHS GENESIS system was associated with the time from medical encounter to DRSi report (i.e., reporting timeliness) and 2) whether the estimated size of the medical personnel at military hospitals and clinics was associated with reporting timeliness.

Methods

Incident RMEs were obtained from DRSi for all DOW beneficiaries from January 1, 2016 through November 1, 2023. Incident RMEs were limited to the 9 most frequently reported events, which were reportable for all DOW beneficiaries, not just active component service members (ACSMs), during the surveillance period.

The 9 most frequently reported RMEs were 1) chlamydia trachomatis, 2) gonorrhea, 3) syphilis, 4) COVID-19-associated hospitalization or death, 5) influenza-associated hospitalization, 6) campylobacteriosis, 7) norovirus, 8) salmonellosis, and 9) post-exposure prophylaxis (PEP) against rabies. These RMEs were classified into 4 categories based on similar characteristics: 1) sexually transmitted infections (STIs), 2) gastrointestinal (GI) conditions, 3) respiratory conditions, and 4) rabies prophylaxis. In October 2022, the case definition for COVID-19 was updated from any confirmed case, regardless of hospitalization or death status, to include only confirmed hospitalizations or deaths.[2] This report includes only cases of COVID-19-associated hospitalization or death that occurred prior to the updated October 2022 case definition.

Incident medical encounter data were obtained from the MHS Data Repository (MDR). The MDR contains administrative records for all medical encounters of DOW beneficiaries who received care at military hospitals or clinics as well as civilian care (i.e., through TRICARE). MHS GENESIS data were sourced from the Bulk Data Extract 3.0. RMEs were identified using International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM) diagnostic codes and the case definitions listed in **Table 1**.

Incident RMEs from DRSi were matched to medical encounters in the MDR based on diagnostic codes corresponding to the RME, patient identifiers (e.g., social security number, DOD person identifier), and closest DRSi event date to the incident medical encounter date. The DRSi event date was derived from the date of diagnosis recorded for the RME. If a diagnosis date was missing, then a sequence of dates was prioritized: 1) date of clinic visit, 2) onset date, or 3) date first reported to DRSi. In cases where more than 1 RME matched with a single medical encounter, an additional row was added to match to the second incident RME—for example, if chlamydia and gonorrhea met the case definition on the same medical encounter, the encounter was split into 2 separate encounters on the same day to match DRSi reporting.

Cases reported from deployed and shipboard locations were excluded. Records identified solely through DRSi without a corresponding medical encounter were excluded. Potentially notifiable cases identified solely via the MDR from purchased care (i.e., care not rendered at a military hospital or clinic) were excluded due to lack of an associated MHS medical facility for estimation of medical personnel and MHS GENESIS transition phase.

The outcome of interest—timeliness of RME reporting—was estimated by calculating the number of days between the incident medical encounter and date of first report to DRSi. Weekends and federal holidays were excluded from the reporting timeliness calculation.

The primary exposure of interest was the MHS GENESIS transition phase. Transition dates, identified using the MHS GENESIS 'go-live' dates available in the MDR for each military hospital and clinic, divided the surveillance period into 2 phases: the period prior to implementation, or 'pre-transition' period, and the period following implementation, or 'post-transition' period. MHS hospitals and clinics that transitioned within 1 year before or after November 1, 2023 (e.g., Okinawa, Guam, Seoul, Landstuhl) were excluded due to limited post-transition data availability.

Additional variables included beneficiary type, estimated medical personnel (e.g., "manpower"), and RME category. DOW beneficiaries were categorized as either active component or 'other DOW beneficiary' based on beneficiary category. The 'other DOW beneficiary' category included service members in the reserve or Guard components, retirees, civilians, and dependents. Medical personnel were estimated using full-time equivalent (FTE) person-months from Medical Expense and Performance Reporting personnel data from fiscal year (FY) 2016 through FY 2024. The median FTE value per facility during the surveillance period was categorized into tertiles (e.g., small: 1,413-3,314 person-months; medium: 3,315-8,401 person-months; large: 8,402-90,242 person-months) to estimate medical personnel. Reporting locations without estimated medical personnel data during the surveillance period were excluded.

Analyses

Piecewise Cox proportional hazards (PH) models with non-informative prior distributions were used to address

TABLE 1. Nine Most Frequently Reportable Medical Events and Associated ICD-10-CM Diagnostic Codes, Incidence Rules, Required Numbers and Types of Encounters, and Diagnostic Positions to Identify Notifiable Medical Cases

Reportable Medical Event	ICD-10-CM Diagnosis Code	Incidence Rule	No. and Type of Encounter	Diagnostic Position
Campylobacteriosis	A04.5	Once every 180 days	1 inpatient, 1 outpatient	Any
Chlamydia	A55.x, A56.x, A74.x, P23.1	Once per 120 days	1 inpatient, 1 outpatient	DX1, DX2
COVID-19-associated hospitalization or death[a]	U07.1	Once per respiratory year[b]	1 inpatient	DX1, DX2
Gonorrhea	A54.x, O98.2x	Once per 120 days	1 inpatient, 1 outpatient	DX1, DX2
Influenza-associated hospitalization	J09-J11	Once per respiratory year[b]	1 inpatient	DX1
Norovirus	A08.0, A08.1, A08.11	Once per 120 days	1 inpatient	DX1, DX2
Post-exposure prophylaxis (PEP) against rabies	Z29.14	Once per lifetime	1 inpatient, 1 outpatient	DX1, DX2
Salmonellosis	A02.x	Once every 180 days	1 inpatient, 1 outpatient	Any
Syphilis	A50.x, A51.x, A52.x, A53.x, O98.1x	Once per calendar year	1 inpatient, 1 outpatient	Inpatient DX1–DX3, Outpatient DX1, DX2

Abbreviations: ICD-10-CM, International Classification of Diseases, 10th Revision, Clinical Modification; No., number; COVID-19, coronavirus disease 2019; PEP, post-exposure prophylaxis.
[a] Only reportable beginning Oct. 2022; prior "non-reportable" hospitalizations and deaths included.
[b] Respiratory year Jul. 1–Jun. 30.

non-proportional hazards at different points in time. Time intervals were selected separately for active component and other DOW beneficiaries to ensure the PH assumption was met for each model. The primary exposure of interest was the MHS GENESIS transition phase (e.g., reference=pre-transition). Adjusted models additionally controlled for estimated medical personnel category (e.g., reference=large), and RME category (e.g., reference=STI). An adjusted hazard rate of less than 1 indicated that reporting occurred more slowly in the post-transition period; this indicated reduced reporting *timeliness* (i.e., longer duration from the medical encounter to DRSi reporting) rather than reduced reporting *completeness*.

Records were censored if there was no matching incident medical encounter to the RME from DRSi. To ensure the incident medical encounter matched to the same event as the RME from DRSi, records prior to the fifth percentile (-78 days) and after the ninety-fifth percentile (156 days) were excluded.

Percentiles were calculated as the difference between the RME date and incident medical encounter date. Differences less than 0 were set to 0, as the RME may have occurred earlier than the diagnosis in the medical record, due to preliminary information. Sensitivity analyses adjusting for different percentile exclusions were performed. All analyses were performed using SAS version 9.4 software (SAS Institute, Cary, NC) with significance level set to 0.05.

To assess the robustness of the primary findings, a sensitivity analysis was conducted excluding chlamydia and COVID-19. Chlamydia was considered for exclusion because it comprised 71% of all RMEs, which may have disproportionally influenced model estimates. COVID-19 was considered for exclusion because it was not reportable throughout the entire study period, and its emergence coincided with the MHS GENESIS transition, introducing potential confounding that could have obscured the independent association between the MHS GENESIS transition and RME reporting timeliness.

Results

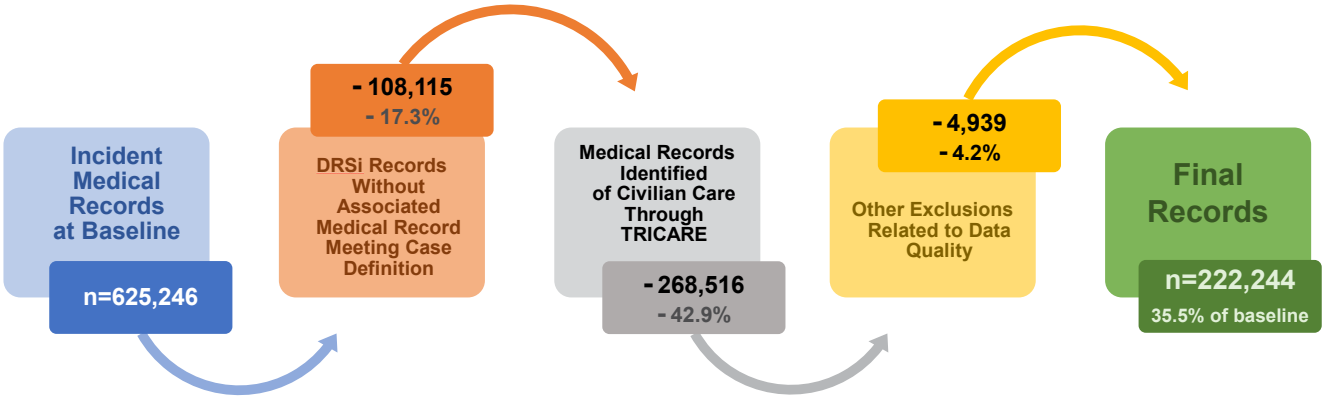
From January 1, 2016 through November 1, 2023, there were 625,246 incident medical records meeting the case definition for the 9 RMEs most frequently reported to DRSi. Approximately 43% of records were excluded due to a sole medical record originating from civilian care (i.e., through TRICARE), and about 17% of records were excluded due to an RME from DRSi without a corresponding medical encounter **(Figure 1)**. The remaining 4% of excluded records were due to unavailable medical personnel estimates for a location, less than 1 year post-transition, or the RME from DRSi was matched with a different medical record **(Figure 1)**.

The final analytic dataset contained 138,318 (62.2%) pre-transition ACSM records and 12,226 (5.5%) post-transition ACSM records, while pre-transition DOW beneficiary records comprised 63,612 (28.6%), and post-transition DOW beneficiary records constituted 8,088 (3.6%) **(Table 2)**. The average overall reporting timeliness was within 7.9 days (SD=19.2) **(Table 3)**. About 25% (n=55,857) of all records were censored, with 22.1% more post-transition censored records than pre-transition censored records (data not shown).

Active component service members

Post-transition, the proportion of RMEs originating from civilian care providers increased by 2.1% **(Table 2)**. The proportion of reported chlamydia cases decreased by 19.5%, while gonorrhea and syphilis cases increased by 6.0% and 5.7%, respectively **(Table 2)**. The proportion of reported COVID-19-associated hospitalization or death cases increased by 5.9%, with little change observed for the other RMEs **(Table 2)**.

FIGURE 1. Process of Records Selection for Reporting of Nine Most Frequent Reportable Medical Events, January 1, 2016–November 1, 2023



Abbreviations: n, number; - , minus; %, percent; DRSi, Disease Reporting System internet.
Note: Exclusion counts and percent categories are not mutually exclusive.

TABLE 2. Percentages of Reportable Medical Events Reported to DRSi with Matching Medical Encounter Records, by Population and MHS GENESIS Transition Period, for Nine Most Frequently Reported Events, January 1, 2016–November 1, 2023

Characteristics of Reporting		Total[a]		Active Component				Other DOW Beneficiaries			
				Pre-Transition		Post-Transition		Pre-Transition		Post-Transition	
		No.	%	No.	%	No.	%	No.	%	No.	%
		222,244	100	138,318	62.2	12,226	5.5	63,612	28.6	8,088	3.6
Source of health care provision											
MHS hospital or clinic		219,857	98.9	137,435	99.4	11,892	97.3	62,703	98.6	7,827	96.8
Civilian care		2,387	1.1	883	0.6	334	2.7	909	1.4	261	3.2
Category	RME										
STI	Chlamydia	156,897	70.6	110,458	79.9	7,383	60.4	37,153	58.4	1,903	23.5
	Gonorrhea	22,597	10.2	14,837	10.7	2,036	16.7	5,235	8.2	489	6.0
	Syphilis	12,651	5.7	7,066	5.1	1,318	10.8	3,637	5.7	630	7.8
Respiratory infection	COVID-19-associated hospitalization and death	16,121	7.3	2,476	1.8	941	7.7	8,806	13.8	3,898	48.2
	Influenza-associated hospitalization	4,343	2.0	395	0.3	51	0.4	3,505	5.5	392	4.8
Gastrointestinal infection	Norovirus	2,898	1.3	1,000	0.7	117	1.0	1,548	2.4	233	2.9
	Campylobacteriosis	2,405	1.1	881	0.6	80	0.7	1,325	2.1	119	1.5
	Salmonellosis	2,319	1.0	511	0.4	62	0.5	1,580	2.5	166	2.1
Rabies prophylaxis	Post-exposure prophylaxis (PEP) against rabies	2,013	0.9	694	0.5	238	1.9	823	1.3	258	3.2
Estimated medical personnel category [b]											
Small		15,644	7.0	11,478	8.3	865	7.1	3,083	4.8	218	2.7
Medium		35,563	16.0	25,677	18.6	1,076	8.8	8,442	13.3	368	4.5
Large		171,037	77.0	101,163	73.1	10,285	84.1	52,087	81.9	7,502	92.8

Abbreviations: DRSi, Disease Reporting System internet; MHS, Military Health System; DOW, Department of War; No., number; %, percentage; STI, sexually transmitted infection; COVID-19, coronavirus disease 2019; PEP, post-exposure prophylaxis.
[a] 55,857 records censored in analysis due to no matching medical record.
[b] Estimated medical personnel category full-time equivalent personnel months: small, 1,413–3,314; medium, 3,315–8,401; large, 8,402–90,242.

TABLE 3. Analysis Population Distribution of Timeliness for Cases Reported to DRSi with Matching Medical Encounter by Population and MHS GENESIS Transition Period, Nine Most Frequent Reportable Medical Events, January 1, 2016–November 1, 2023

Characteristics of Reporting		Total[a]	Active Component							
			Pre-Transition				Post-Transition			
		No.	No.	Mean[c]	SD	Median	No.	Mean[c]	SD	Median
		222,244	116,594	7.6	18.3	1.0	8,209	10.4	26.3	1.0
Source of health care provision										
MHS hospital or clinic		219,857	115,711	7.5	18.2	1.0	7,875	10.2	26.1	1.0
Civilian care		2,387	883	13.7	25.1	4.0	334	15.8	28.6	3.0
Category	RME									
STI	Chlamydia	156,897	99,107	7.5	17.5	1.0	5,555	10.3	26.2	1.0
	Gonorrhea	22,597	11,912	6.7	16.3	1.0	1,491	9.4	24.5	1.0
	Syphilis	12,651	3,027	15.8	37.9	3.0	696	16.3	33.8	2.0
Respiratory infection	COVID-19-associated hospitalization and death	16,121	798	5.8	12.4	1.0	179	5.3	16.8	1.0
	Influenza-associated hospitalization	4,343	154	4.3	7.7	2.0	19	2.5	2.2	2.0
Gastrointestinal infection	Norovirus	2,898	199	2.4	4.2	1.0	30	2.5	4.5	2.0
	Campylobacteriosis	2,405	711	5.3	12.6	2.0	55	7.6	18.9	2.0
	Salmonellosis	2,319	313	5.9	20.4	1.0	34	3.7	7.0	1.0
Rabies prophylaxis	Post-exposure prophylaxis (PEP) against rabies	2,013	373	14.1	34.6	2.0	150	7.4	18.4	1.0
Estimated medical personnel category[b]										
Small		15,644	9,787	10.3	23.1	2.0	619	15.4	31.9	2.0
Medium		35,563	21,726	8.3	19.5	2.0	612	20.1	35.1	6.0
Large		171,037	85,081	7.1	17.2	1.0	6,978	9.1	24.5	1.0

Characteristics of Reporting		Other DOW Beneficiaries							
		Pre-Transition				Post-Transition			
		No.	Mean[c]	SD	Median	No.	Mean[c]	SD	Median
		38,661	8.0	19.0	2.0	2,923	11.8	30.8	1.0
Source of health care provision									
MHS hospital or clinic		37,752	7.8	18.7	2.0	2,662	11.3	29.3	1.0
Civilian care		909	14.6	28.7	3.0	261	17.6	42.4	1.0
Category	RME								
STI	Chlamydia	27,797	8.0	17.8	2.0	1,063	13.0	33.7	1.0
	Gonorrhea	3,389	6.6	16.6	2.0	268	10.0	23.6	1.0
	Syphilis	984	17.2	46.8	3.0	152	19.9	40.3	3.0
Respiratory infection	COVID-19-associated hospitalization and death	3,671	7.6	15.2	2.0	1,030	12.1	31.4	1.0
	Influenza-associated hospitalization	520	4.5	6.6	2.0	45	2.0	1.9	2.0
Gastrointestinal infection	Norovirus	227	3.9	7.4	2.0	83	5.4	9.4	2.0
	Campylobacteriosis	868	6.9	17.7	2.0	61	5.9	15.1	3.0
	Salmonellosis	908	7.2	16.3	2.0	90	7.3	15.1	2.0
Rabies prophylaxis	Post-exposure prophylaxis (PEP) against rabies	297	15.0	41.5	2.0	131	7.8	25.1	0.0
Estimated medical personnel category[b]									
Small		1,996	10.3	25.0	2.0	115	27.8	62.9	4.0
Medium		5,778	8.7	19.3	2.0	137	16.3	29.2	4.0
Large		30,887	7.7	18.5	2.0	2,671	10.9	28.5	1.0

Abbreviations: DRSi, Disease Reporting System internet; MHS, Military Health System; DOW, Department of War; No., number; SD, standard deviation; RME, reportable medical event; STI, sexually transmitted disease; COVID-19, coronavirus disease 2019; PEP, post-exposure prophylaxis.
[a] 55,857 records censored in analysis due to no matching medical record.
[b] Estimated medical personnel category full-time equivalent person-months: small, 1,413–3,314; medium, 3,315–8,401; large, 8,402–90,242.
[c] Number of days from medical encounter to DRSi report, excluding weekends and federal holidays.
[d] Overall average reporting timeliness 7.9 days, SD 19.2 days.

The proportion of reporting at MHS hospitals and clinics decreased by 1.2% and 9.8% for facilities with small and medium medical personnel estimates, respectively, while facilities with large medical personnel estimates increased by 11.0% **(Table 2)**.

Cases reported directly to DRSi without a matching medical encounter varied post-transition for chlamydia (+5.9%) and gonorrhea (-4.5%), and from facilities with small (+2.8%), medium (-7.9%), and large medical personnel estimates (+5.1%) **(Supplementary Table 1)**.

Post-transition, average reporting time generally worsened, by about 3 days, with largest differences in campylobacteriosis, gonorrhea, and chlamydia reporting **(Table 3, Figure 2)**. Reporting timeliness improved for post-exposure prophylaxis (PEP) against rabies, salmonellosis, and influenza-associated hospitalizations. RME reporting timeliness deteriorated within all medical personnel categories, with the greatest increase in medium medical personnel facilities, where mean reporting time increased from approximately 8 days pre-transition to approximately 20 days post-transition **(Table 3)**.

Compared to the pre-transition period, the rate of reporting for ACSMs, at any given time, was 34% lower (hazard ratio [HR]: 0.66; 95% confidence interval [CI] 0.65, 0.68) than post-transition, adjusting for estimated medical personnel and condition **(Table 4)**. Military hospitals and clinics with small and medium medical personnel estimates had 12% (HR 1.12; 95% CI 1.10, 1.15) and 10% (HR 1.10; 95% CI 1.08, 1.11) higher rates of reporting to DRSi compared to facilities with large medical personnel estimates, respectively **(Table 4)**. When compared to STI reports, reporting rates were lower, at any given time, for rabies prophylaxis, by 58% (HR 0.42; 95% CI 0.38, 0.45), as well as 63% lower for GI conditions (HR 0.37; 95% CI 0.35, 0.39) and 82% lower for respiratory conditions (HR 0.18; 95% CI 0.17, 0.19) **(Table 4)**.

Other Department of War beneficiaries

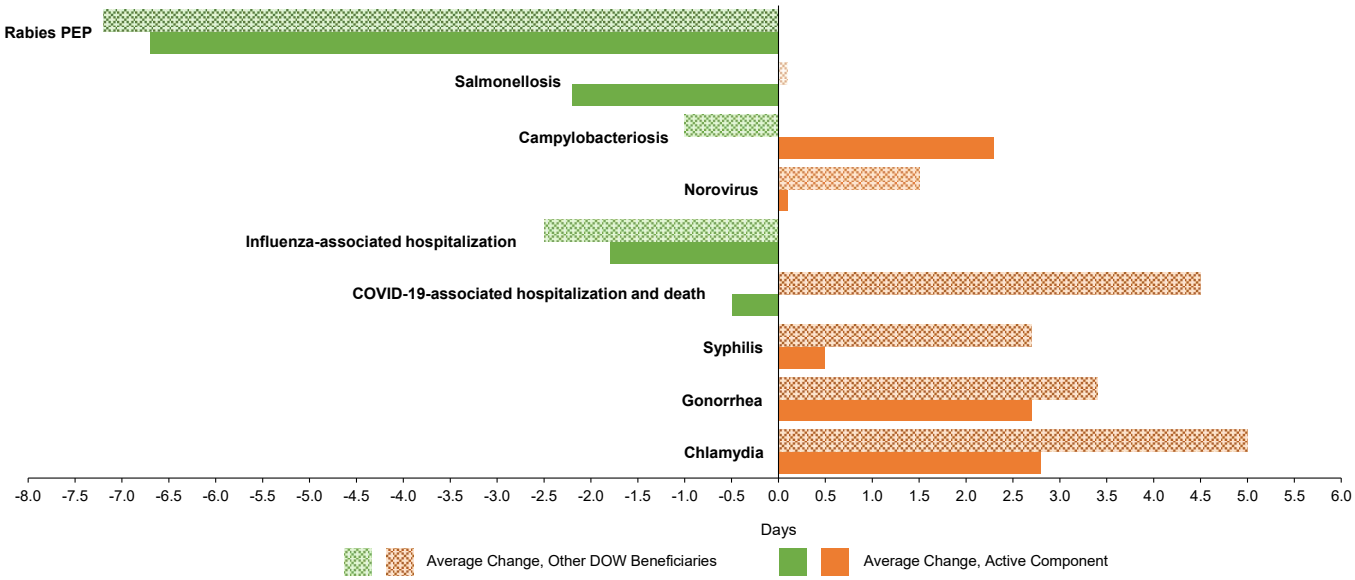
Post-transition, the proportion of RMEs identified through civilian care increased by 1.8% **(Table 2)**. Reported chlamydia and gonorrhea cases decreased by 34.9% and 2.2%, respectively, while syphilis cases increased by 2.1% **(Table 2)**. Reported COVID-19-associated hospitalization or death cases rose by 34.4%, while the other RMEs were generally unchanged **(Table 2)**. Reporting improved at large medical personnel facilities by 10.9%, whereas small and medium medical personnel facilities decreased by 2.1% and 8.8%, respectively **(Table 2)**.

As with ACSMs, other beneficiary cases reported directly to DRSi without a matching medical encounter varied post-transition for chlamydia (-4.6%) and gonorrhea (-3.8%), in addition to COVID-19-associated hospitalization or death (+9.8%), norovirus (+2.2%), and salmonellosis (-2.2%), as well as from medium (-7.9%) and large medical personnel facilities (+6.5%) **(Supplementary Table 2)**.

Post-transition, reporting timeliness worsened by almost 4 days, with increases for chlamydia, gonorrhea, syphilis, COVID-19-associated hospitalization or death, and norovirus cases **(Table 3, Figure 2)**. Reporting timeliness improved for PEP against rabies and influenza-associated hospitalization cases **(Table 3, Figure 2)**. Reporting timeliness worsened for all medical personnel categories, with small medical personnel facilities lagging by nearly 18 days **(Table 3)**.

Compared to the pre-transition period, the rate of reporting for other DOW beneficiaries, at any given time, was 36% lower (HR 0.64; 95% CI 0.62, 0.67) during the post-transition period, adjusting for estimated medical personnel and condition **(Table 5)**. Military hospitals and clinics with small and medium medical personnel estimates had reporting rates, at any given time, 12% higher (HR 1.12; 95% CI 1.07, 1.17), and 4% lower (HR 0.96; 95% CI 0.94, 0.99) than facilities with large medical personnel estimates, respectively **(Table 5)**. Compared to STIs, rate of reporting at any given time for respiratory conditions was lower by 66% (HR 0.34; 95% CI 0.33, 0.35), 55% for rabies prophylaxis (HR 0.45; 95% CI 0.41, 0.49), and 48% for GI conditions (HR 0.52; 95% CI 0.49, 0.54) **(Table 5)**.

FIGURE 2. Change in Average Reporting Time to DRSi Post-Transition to MHS GENESIS for Nine Most Frequent Reportable Medical Events, by Population, January 1, 2016–November 1, 2023



Abbreviations: DRSi, Disease Reporting System internet; MHS, Military Health System; PEP, post-exposure prophylaxis DOW, Department of War.

Sensitivity analyses

In sensitivity analyses excluding chlamydia and COVID-19, the direction of associations was generally unchanged in both populations, although several associations were attenuated **(Tables 4** and **5)**. The post-transition reduction in reporting rate decreased from 34% to 7% among ACSMs (HR 0.93; 95% CI 0.89, 0.97) and from 36% to 15% among other DOW beneficiaries (HR 0.85; 95% CI 0.79, 0.92). Among ACSMs, associations by medical personnel category were stronger in the sensitivity analysis, with higher reporting rates among facilities with small (HR 1.26; 95% CI 1.19, 1.34) and medium (HR 1.22; 95% CI 1.17, 1.27) medical personnel estimates versus large medical personnel estimates. Among other DOW beneficiaries, the association for small medical personnel facilities persisted (HR 1.18; 95% CI 1.05, 1.31), whereas the association for medium versus large medical personnel facilities was attenuated to null (HR 1.00; 95% CI 0.93, 1.07). Compared to STIs, reporting rates for other RMEs remained lower, although the magnitude differed by population. Among ACSMs, reporting rates for GI conditions were 37% lower (HR 0.63; 95% CI 0.60, 0.67), 32% lower for rabies prophylaxis (HR 0.68; 95% CI 0.62, 0.74), and 60% lower for respiratory conditions (HR 0.40; 95% CI 0.34, 0.46). Among other DOW beneficiaries, reporting rates were 8% lower for GI conditions (HR 0.92; 95% CI 0.87, 0.96), 22% lower for rabies prophylaxis (HR 0.78; 95% CI 0.71, 0.86), and 77% lower for respiratory conditions (HR 0.23; 95% CI 0.21, 0.25).

Discussion

After implementing MHS GENESIS, variations occurred in the timeliness of reporting medical encounters on DRSi reports, with some improving and others worsening compared to pre-MHS GENESIS. The large reporting time standard deviations observed for RMEs indicate substantial variability in reporting timeliness that is not fully captured by the means. The stability of median reporting times—generally within 1 day for most RMEs—suggests, however, that observed increases in mean reporting times may have been driven by a subset of cases with markedly delayed reporting rather than a broad deterioration in surveillance timeliness. While the reason for the delay in reporting timeliness is unknown based on available data, it may be indicative of more challenges with identifying RMEs through the EHR following the transition to MHS GENESIS.

A pilot study at 1 installation that was transitioning from the legacy EHR to MHS GENESIS found no meaningful differences in health care provider satisfaction, system usability, and "burnout" between the 2 systems; but satisfaction scores, system usability scores, and 'burnout' did not improve at 1, 6, and 12 months post-implementation, indicating some ongoing challenges with use of MHS GENESIS.[11] That pilot study was not replicated at other installations, so it may not be generalizable to the experiences of health care professionals throughout the MHS. According to a 2024 Government Accountability Office (GAO) report, self-reported satisfaction with MHS GENESIS increased from 2022 to 2024, but remained lower than with legacy systems.[6]

Active component RMEs were reported faster than other DOW beneficiaries' RMEs. This difference may be because service member reports are prioritized in a low-resource environment or because service members are more likely to receive care directly from a military hospital or clinic, rather than civilian care.

TABLE 4. Adjusted Hazard Ratios for Time of Reporting Nine Most Frequent Reportable Medical Events Among Active Component Service Members to DRSi, by Period, Estimated Medical Personnel Category and Event Category, January 1, 2016–November 1, 2023

Variable	Nine Most Frequent RMEs [b]			Chlamydia, COVID-19 Exclusion [c]		
	Hazard Ratio	95% CI		Hazard Ratio	95% CI	
		LL	UL		LL	UL
Period						
Post-transition vs. pre-transition—Reference	0.66	0.65	0.68	0.93	0.89	0.97
Estimated medical personnel category [a]						
Small vs. large—Reference	1.12	1.10	1.15	1.26	1.19	1.34
Medium vs. large—Reference	1.10	1.08	1.11	1.22	1.17	1.27
RME category						
Gastrointestinal infection vs. STI—Reference	0.37	0.35	0.39	0.63	0.60	0.67
Rabies prophylaxis vs. STI—Reference	0.42	0.38	0.45	0.68	0.62	0.74
Respiratory infection vs. STI—Reference	0.18	0.17	0.19	0.40	0.34	0.46

Abbreviations: DRSi, Disease Reporting System internet; RMEs, reportable medical events; COVID-19, coronavirus disease 2019; CI: confidence interval; LL, lower limit; upper limit; vs., versus; STI, sexually transmitted infection.
[a] Estimated medical personnel category full-time equivalent person-months: small, 1,413–3,314; medium, 3,315–8,401; large, 8,402–90,242.
[b] 25,741 censored (17.1%) of 150,544 records.
[c] 10,122 censored (34.6%) of 29,286 records.

TABLE 5. Adjusted Hazard Ratios for Time of Reporting Nine Most Frequent Reportable Medical Events Among Other Department of War Beneficiaries to DRSi by Period, Estimated Medical Personnel Category and Event Category, January 1, 2016–November 1, 2023

Variable	Nine Most Frequent RMEs[a]			Chlamydia, COVID-19 Exclusion[b]		
	Hazard Ratio	95% CI		Hazard Ratio	95% CI	
		LL	UL		LL	UL
Period						
Post-transition vs. pre-transition—Reference	0.64	0.62	0.67	0.85	0.79	0.92
Estimated medical personnel category[c]						
Small vs. large—Reference	1.12	1.07	1.17	1.18	1.05	1.31
Medium vs. large—Reference	0.96	0.94	0.99	1.00	0.93	1.07
RME category						
Gastrointestinal infection vs. STI—Reference	0.52	0.49	0.54	0.92	0.87	0.96
Rabies prophylaxis vs. STI—Reference	0.45	0.41	0.49	0.78	0.71	0.86
Respiratory infection vs. STI—Reference	0.34	0.33	0.35	0.23	0.21	0.25

Abbreviations: DRSi, Disease Reporting System internet; RMEs, reportable medical events; COVID-19, coronavirus disease 2019; CI: confidence interval; LL, lower limit; upper limit; vs., versus; STI, sexually transmitted infection.
[a] 30,116 censored (42.0%) of 71,700 records.
[b] 11,917 censored (59.8%) of 19,940 records.
[c] Estimated medical personnel category full-time equivalent person-months: small, 1,413–3,314; medium, 3,315–8,401; large, 8,402–90,242.

Compared to all other RME categories, STIs demonstrated higher reporting rates at any given time, likely reflecting the frequency with which these are reported and the more robust identification and reporting workflows established for high-volume conditions. Notably, chlamydia comprised 71% of all RMEs during the study period, benefitting from a straightforward laboratory workflow that directly feeds positive results into the DRSi, facilitating timely reporting. In contrast, GI and respiratory illnesses may be subject to greater under-reporting, as providers may forgo pathogen-specific testing when illnesses resolve with symptomatic management alone. Many RME case definitions require laboratory confirmation.

Prior to MHS GENESIS, laboratory results were uploaded daily, whereas MHS GENESIS laboratory results are uploaded weekly, which may contribute to slower reporting post-transition. In correspondence with the Defense Centers for Public Health (DCPH)–Portsmouth, the DRSi technical team noted that initial MHS GENESIS laboratory results were loaded into DRSi in November 2021, and gaps were identified in laboratory results imported to DRSi between February and April 2023. During those gaps, DRSi reporters relied on alternative case finding mechanisms while also learning a new EHR system, presenting a potential reason that the reporting rate decreased post-transition compared to the pre-transition period.

The sensitivity analyses excluding chlamydia and COVID-19 supported the overall robustness of the primary findings, with the direction of the associations remaining largely consistent between the full model and sensitivity analyses for both populations. Meaningful differences in the magnitude of the observed associations were revealed in both populations, however, particularly for the post-transition reporting rate. The attenuated findings suggest that the reporting dynamics of chlamydia and COVID-19 were primary drivers of the overall decline in RME reporting rates observed post-transition. Chlamydia likely exerted disproportionate influence on model estimates relative to other conditions. COVID-19, which emerged during the MHS GENESIS transition period, may have further compounded reporting disruptions through competing clinical and administrative priorities, staffing reductions, and changes in care-seeking behavior, all of which may have independently affected RME reporting timeliness regardless of the EHR transition.

A particularly notable finding emerged for respiratory conditions among other DOW beneficiaries, where the sensitivity analysis diverged from the pattern observed for all other condition categories. While most condition-specific associations were attenuated after excluding chlamydia and COVID-19, the reporting rate for respiratory conditions relative to STIs was stronger in the sensitivity analysis (77% lower; HR 0.23; 95% CI 0.21, 0.25) compared to the full model (66% lower; HR 0.34; 95% CI 0.33, 0.35). This finding suggests that COVID-19 may have inflated the respiratory RME reporting rates in the full model, partially masking the true magnitude of the difference between respiratory and STI reporting rates.

Among the active component population, less estimated medical personnel (e.g., small and medium categories) was associated with higher reporting rates of RMEs to DRSi, at any given time, to DRSi compared to MHS hospitals and clinics with large medical personnel estimates. The results were mixed for the other DOW beneficiary population, however. Military hospitals and clinics with medium or large medical personnel estimates have more cases of RMEs to report to DRSi. They may also have more resources at their disposal for crowdsourcing, building, and adopting new processes required to identify potential RMEs to report to DRSi. Estimated medical personnel was derived from FTE person-months for all medical personnel, however, and did not directly measure preventive medicine

or public health staffing resources allocated toward RME surveillance and reporting, which may have obscured the true relationship between public health capacity and reporting rates.

Regardless of the MHS GENESIS transition period, approximately 25% of the analyzed records were censored due to lack of reporting in DRSi. The administrative medical data do not provide insights into why specific RMEs were not reported to DRSi. RMEs are reported to the DRSi based on specific case definitions, which may differ from the criteria used to document medical diagnostic codes in the EHR. Providers may presumptively treat some conditions, such as STIs, prior to laboratory confirmation, which may not be reflected in the EHR. Furthermore, DRSi reporters are rarely the health care providers for patients diagnosed with an RME and rely on information available in the EHR, including laboratory results and an accurate description of symptoms to determine reportability. Reporters may have insufficient information to determine if a case should be reported to DRSi. A backlog of professionally-coded medical encounters, primarily admission records, occurred in FY 2023 and may have disproportionately affected RME reporting at specific installations such as Brooke Army Medical Center. MHS GENESIS features a Discern Reporting Portal for extraction of live EHR data for facilities under the DRSi reporter's responsibility, which are matched with the *Armed Forces Reportable Medical Events Guidelines and Case Definitions*. Anecdotally, DRSi reporters have noted limitations to the volume of data that can be extracted from the Discern Reporting Portal, an inability to view all ordered laboratory tests, and a requirement for physician certification of laboratory results that impedes ready communication of available results. DRSi allows manual data entry for some fields including sponsor and patient identifiers, which increases probability of errors that could prevent medical event report matching of medical encounters. Data entry errors were likely to occur at the same frequency, regardless of EHR transition period, during the surveillance period.

This analysis had several additional limitations. Estimated medical personnel FTEs may not be the best proxy for available public health staff who report RMEs; however, it is challenging to ascertain which resources are available for reporting at a given installation due to recurrent personnel transition. Second, the case definitions in **Table 1** did not include laboratory records, like the timeliness report by the Armed Forces Health Surveillance Division (2023), which are typically included for DRSi reporting and other surveillance case definitions.[5] Furthermore, complete case analysis was used in the Cox piecewise analysis with no prior missing data imputation; it is unknown if the data were missing completely at random, potentially due to gaps in case definitions or other aspects of the data systems. Finally, the Cox piecewise analysis did not include interaction terms; consequently, this analysis cannot attest to whether MHS hospitals and clinics with small or medium medical personnel estimates fared better in the post-transition period compared to MHS hospitals or clinics with large medical personnel estimates.

Timely DRSi reporting is crucial for monitoring RME trends and mitigating the spread of diseases within the DOW beneficiary population. These findings reveal that reporting rates at any given point were slower post-transition, after adjusting for estimated medical personnel and RME categories. Implementation of systematic monitoring for discontinuity between DRSi reporting and laboratory results should be prioritized to limit delayed reporting or unreported RME cases. This would provide reporters with a practical tool to identify and close reporting gaps. Further surveillance efforts should incorporate laboratory and medical encounter data to monitor metrics for reporting timeliness.

Author Affiliations

Disease Epidemiology Program, Defense Centers for Public Health–Aberdeen (DCPH–Aberdeen), Defense Health Agency, Aberdeen Proving Ground, MD: Mr. Smith, LTC Yun, Dr. Maule, Ms. McCrea, Ms. Aguirre, Ms. Scatliffe-Carrion, Dr. Malmi, Dr. Ambrose; Battelle Memorial Institute, supporting DCPH–Aberdeen: Ms. McCrea, Dr. Malmi; Oak Ridge Institute for Science and Education, supporting DCPH–Aberdeen: Ms. Aguirre

Disclaimers

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SUPPLEMENTARY TABLE 1. Percentages of Nine Most Frequent Reportable Medical Events Among Active Component Service Members by MHS GENESIS Transition Period and Match Type, January 1, 2016–November 1, 2023

Characteristics of Reporting		Total[a]		DRSi				DRSi + Medical				Medical Only			
				Pre-Transition		Post-Transition		Pre-Transition		Post-Transition		Pre-Transition		Post-Transition	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
		227,282	100	52,844	23.3	23,894	10.5	116,594	51.3	8,209	3.6	21,724	9.6	4,017	1.8
Source of information on health care provision															
DRSi only		76,738	33.8	52,844	100	23,894	100	—	—	—	—	—	—	—	—
MHS hospital or clinic		149,327	65.7	—	—	—	—	115,711	99.2	7,875	95.9	21,724	100	4,017	100
Civilian care		1,217	0.5	—	—	—	—	883	0.8	334	4.1	—	—	—	—
Category	RME														
STI	Chlamydia	177,336	78.0	39,994	75.7	19,501	81.6	99,107	85.0	5,555	67.7	11,351	52.3	1,828	45.5
	Gonorrhea	28,372	12.5	8,647	16.4	2,852	11.9	11,912	10.2	1,491	18.2	2,925	13.5	545	13.6
	Syphilis	9,195	4.0	559	1.1	252	1.1	3,027	2.6	696	8.5	4,039	18.6	622	15.5
Respiratory infection	COVID-19-associated hospitalization and death	1,999	0.9	651	1.2	231	1.0	199	0.2	30	0.4	801	3.7	87	2.2
	Influenza-associated hospitalization	1,846	0.8	741	1.4	144	0.6	711	0.6	55	0.7	170	0.8	25	0.6
Gastrointestinal infection	Norovirus	1,026	0.5	382	0.7	71	0.3	313	0.3	34	0.4	198	0.9	28	0.7
	Campylobacteriosis	3,947	1.7	288	0.5	242	1.0	798	0.7	179	2.2	1,678	7.7	762	19.0
	Salmonellosis	633	0.3	160	0.3	27	0.1	154	0.1	19	0.2	241	1.1	32	0.8
Rabies prophylaxis	Post-exposure prophylaxis (PEP) against rabies	2,928	1.3	1,422	2.7	574	2.4	373	0.3	150	1.8	321	1.5	88	2.2
Estimated medical personnel[b]															
Small		16,779	7.4	2,602	4.9	1,834	7.7	9,787	8.4	619	7.5	1,691	7.8	246	6.1
Medium		38,830	17.1	9,617	18.2	2,460	10.3	21,726	18.6	612	7.5	3,951	18.2	464	11.6
Large		171,673	75.5	40,625	76.9	19,600	82.0	85,081	73.0	6,978	85.0	16,082	74.0	3,307	82.3

Abbreviations: MHS, Military Health System; DRSi, Disease Reporting System internet; No., number; %, percentage; RME, reportable medical event; STI, sexually transmitted infection; COVID-19, coronavirus disease 2019; PEP, post-exposure prophylaxis.
[a] 55,857 records censored in analysis due to no matching medical record.
[b] Estimated medical personnel category full-time equivalent personnel months: small, 1,413–3,314; medium, 3,315–8,401; large, 8,402–90,242.

SUPPLEMENTARY TABLE 2. Percentages of Nine Most Frequent Reportable Medical Events Among Other Department of War Beneficiaries by MHS GENESIS Transition Period and Match Type, January 1, 2016–November 1, 2023

Characteristics of Reporting		Total[a]		DRSi				DRSi + Medical				Medical Only			
				Pre-Transition		Post-Transition		Pre-Transition		Post-Transition		Pre-Transition		Post-Transition	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
		98,385	100	19,082	19.4	7,603	7.7	38,661	39.3	2,923	3.0	24,951	25.4	5,165	5.2
Source of information on health care provision															
DRSi only		26,685	27.1	19,082	100	7,603	100	—	—	—	—	—	—	—	—
MHS hospital or clinic		70,530	71.7	—	—	—	—	37,752	97.6	2,662	91.1	24,951	100	5,165	100
Civilian care		1,170	1.2	—	—	—	—	909	2.4	261	8.9	—	—	—	—
Category	RME														
STI	Chlamydia	54,400	55.3	11,224	58.8	4,120	54.2	27,797	71.9	1,063	36.4	9,356	37.5	840	16.3
	Gonorrhea	8,289	8.4	2,043	10.7	522	6.9	3,389	8.8	268	9.2	1,846	7.4	221	4.3
	Syphilis	4,774	4.9	376	2.0	131	1.7	984	2.5	152	5.2	2,653	10.6	478	9.3
Respiratory infection	COVID-19-associated hospitalization and death	14,978	15.2	1,096	5.7	1,178	15.5	3,671	9.5	1,030	35.2	5,135	20.6	2,868	55.5
	Influenza-associated hospitalization	4,618	4.7	583	3.1	138	1.8	520	1.3	45	1.5	2,985	12.0	347	6.7
Gastrointestinal infection	Norovirus	2,905	3.0	680	3.6	444	5.8	227	0.6	83	2.8	1,321	5.3	150	2.9
	Campylobacteriosis	2,716	2.8	789	4.1	181	2.4	908	2.3	90	3.1	672	2.7	76	1.5
	Salmonellosis	2,433	2.5	828	4.3	161	2.1	868	2.2	61	2.1	457	1.8	58	1.1
Rabies prophylaxis	Post-exposure prophylaxis (PEP) against rabies	3,272	3.3	1,463	7.7	728	9.6	297	0.8	131	4.5	526	2.1	127	2.5
Estimated medical personnel[b]															
Small		4,674	4.8	907	4.8	466	6.1	1,996	5.2	115	3.9	1,087	4.4	103	2.0
Medium		11,970	12.2	2,688	14.1	472	6.2	5,778	14.9	137	4.7	2,664	10.7	231	4.5
Large		81,741	83.1	15,487	81.2	6,665	87.7	30,887	79.9	2,671	91.4	21,200	85.0	4,831	93.5

Abbreviations: MHS, Military Health System; DRSi, Disease Reporting System internet; No., number; %, percentage; RME, reportable medical event; STI, sexually transmitted infection; COVID-19, coronavirus disease 2019; PEP, post-exposure prophylaxis.
[a] 55,857 records censored in analysis due to no matching medical record.
[b] Estimated medical personnel category full-time equivalent personnel months: small, 1,413–3,314; medium, 3,315–8,401; large, 8,402–90,242.

Brief Report

End of 2025–2026 Season Influenza Vaccine Effectiveness Estimates Using Routine Surveillance Data for Non-Service Member Beneficiaries of the Military Health System

Bismark Kwaah, MPH; Laurie S. DeMarcus, MPH; Whitney N. Jenkins, MPH, DrPH; Khabira H. Salter, MS, PhD; William E. Gruner, MS, MB(ASCP); Tamara R. Hartless, MPH; Victor K. Heh, PhD; Deanna Muehleman, PhD; Anthony C. Fries, PhD; Fabrice E. Evengue, MPH, DHSc

Due to the evolving nature of influenza viruses, the Department of Defense Global Respiratory Pathogen Surveillance Program (DoDGRPSP) conducts worldwide, year-round influenza surveillance of Military Health System (MHS) dependent populations. Specimens collected by DoDGRPSP are submitted to the epidemiology laboratory at the Defense Centers for Public Health–Dayton (DCPH-D), Ohio, and the laboratory at Landstuhl Regional Medical Center (LRMC), Germany for analyses that inform test-negative, case-control studies to estimate end of season influenza vaccine effectiveness (VE). Influenza vaccine adjustments are required each year due to antigenic drift and shifts in circulating strains over time. Each influenza season, DoDGRPSP's VE findings are presented to the U.S. Food and Drug Administration's advisory committee to help inform strain selection for the next season's influenza vaccine. This report analyzes end of season influenza VE for MHS dependents against symptomatic, laboratory-confirmed influenza, treated in an outpatient, or ambulatory care, facility.

Methods

During the 2025-2026 influenza season, a total of 1,906 specimens were tested (1,356 by DCPH-D, 550 by LRMC) that provided the data for a test-negative, case-control influenza VE study. Respiratory specimens were collected from MHS dependents who presented at an outpatient, or ambulatory care, clinic with influenza-like illness (ILI). Influenza cases and subtypes were identified using multiplex reverse transcription–polymerase chain reaction (RT-PCR) panels or viral culture; control specimens were ILI patients who tested negative for influenza.

The vaccination statuses of cases in this study were ascertained from either electronic immunization records—namely, MHS GENESIS, MHS Data Repository, MHS Management Analysis and Reporting Tool, and Aeromedical Services Information Management System—or self-reporting through DoDGRPSP patient questionnaires. Individuals were considered vaccinated if they had received the 2025-2026 seasonal influenza vaccine at least 14 days prior to specimen collection. Those who were vaccinated within 14 days of specimen collection were excluded. Additionally, electronic medical records and questionnaires were also utilized to obtain demographic and clinical information including symptomology such as fever, cough, headache, chills, sore throat, runny nose, fatigue, body ache, sinus congestion, dyspnea, loss of taste or smell, diarrhea, vomiting or nausea, and acute respiratory distress. Military service members (due to their generally high influenza vaccination rate), outpatients younger than age 6 months (who are ineligible to receive the vaccine), and the elderly population (age 65 years or older, due to small sample size) were excluded from the VE analysis.

Multivariable logistic regression was used to calculate adjusted odds ratios (aORs), and VE was calculated as 1 minus (-) aOR times (×) 100, adjusting for potential confounding factors, age group (children ages 0-17 years, adults ages 18-64 years), specimen collection month (November–April), and geographic region (Eastern U.S., Western U.S., outside continental U.S.). U.S. Department of Health and Human Services regions 1-5 were grouped to constitute the Eastern U.S. and regions 6-10 were grouped to constitute the Western U.S. VE was estimated against influenza by type and subtype using age-stratified models among dependents. Separate models were developed for all influenza types/subtypes combined, influenza A, influenza B, and influenza A(H3N2). Due to insufficient data, models for influenza A(H1N1) pdm09 could not be stratified by age group. All statistical analyses were performed using SAS version 9.4 (SAS Institute, Inc., Cary, NC).

Results

From November 16, 2025 through April 18, 2026, a total of 561 influenza cases and 1,345 controls were identified in this study, of which 373 (66.5%) cases and 965 (71.7%) controls were vaccinated against influenza. Among vaccinated cases and controls, 60.8% received egg-based vaccines, 13.8% received cell-based vaccines, 1.5% received recombinant vaccines, and 23.9% received an unknown vaccine type, according to electronic immunization records (data not shown). Vaccination rates for cases and controls were 57.4% and 67.0% among adults and 69.5% and 74.8% among children, respectively **(Table)**.

Among all influenza-positive cases, 74.5% (n=418) were influenza A and 25.5% (n=143) were influenza B. Among the cases of influenza A, 62.0% (n=259) were influenza A(H3N2), 31.1% (n=130) were influenza A/not subtyped, and 6.9% (n=29) were influenza A(H1N1)pdm09. After adjustments for age group, month of specimen collection, and geographic region, VE was 30% (95% confidence interval [CI] 12, 45) in all dependents, and 34% (95% CI 2, 56) in adults and 23% (95% CI -2, 43) in children. The VE against influenza A (any subtype) cases (65.8% vaccinated) was 38% (95% CI 19, 53) for all dependents, and 38% (95% CI 4, 60) among adults and 31% (95% CI 3, 50) among children. Among the 259 influenza A(H3N2) cases (52.9% vaccinated), VE was 53% (95% CI 38, 64) for all dependents, 63% (95% CI 39, 78) for adults, and 52% (95% CI 31, 66) for children. Adjusted VE against any influenza type in children and influenza B and A(H1N1)pdm09 among all age dependents were not statistically significant **(Table)**. Statistically significant VE against influenza A (any subtyped) and influenza A(H3N2) was observed among all populations.

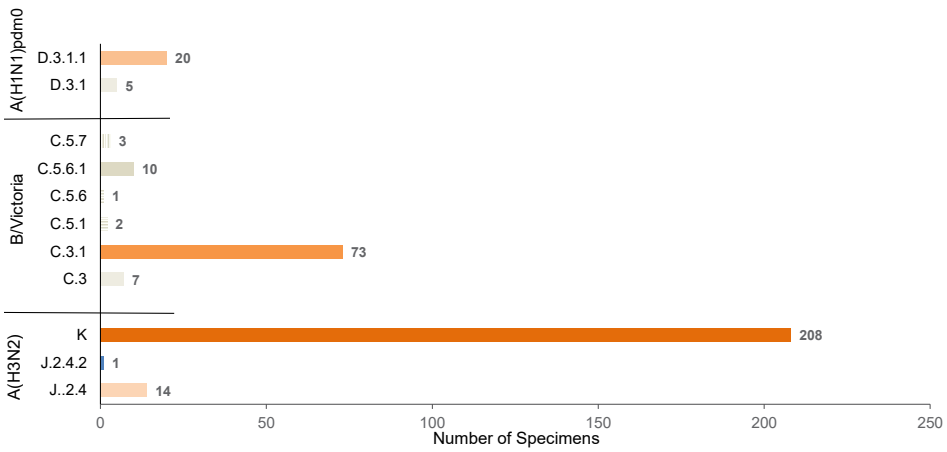
Among the 259 influenza A(H3N2)-positive specimens, 223 were sequenced. Analysis identified 208 specimens as subclade K, while 14 were J.2.4, and 1 was J.2.4.2. Among the 143 influenza B-positive specimens, 96 were sequenced, and 73 were identified as subclade C.3.1, with 10 identified as subclade C.5.6.1, 7 as subclade C.3, 3 as subclade C.5.7, 2 as subclade C.5.1. and 1 as subclade C.5.6. Among the 29 influenza A(H1N1)pdm09-postive specimens, 25 were sequenced, with 20 identified as subclade D.3.1.1 and 5 identified as subclade D.3.1 **(Figure)**.

TABLE. Influenza Vaccine Effectiveness Against Symptomatic Laboratory-Confirmed Ambulatory Influenza, Military Health System Dependents, 2025-2026 Season

Type of Influenza	Population	Vaccination Status	Cases		Controls		Unadjusted VE	95% CI		Adjusted VE[a]	95% CI	
			No.	%	No.	%		LL	UL		LL	UL
Overall	All dependents	Yes	373	66.5	965	71.7	22	3	37	30	12	45
		No	188	33.5	380	28.3						
Overall	Adults	Yes	81	57.4	355	67.0	33	3	54	34	2	56
		No	60	42.6	175	33.0						
Overall	Children	Yes	292	69.5	610	74.8	23	0	41	23	-2	43
		No	128	30.5	205	25.2						
A (any subtype)	All dependents	Yes	275	65.8	965	71.7	24	4	40	38	19	53
		No	143	34.2	380	28.3						
A (any subtype)	Adults	Yes	66	56.4	355	67.0	36	4	58	38	4	60
		No	51	43.6	175	33.0						
A (any subtype)	Children	Yes	209	69.4	610	74.8	24	-2	43	31	3	50
		No	92	30.6	205	25.2						
A(H3N2)	All dependents	Yes	137	52.9	965	71.7	56	42	66	53	38	64
		No	122	47.1	380	28.3						
A(H3N2)	Adults	Yes	31	41.3	355	67.0	65	43	79	63	39	78
		No	44	58.7	175	33.0						
A(H3N2)	Children	Yes	106	57.6	610	74.8	54	36	67	52	31	66
		No	78	42.4	205	25.2						
A(H1N1)pdm09	All dependents	Yes	18	62.1	965	71.7	36	-38	70	32	-46	69
		No	11	37.9	380	28.3						
B	All dependents	Yes	98	68.5	965	71.7	14	-24	41	18	-24	46
		No	45	31.5	380	28.3						
B	Adults	Yes	15	62.5	355	67.0	18	-91	65	30	-67	71
		No	9	37.5	175	33.0						
B	Children	Yes	83	69.7	610	74.8	23	-18	49	12	-39	44
		No	36	30.3	205	25.2						

Abbreviations: VE, vaccine effectiveness; %, percent(age); CI: confidence interval; No., number; LL, lower limit; UL, upper limit.
[a] Adjusted for age group (children ages 0-17 years, adults ages 18-64 years), geographic region and month of illness.

FIGURE. Genetic Characterization of Influenza Viruses by (Sub)Clade, Military Health System Dependents, 2025-2026 Season



Discussion

These study findings indicate that seasonal VE during the 2025-2026 influenza season was effective in preventing laboratory-confirmed influenza, especially influenza A(H3N2), for which VE ranged 52–63% among all age groups. The 2025-2026 influenza season revealed predominant circulation of influenza A(H3N2) (subclade K) viruses within DoDGRPSP study samples, similar to the interim results from other studies.[1-3] The results of this study suggest that influenza vaccination reduced odds of medical care for influenza infection among the MHS non-service member population by approximately 30%, slightly lower than the 36% and 44% early influenza reports in France and Europe, respectively.[3,4]

DoDGRPSP analyses suggest low-to-moderate protection against influenza A for all populations including influenza A(H3N2) during the 2025-2026 season. DoDGRPSP estimates of VE against influenza B among all age groups after vaccination were not significant. A possible factor that could explain the ineffectiveness observed for influenza B is that primary analysis did not capture individual continuums, from inoculation to exposure. Vaccination against A(H1N1)pdm09 also did not reach statistical significance, likely due to the low case count. Another potential contributing factor in observed variations in VE across strains could be the temporal relationship between vaccine administration and the peak period of viral circulation. This observation is supported by studies from Australia and the U.S. that indicate VE starts to decline 3–6 months after administration among observed patients.[5,6]

Seasonal dominance of influenza A(H3N2) viruses is generally associated with lower VE. The moderate VE observed for the 2025-2026 season is not an unexpected result but part of a recurring pattern, particularly in recent influenza seasons, when A(H3N2) predominates. The consistency of these results implies that vaccine strain selection and efficacy prediction methods are functioning as expected. Although estimated VE was moderate, it remained within a predictable range[7,8]; interim estimates from Canada for this influenza season were for 54% overall VE.[9] DoDGRPSP sequencing data indicate that influenza A(H3N2) subclade K drifted antigenically after the 2024-2025 season. Available interim VE estimates from Canada, China, England, and France support this finding.[1-3,10]

Adjusted VE estimation against influenza A(H3N2) in the DoDGRPSP adult group (63%) was higher than interim reports from Europe, whereas VE against influenza A(H3N2) among children (52%) remained within the range observed in the European studies (51–82%).[2,4] These inconsistencies with reported A(H3N2) VE could be associated with age-specific coverage. Early seasonal data from China indicated lower VE (41.3%, 95% CI 29, 51) compared to DoDGRPSP data (53%, 95% CI 38, 64).[1] DoDGRPSP estimates of overall adult VE, however, are consistent with the interim report from the Virtual SARS-CoV-2, Influenza, and Other respiratory viruses Network (VISION).[11]

Estimated VE against influenza A (any subtype) among adults and all dependents was similar to the 38% (95% CI 27, 47) estimate from Canada[10]; influenza A (any subtype) VE in children was low and statistically significant when compared to estimated VE in Canada.[10] Estimates of VE against influenza B for children as well as adults were comparable to the recent US Flu VE network estimates despite overlapping CIs throughout.[11] Previous studies had observed high statistical significance for VE against influenza B among MHS beneficiaries.[12] This could be at least partially explained by the low levels of influenza B circulation in North America.

The findings in this report are subject to several limitations. First, patients who received 1 dose of the 2025-2026 influenza vaccine were considered vaccinated, but children ages 6 months to 8 years are recommended 2 doses if 1) never vaccinated against influenza, 2) had not received at least 2 vaccine doses prior to July 1, 2025, or 3) vaccination history was unknown.[13] Consequently, some children who were classified as vaccinated may not have been fully vaccinated, which could reduce VE estimation accuracy, resulting in non-significant VE among children for influenza overall, influenza A, and influenza B. Second, small sample sizes of cases in varying populations prevented VE estimation for influenza A(H1N1)pdm09 and influenza B in some age groups. Third, although VE can vary by production method, this analysis did not differentiate between the egg- and cell-based influenza vaccines received by the study population. Finally, the wide CIs in both age strata, and particularly the imprecision in the pediatric estimate, reflect limited statistical power for subgroup analysis. Larger studies or pooled multi-season data would be necessary for more definitive conclusions about age-specific VE. Combining data from multiple

influenza seasons may permit influenza VE analysis of relationships between VE and several viral and host factors.

DoDGRPSP analyses of virus subtypes after influenza vaccination during the 2025-2026 influenza season revealed moderate viral protection against influenza A(H3N2), the dominant strain among specimens collected for this study. In addition, DoDGRPSP estimates indicate that the 2025-2026 vaccine reduced influenza-associated outpatient health care visits by approximately 30%. Overall, these DoDGRPSP findings support promotion of influenza vaccination in concert with other preventive measures, such as proper handwashing techniques and appropriate social distancing during the infectious period of the illness.

Author Affiliations

Defense Centers for Public Health–Dayton, Public Health Directorate, Defense Health Agency, Wright-Patterson Air Force Base, Dayton, OH: Mr. Kwaah, Ms. DeMarcus, Dr. Jenkins, Dr. Salter, Ms. Hartless, Dr. Heh, Dr. Fries, Dr. Evengue, Mr. Gruner, Dr. Muehleman; JYG Innovations, LLC, Dayton: Mr. Gruner, Dr. Muehleman; Innovative Element, LLC, Beavercreek, OH: Mr. Kwaah, Ms. DeMarcus, Dr. Jenkins; Dr. Salter, Ms. Hartless, Dr. Heh; U.S. Air Force School of Aerospace Medicine Epidemiology Laboratory, Wright-Patterson Air Force Base: Dr. Fries

Disclaimers

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

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Surveillance Snapshot

Trends in Tobacco Use and Cessation Counseling Encounters Among U.S. Active Component Service Members, 2018–2025

Kristen R. Rossi, MPH; Scott J. Russell, MPH; Sithembile L. Mabila, PhD, MSc

Recent studies highlight shifting tobacco consumption patterns among national and military populations.[1,2] Nationally, increasing electronic cigarette ('e-cigarette') use has coincided with a corresponding decrease in traditional cigarette smoking among U.S. adults.[1] Concurrently, tobacco cessation counseling services within the Military Health System (MHS) has steadily declined.[2] To address these evolving dynamics, this Surveillance Snapshot describes self-reported tobacco product use in conjunction with trends of coded encounters for tobacco cessation counseling from 2018 through 2025 among U.S. active component service members (ACSMs).

Annual tobacco use prevalence among ACSMs was determined through the Periodic Health Assessment (PHA), from which service members from all branches of the U.S. Armed Forces who reported any tobacco use within the last 30 days were counted as users; annual trends for the most common single-use tobacco products were also evaluated. To evaluate clinical cessation support, medical encounters were identified using either an International Classification of Diseases, 10th Revision (ICD-10) diagnosis code (Z71.6) or Current Procedural Terminology (CPT) codes (99406, 99407) for tobacco cessation counseling. The annual proportion of ACSM tobacco users receiving clinical cessation therapy was estimated by dividing the number of ACSMs with at least 1 counseling encounter by the total number of self-reported tobacco users identified via the PHA.

Overall, the prevalence of any self-reported tobacco use declined steadily, from 25.5% in 2018 to 20.4% in 2025 (data not shown). As shown in the **Figure**, use of traditional tobacco products such as cigarettes and chewing tobacco declined throughout the surveillance period. Notably, cigarette use among service members ages 18-24 years fell from 14.1% to 6.0%, while prevalence for all other age cohorts dropped below 4.0% by 2025 (data not shown). Concurrently, clinical engagement for tobacco cessation declined, falling from 7.6% in 2018 to a low of 1.8% in 2024.

In contrast, e-cigarette use increased during the surveillance period, surpassing traditional cigarettes after 2020 and peaking in 2022 to become the most reported product. E-cigarette use nearly doubled between 2018 and 2023 in both the Army (7.4% to 14.6%) and Marine Corps (9.8% to 18.5%) (data not shown). Over the 8-year period, reported snus (tobacco pouch) use nearly tripled (0.6% to 1.7%), and dissolvable tobacco increased more than 17-fold, although its absolute prevalence remained low (0.04% to 0.70%) (data not shown).

Several methodological caveats should be considered when interpreting these data. Because this analysis relies strictly on structured CPT and diagnostic billing codes, it measures dedicated, timed counseling sessions rather than brief, point-of-care screenings. Additionally, this analysis does not include other critical components of cessation such as pharmacotherapy. The decline in documented counseling could indicate a shift in treatment approaches, with health care providers potentially focusing on medication-based therapies without separately-coded counseling sessions. Since this analysis employed population-level estimates rather than deterministic individual records, it could not verify that every individual in the numerator (i.e., clinical encounter) was represented in the denominator (i.e., self-reported PHA tobacco users). Consequently, the calculated proportions represent a population-level estimate of counseling services relative to estimated prevalence. Finally, the estimation of tobacco users from self-reported data may be under-estimated due to social desirability bias, as demonstrated in prior analyses.[3]

The discordant trends in clinical encounters for cessation counseling and e-cigarette use require additional study. Future analyses should integrate and investigate pharmacy data for cessation medications. Evaluating pharmacological records as well as clinical encounter trends will clarify whether the decline in coded encounters for counseling cessation reflects a genuine gap in care or a systemic shift toward medication-centric treatment models.

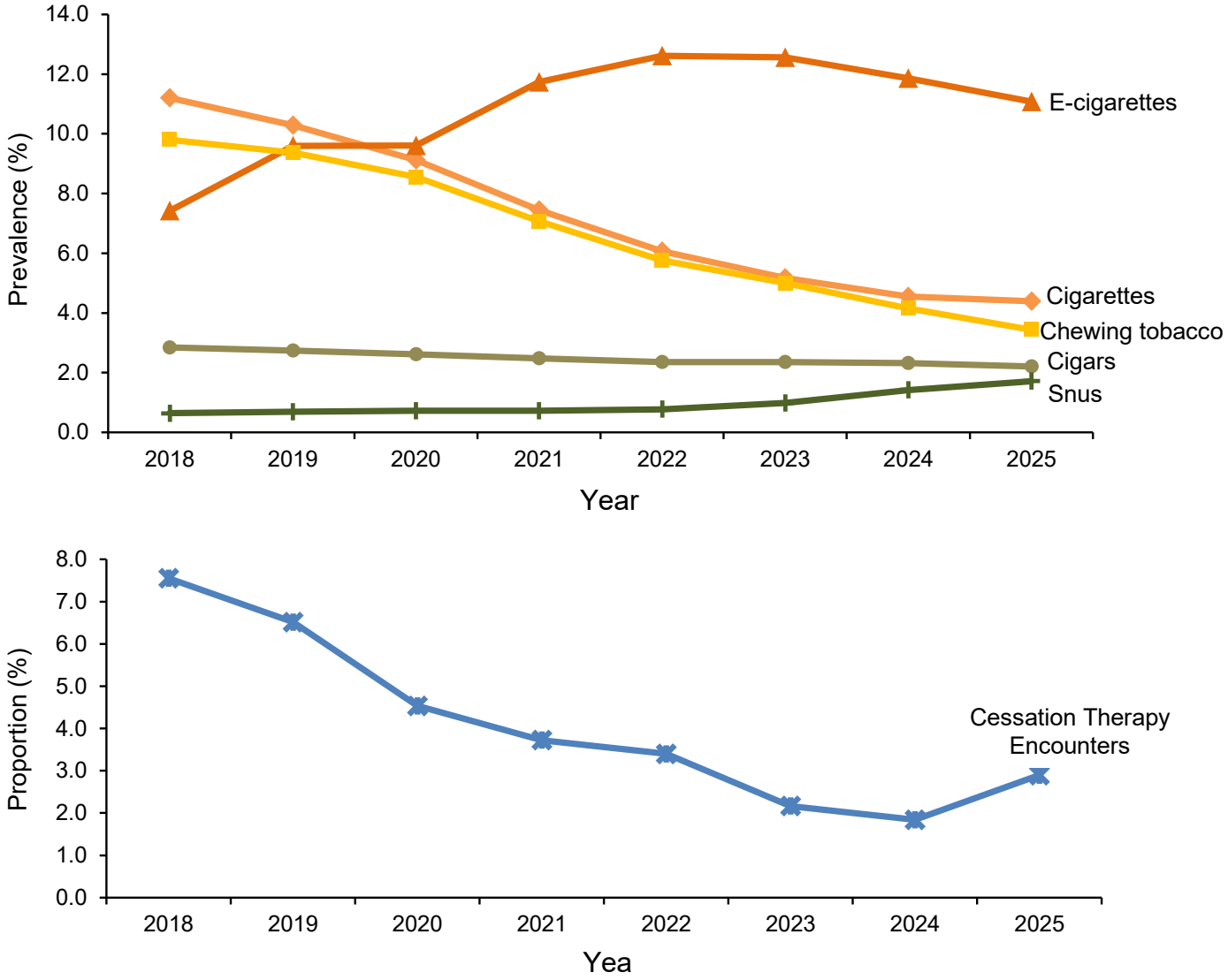
Authors' Affiliation: Epidemiology and Analysis Branch, Armed Forces Health Surveillance Division, Public Health Directorate, Defense Health Agency, Silver Spring, MD: Ms. Rossi, Mr. Russell, Dr. Mabila

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FIGURE. Self-Reported Prevalence of Tobacco Products[a] and Estimated Proportion of Tobacco Users with Cessation Therapy Encounters[b], Active Component, U.S. Armed Forces[c], 2018–2025



Abbreviations: %, percentage; E-cigarettes, electronic cigarettes; PHA, Periodic Health Assessment.
[a] Self-reported tobacco use from the PHA defined as a positive response to using any of the following products within the last 30 days: cigarettes, cigars, chewing tobacco, e-cigarettes, hookahs, pipes, snus, dissolvable tobacco, bidis, and other tobacco products. The 5 most common single use products are depicted in the figure.
[b] Determined from diagnostic or procedural codes for tobacco cessation counseling (ICD-10, Z71.6; CPT, 99406, 99407) to identify the number of service members receiving a clinical encounter each year; the estimated proportion of tobacco users receiving these services was then calculated using the self-reported data from the PHA as the denominator.
[c] Includes active component members of the Army, Navy, Air Force, Marine Corps, Space Force, and Coast Guard.

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