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Changing of the Guard: MSMR's Second Editor-in-Chief Retires

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Dr. Francis (Frank) O'Donnell joined the *Medical Surveillance Monthly Report*'s editorial team in 2009, becoming its second editor-in-chief (EIC) 2 years later, in November 2011, when he replaced Dr. John Brundage. Dr. O'Donnell had a long and illustrious career in military medicine, retiring from active duty in 2002, following 30 years as an Army physician. Until joining the *MSMR* team he worked in various positions supporting military medicine after his retirement from the Army. He remained steady at the helm for 11 of *MSMR*'s 26 years in publication. Dr. O'Donnell ushered in changes that protected *MSMR*'s editorial independence and preserved its important function as a repository for comprehensive health surveillance and public health issues relevant to the combat mission of the U.S. military.

Under Dr. O'Donnell's editorial leadership, *MSMR* published articles on a range of infectious disease topics uniquely important to the military, such as malaria and norovirus.[1,2] Dr. O'Donnell understood the importance of preserving this information for current and future military public health professionals and policy makers. *MSMR*'s publications during the COVID-19 pandemic have offered, and will continue to, a historical perspective of the U.S. military experience. Between 2020 and 2022, *MSMR* published articles about vaccination, immunity, whole genome sequencing, diagnostic coding validity, mental health, physical activity, obesity, recruit health, and other related topics.

He also upheld *MSMR*'s focus on environmental and occupational health surveillance for issues such as noise-induced hearing loss, burn pits, heat and cold injuries, and snake bites. Dr. O'Donnell invited manuscripts that addressed unproven perceptions of different occupations, like the belief that submariners father more girls than boys, which was not supported by birth statistics.[3]

Dr. O'Donnell advocated for original submissions that informed broader public health issues, notably vaccination policies. *MSMR*'s tick-borne encephalitis surveillance articles were referenced by professional organizations that recommend vaccines.[4,5,6] He also aided the archiving of adenovirus vaccination efforts in military boot camps. *MSMR* reports described the near elimination of adenovirus infections in military boot camps after the reintroduction of an oral vaccine.[7]

He safeguarded *MSMR*'s reputation for validating case definitions using military health and administrative data. During his tenure as EIC, Dr. O'Donnell approved the publication of several articles that assessed the predictive value of data elements like reportable medical events and questions on military health surveillance assessments, many of which remain a basis for routine health surveillance reports.[8,9] He also led the annual review of new diagnostic codes for inclusion in the *MSMR* annual issue on disease burden and health care utilization, which continues to be the most read and referenced issue each year.[10,11] This annual issue defines military force health protection and research priorities. It also defines priorities for the Military Health System and targets for health promotion or other interventions.

MSMR bids farewell to Dr. O'Donnell as we usher in a change in leadership, operating practices, and governance. *MSMR*'s mission will not change: *MSMR* will continue to exist as a resource for public health surveillance with a broad scope of topics that generate hypotheses and spur future investigations or updates in policy. *MSMR*'s editorial and publication team congratulates Dr. Francis O'Donnell on 11 influential years as Editor-in-Chief of the journal, and wishes him the very best in his retirement after 50 years of steadfast service to the Department of Defense.

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Brief Report

Hospitalizations Among Active Duty Members of the U.S. Coast Guard, Fiscal Year 2021

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The Department of Defense (DOD) publishes annual hospitalization trends for active component members of the U.S. Armed Forces. These published reports describe demographics, duration of stay, and hospitalization rates by disease categories.[1] Due to missing data, however, these reports have not included hospitalization data for U.S. Coast Guard (USCG) service members since 2015.[2]

The Coast Guard is a military service within the Department of Homeland Security (DHS) that provides limited primary care for its personnel through 43 outpatient clinics but does not maintain inpatient facilities.[3] USCG service members are eligible for health care through DOD's TRICARE Prime program, including direct care at military hospitals and purchased care through TRICARE networks of civilian providers.

This report presents USCG hospitalization data for fiscal year (FY) 2021 to explore the extent of data completeness. The second aim is to describe utilization differences by comparing previously published DOD active component hospitalization data for the calendar year 2021.[1]

Methods

This report utilizes USCG hospitalization data from the Military Health System Management and Reporting tool, also known as MHS MART or M2, which includes both non-military hospitals covered by TRICARE (purchased care) and DOD military hospitals (direct care). The study population consisted of all USCG members on active status for at least 30 days between October 1, 2020 and September 30, 2021 that produced an inpatient data record from a hospital stay and discharge date before October 1, 2021. Home health agency admissions, observational stays, and inpatient records generated from USCG Defense Medical Information System (DMIS) IDs were assumed to be observational stays and were excluded from this study.

Diagnostic categories were based on the primary condition for hospitalization[4] and classified using the letter and first 2 numeric digits of the corresponding International Classification of Diseases 10th Revision (ICD-10) code. The fourth ICD-10 digit was evaluated to more specifically quantify the 10 most frequent primary causes of hospitalization. Rate calculations per 1,000 personnel utilized USCG workforce data from October 2020, which indicated a total force strength of 40,558.[5] Category-specific rates were not calculated for hospitalization counts under 20 due to estimate instability.[6] The length of stay was calculated as the difference (in days) between end date of care and start date of care. All descriptive statistics were calculated using Excel 2018 (Microsoft Corp).

The USCG Commandant Institutional Review Board determined this work relates to public health surveillance and monitoring for programmatic improvement and does not constitute research.

Results

In FY 2021, the estimated USCG active duty service member yearly hospitalization rate (28.8 per 1,000 persons) was substantially lower than the rate reported for the DOD active component (48.0 per 1,000 person-years [p-yrs]) in calendar year (CY) 2021 **(Table 1)**. While most hospitalizations among USCG service members occurred at non-military hospitals (84.3%), active component DOD service members primarily received care at military hospitals (only 36.6% were hospitalized at non-military hospitals during CY 2021).[1] In both populations, the median duration of hospital stay (for all causes) was 3 days, with the maximum median duration of stay (USCG: 7 days; DOD: 6 days) observed for mental health hospitalizations **(data not shown)**.[1]

The estimated rates of hospitalization for all major diagnostic categories were lower among USCG active duty service members, with the exception of digestive disorder hospitalizations among women. When excluding pregnancy-related hospitalizations, hospitalization rates remained higher for both USCG and DOD women, compared to their male counterparts (33.5% and 43.6% higher, respectively). The 4 most frequent major diagnostic categories for hospitalization included pregnancy and delivery, mental health conditions, injury/poisoning, and digestive disorders, as shown in **Table 1**. **Table 2** depicts the 10 most frequent causes assessed through the fourth digit ICD-10 code. While adjustment disorders accounted for the most frequent primary cause of mental health disorder hospitalizations in DOD active component service members (10.2%), alcohol dependence was the most common diagnosis among hospitalized USCG active duty service members (8.9%).

TABLE 1. Hospitalizations, by ICD-10 major diagnostic category and sex, active duty USCG FY 2021 and active component DOD CY 2021

	USCG FY 2021		DOD CY 2021[a]		Rate Ratio
Major diagnostic category (ICD-10 code)	No.	Rate[b]	No.	Rate[c]	USCG/DOD
Total hospitalizations	1,163	28.8	64,062	48.0	0.60
Men	672	19.7	36,966	33.5	0.59
Mental disorder (F01-F99)	258	7.6	14,985	13.9	0.55
Digestive system (K00-K95)	93	2.7	4,129	3.8	0.70
Injury or poisoning (S00-T88)	73	2.1	4,623	4.3	0.49
Musculoskeletal system (M00-M99)	65	1.9	3,109	2.9	0.66
Circulatory system (I00-I99)	31	0.9	1,354	1.3	0.72
COVID-19 (U07.1)[d]	31	0.9	.	.	.
Nervous system and sense organs (G00-G99, H00-H95)	25	0.7	929	0.9	0.81
Neoplasm (C00-D49)	22	0.6	750	0.7	0.86
Women[e]	491	79.1	26,106	113.0	0.70
Pregnancy and delivery (O00-O9A, relevant Z codes)	327	52.8	14,989	60.5	0.87
Mental disorder (F01-F99)	54	8.7	5,068	20.5	0.43
Digestive system (K00-K95)	24	3.9	863	3.5	1.12

[a]Armed Forces Health Surveillance Division. Hospitalizations, Active Component, U.S. Armed Forces, 2021. *MSMR*. 2022;29(6);10-16.
[b]Rates are expressed per 1,000 persons and presented for frequencies above 20 hospitalizations.
[c]Rates are expressed per 1,000 person-years (p-yrs).
[d]The CY 2021 hospitalization report for DOD active component did not assess COVID-19 rates by sex, but reported an overall rate of 0.7 per 1,000 p-y among all services.
[e]Female rate includes hospitalizations for pregnancy-related conditions.
Abbreviations: ICD-10, International Classification of Diseases, 10th Revision; USCG, U.S. Coast Guard; FY, fiscal year; DOD, Department of Defense; CY, calendar year; No., number.

TABLE 2. Most frequent primary cause for hospitalization,[a] active duty USCG FY 2021 and active component DOD CY 2021

	USCG FY 2021		DOD CY 2021[b]	
Primary diagnostic category	No.[c]	%	No.	%
	1,163		64,062	
Alcohol dependence	104	8.9	2,657	4.1
Major depressive disorder, recurrent, severe without psychotic features	51	4.4	1,906	3.0
Post-term pregnancy	47	4.0	1,121	4.3
Adjustment disorder	41	3.5	6,504	10.2
Maternal care due to uterine scar from previous surgery	29	2.5	833	3.2
COVID-19	27	2.3	990	1.5
Other and unspecified acute appendicitis	22	1.9	1,199	1.9
Gestational [pregnancy-induced] hypertension without significant proteinuria, complicating childbirth	21	1.8	705	2.7
Major depressive disorder, single episode, severe without psychotic features	18	1.5	1,906	3.0
Major depressive disorder, single episode, unspecified	15	1.3	1,685	2.6
Post-traumatic stress disorder	15	1.3	1,098	1.7
Other specified diseases and conditions complicating pregnancy, childbirth and puerperium	15	1.3	.	.

[a]Primary cause classified from fourth character position of ICD-10 code.
[b]Armed Forces Health Surveillance Division. Hospitalizations, Active Component, U.S. Armed Forces, 2021. *MSMR*. 2022;29(6);10-16.
[c]Ten most frequent causes for hospitalization among USCG active duty service members during FY 2021 are presented; last 3 categories were tied as the 10th most common primary cause for hospitalization.
Abbreviations: International Classification of Diseases, 10th Revision (ICD-10); USCG, U.S. Coast Guard; FY, fiscal year; DOD, Department of Defense; CY, calendar year; No., number.

Discussion

The 40% lower observed rate of hospitalization among USCG active duty service members compared to the DOD active component indicates that concerns raised in 2015 regarding incomplete capture of USCG hospitalization data have not been completely addressed.[2] In relatively large populations comparable in age, gender, medical screening, and work status, there is an expectation that hospitalization rates will be very similar. Despite this possibility of incomplete data, the FY 2021 USCG active duty service member population shares specific characteristics with CY 2021 data[1] from other military services. Observed similarities include common major diagnostic categories (mental health, pregnancy-related, injury/poisoning, and digestive disorders); concordance among 8 of the 10 most common primary causes for hospitalization; comparable durations of stay; and increased non-pregnancy-related hospitalization rates among women. These similarities imply that the hospitalization data obtained through M2 are likely a representative sample of the full dataset.

When excluding pregnancy-related hospitalizations, mental health conditions represent the most common major diagnostic category among both men and women. Six separate primary diagnostic categories within this major category accounted for 21.0% of all hospitalizations among USCG active duty service members.

This analysis is subject to additional limitations beyond the potential of data incompleteness. First, this paper calculated USCG hospitalization rates differently from those reported for the DOD, which utilized the total number of days of active component service during which a service member was considered at risk for a given condition. Given the minor change in USCG active duty end strength over the study period (40,421 on October 1, 2020 and 40,487 on October 1, 2021), however, the difference in rate calculation methodology would not likely significantly affect the results. Second, as this analysis is based on primary (first-listed) discharge diagnoses only, it does not account for multiple underlying conditions that may have contributed to hospital stays.

An exploration of the sources and potential solutions for this data incompleteness would be an important next step for accurately capturing USCG hospital utilization. An analysis of hospitalizations by type of care (direct vs. purchased) as well as facility for a longitudinal period may better define areas of incomplete data capture. Future analyses should also explore additional covariates, including age, to align rate calculation methods for facilitating comparability of hospitalization data with other military services.

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Historical Perspective

The Critical Role of Disease and Non-Battle Injuries in Soldiers Isolated on Pacific Islands During the Second World War

G. Dennis Shanks, MD, MPH (COL [RET], USA)

"*The jungle will finish them for us.*"
–General Douglas MacArthur, 1943[1]

"One regiment was reduced to the fighting strength of a platoon."
–Imperial Japanese Army post-war assessment of 18th Army[2]

Plans for short, victorious wars often devolve into long conflicts of attrition. Isolated garrisons may suffer extraordinary casualties due to environmental injury, disease, and starvation if cut from supply lines. While Second World War Pacific conflicts clearly demonstrate, among both Allied and Axis troops, the harsh reality of force destruction caused by disease casualties, similar threats remain evident today.

The historical record of the U.S. Army in the Philippines and the 18th Imperial Japanese Army in New Guinea provide instructive examples of how such threats can change the course of a particular battle or an entire war. This Historical Perspective examines the medical consequences of 2 Pacific conflicts during the Second World War, with a focus on the effects of malaria. The current generation of medical officers must understand the harsh lessons of disease casualties caused by supply chain failures to ensure force health and readiness.

A major portion of this Historical Perspective was informed by reports of senior surviving Japanese officers. These men were set to work on a history of the war by their American captors during their detainment as possible war criminals. Their remarkable efforts were completed without the benefit of maps or operational orders, nearly all of which were lost or purposefully destroyed at the end of the war. U.S. military intelligence staff translated their reports into English, which were researched for this article. Morbidity and mortality estimates may differ with official U.S. histories of the war, but their figures were compiled with fewer resources over a shorter time. Most Japanese wanted to forget the war, especially their experiences in New Guinea, and commence rebuilding their country, resulting in a large historical gap unlikely ever to be filled.

U.S. Campaign in the Philippines

The Second World War in the Pacific began badly for the U.S. Forces. Soon after the December 1941 attack on Pearl Harbor, isolated U.S. garrisons on islands throughout Southeast Asia fell to the Japanese offensive. Following the relocation of GEN MacArthur to Australia in March 1942, the largest mass surrender of U.S. forces occurred less than 2 months later at Bataan, during the loss of the Philippines to the Japanese Imperial Army. This defeat followed an uneven 5-month struggle distinguished by failure to reinforce or resupply Philippine island garrisons.[3]

Inadequate supplies of food and quinine led to starvation and epidemic malaria that plagued both sides of the Bataan campaign. In February 1942, the Japanese Imperial 14th Army had failed to break U.S. defensive lines, due in part to high rates of dysentery and malaria that sapped their personnel strength. The Japanese 14th had to be reinforced prior to resuming its offensive, with 50% to 60% of its soldiers incapacitated by malaria and 10% hospitalized for malaria treatment.[4] It is likely that more than 1,000 of Japan's 7,000 casualties were due to malaria.[5] The U.S. Forces, comprised of approximately 23,000 U.S. and 100,000 Filipino soldiers, were on reduced rations from the beginning of the campaign, with quinine supplies sufficient only to suppress, but not prevent, near universal malaria infection.[5]

The April 1942 surrender of the starved and defeated 78,000 U.S. forces (66,000 Filipinos and 12,000 Americans) on Bataan and the subsequent surrender of the 10,000 Allied forces on Corregidor in May were the largest contingents ever to surrender in U.S. military history.[3] At least 24,000 malaria patients, resulting from 500 to 700 new cases per day, were being treated at the time of surrender. What little microscopy that could be done suggested the ratio was 2:1 *Plasmodium vivax* to *P falciparum*.[5]

After fighting ended, the Allied prisoners were marched 55 miles to San Fernando on what was later known as the Bataan Death March. The situation worsened in Prisoner of War (POW) camps. Two thousand three hundred U.S. POWs were estimated to have died at Cabanatuan POW camp 1 during the latter half of 1942, with 25% of those deaths attributed to malaria. The highest monthly mortality figure was 789 deaths,[6] in July 1942; the arrival of quinine tablets at Cabanatuan helped decrease total mortality by 500 in August. Filipino POW deaths in 1942 at Camp O'Donnell numbered 29,589, of which 6,129 (20.7%) were attributed to malaria; but the true count is likely much higher.[6] **Figure 1** shows what is thought to be a burial detail at Camp O'Donnell.

Although subsequent large military casualty events were mostly limited to the sinking of ships taking POWs from the Philippines to Japan, disease attrition continued among the POW population throughout the next 3 years. Ultimate cause of death was rarely a single event but a combination of events including malnutrition, especially of B vitamins (beriberi), trauma (skin ulcers), and infectious diseases, particularly bacillary dysentery and malaria.[3,6] It is estimated that 37% of U.S. POWs did not survive the ordeal.[7]

Imperial Japanese Army Campaign in New Guinea

In the New Guinea campaign, GEN MacArthur's strategy was one of envelopment: bypassing concentrations of enemy soldiers after neutralizing their abilities to interfere with the Allies' extended supply lines.[8-10] During their advance on the Philippines, multiple Imperial Japanese Army bases had been isolated and left to manage as best they could without rations, ammunition, or even communications from Japan. Despite extraordinary efforts to obtain tropical food sources, the isolated garrisons of the Japanese Imperial Army were gradually starved out of existence.[11,12]

Starvation and disease were 2 of the most significant contributors to the huge mortality suffered by Japanese forces. Rice ran out soon after the retreat from Madang, and essentially no supplies reached the 18th Japanese Army after mid-1944. The New Guinea jungle has few edible plants except the sago palm, which requires considerable labor to extract its protein-poor starch. Any animal protein that could be found was eaten by starving soldiers, including snakes and rats. Many men ate grass just to fill their stomachs. Unlike the 17th Japanese Army in Bougainville and New Britain, the 18th Army was never static enough for fixed agricultural production to any extent. Stories of cannibalism exist from the retreating line of soldiers from Lae to Madang to Wewak.[13]

Disease also dogged their footsteps, especially malaria, which was nearly universal due to the lack of any suppressive medications.[14] Malaria killed more Japanese soldiers than battle injuries as the Allies took progressively larger offensive steps towards Japan.[14] At one point in 1943, only 300 men of 1,700 in a Japanese infantry regiment were well enough to function as soldiers because the others were ill with malaria.[4] Febrile malaria relapses consumed more calories, and sick men with fevers could not continue to march during the retreat. Many ended their lives with bullets or grenades rather than risk capture or an agonizing and slow death alone in the jungle.[2,10,11,15] Many units lost 75% to 90% of their personnel, rendering them combat ineffective, as indicated by post-war 18th Japanese Army staff reports.[2,15] Only 770 frontline infantry soldiers were estimated to have survived to the end of the war. One third of the survivors were ill enough to be hospitalized, and barely half the Army was capable of marching any distance.[2,15] A 1,000-bed hospital constructed by the Japanese on Muschu Island received soldiers who had to be transported to their island prison by river barges **(Figure 2)**. Despite medical supplies from the Australian Army, Japanese military medical officers struggled to maintain the health of their survivors on Muschu Island. Most Japanese officers and senior leaders had already died with their troops from battle injuries, malaria, or suicide.[2, 15]

Conclusion

The catastrophic casualties incurred from the failure of supply lines during these battles provide an important lesson for future conflicts. Modern warfare is more dependent than ever on functioning supply lines to keep soldiers fed and equipped. Starving soldiers will suffer low morale and decreased will to fight, as will those with febrile diseases. The importance of prevention, for both disease and non-battle injuries, remains as critical to military success today as it was nearly a century ago.

FIGURE 1. Captured Japanese photo of U.S. and Filippino soldiers at Camp O'Donnell in May 1942 reported by POW survivors to be a burial detail carrying bodies to a graveyard. *U.S. National Archives Record Administration (NARA) photo 535563 now in the public domain.*

FIGURE 2. Japanese military physician examining a malaria patient at a prisoner-constructed hospital on Muschu Island, Papua New Guinea, October 1945. Malaria was a major cause of illness in surrendered soldiers who had spent the last year of the war in the Sepik River basin. *Australian War Memorial (AWM) photo 098342 now in the public domain.*

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Editorial Comment

Disease and Non-Battle Injury as a Driving Force for Improved Medical Readiness

Shanks highlights supply issues and poor logistics as proximate causes of disease and non-battle injuries (DNBI). Throughout military history, DNBIs have accounted for large numbers of casualties. The U.S. military's proportion of deaths from DNBI versus battle injuries fell from approximately 60% during the Civil War to 20% in the Vietnam War.[1]

Even in the more limited Iraq campaign in the early phases of Operation Iraqi Freedom (March 2003-April 2005), non-battle injuries were triple the number injured due to enemy action.[2] Reliable reports from the ongoing Russia-Ukraine conflict are difficult to verify, but the lay press has reported significant challenges posed by environmental extremes.[3] Even with well-supplied forces and limited engagements, environmental and disease planning remain critical to force readiness and mission success.

After observing the devastating effects of malaria, especially in the South Pacific, the U.S. military was instrumental in the research and development of effective anti-malarial medications. Walter Reed Army Institute of Research (WRAIR) took on this challenge and, building on the earlier work of German researchers,[4] developed and synthesized the first effective anti-malarial, chloroquine, by the end of the Second World War. WRAIR remains at the forefront of anti-malarial development, executing a critical role in the development and approval of key anti-malaria medications including primaquine, mefloquine, doxycycline, atovaquone/proguanil, tafenoquine, and artesunate.[4,5,6]

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From the Editor's Desk

I am honored to be named the third editor-in-chief for the *Medical Surveillance Monthly Report*. While the *MSMR* has gone through many changes over the past 27 years, the core intent remains the same: to provide valuable tools, data, and information related to the public health of the population served by the Military Health System (MHS). The *MSMR* directly supports the mission of the Armed Forces Health Surveillance Division (AFHSD), the Public Health Directorate (PHD), and the Defense Health Agency (DHA) by disseminating timely, relevant, comprehensive, and actionable health information. As many of the *MSMR* readers are aware, the editor-in-chief and editorial staff of the journal provide their support to the DHA and DOD through a contractual agreement that is critical for maintaining this journal's editorial independence. This independence allows the *MSMR* to maintain its peer-reviewed status and indexing in PubMed.

The *MSMR* was created to offer situational awareness about public health issues relevant to military populations. Such information was unable to be gleaned from similar periodicals based on the U.S. population, such as the CDC's *Morbidity and Mortality Weekly Report* (*MMWR*). In August 1995, the *MSMR* summarized multiple years of hospital utilization for active duty Army soldiers at DOD facilities, representing the first time such military-specific morbidity information became widely available. The expansion of routine public health surveillance reporting, along with access to growing electronic health record capabilities, have led to significant improvements in *MSMR*'s information dissemination. Reports of numbers, rates, and trends of hospitalizations, ambulatory visits, and morbidity burdens have been published by the *MSMR* each year since 2001, and the *MSMR* has been indexed in PubMed since 2011.

As a peer-reviewed journal, the scope of the *MSMR* now reaches beyond the AFHSD, DHA, and DOD. The changing face of public health within the military has led to positive changes within the *MSMR*, including the creation of an editorial board of leaders from all military services. This board is a key part of the *MSMR's* continuous quality improvement efforts, and will enhance key stakeholder involvement and input.

I hope to measure up to the high standards set by my immediate predecessor, Dr. Frank O'Donnell, and the founding editor, Dr. John Brundage. I carry on the tradition of these previous editors as a retired Army preventive medicine physician. Dr. (then COL) O'Donnell was the preventive medicine consultant to the Army Surgeon General when I graduated from the Madigan Preventive Medicine residency program in 1998. Dr. Brundage was well known to me as talented researcher and valuable resource when I started my career as a preventive medicine physician. After 30 years of service at the tactical, operational, and strategic levels of the Army and DOD, and 24 months of deployments in 4 different theaters (Bosnia, Iraq, Afghanistan, and Honduras), I retired from active duty in 2021. Following 15 months in the private sector, I now proudly return to the service of the DOD.

My vision for the *MSMR* is to become an indispensable resource for military epidemiologists and public health professionals. Pathways to success include soliciting and publishing high quality and relevant original research; seeking input from our key stakeholders, most importantly our readership, on how we can improve; and expanding on our current regular updates on disease morbidity by providing timely access to other data critical for assessing the health of our population, including mortality, natality, and demographic information.

I look forward to hearing from you as we work together to enhance the readiness, and improve the public health, of our military family.

Andrew R. Wiesen, MD, MPH
Colonel (retired), United States Army
Editor-in-Chief

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

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