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COMBAT & CASUALTY CARE

SHAPING SOF MEDICINE TO FUTURE GLOBAL NEED

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SOF MEDICINE: TODAY'S DEMANDS, TOMORROW'S BATTLESPACE

Current day Special Operations Forces (SOF) Medics are a multi-domain, adaptive SOF medical force operating across a global landscape.

By John Dominguez

EXCLUSIVE FEATURES

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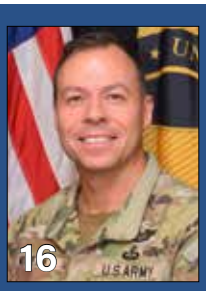

SOF MEDIC CULTURE

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OPERATIONAL MED SPOTLIGHT

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Cover: U.S. Airmen assigned to Air Force Special Operations Command perform a surgical airway procedure on a simulated burn victim during the Special Operations Forces Medical Skills Development program at Hurlburt Field, Florida, Oct. 9, 2024. This critical, last-resort procedure supports the Air Force's commitment to ensuring medical personnel are prepared to provide life-saving care in austere and high-stakes environments. (U.S. Air Force photo by Airman 1st Class Raul Mercado)

Departments

COUNTERING AN ENEMY OF BRAIN HEALTH
The U.S. Department of War and 75th Ranger Regiment Brain Protection Task Force are confronting an invisible danger: blast overpressure (BOP). This silent threat, from heavy weapon systems to explosive breaching charges, represents a danger to servicemembers operating in proximity.
By CPT Sean G. Kratchman

INDUSTRY PARTNER
HYGIENE AS A COMBAT MULTIPLIER
A National Training Center pilot program is turning canteens into a 4-minute shower capability for U.S. Army soldiers.
By Jonathan Ballesteros

MEDIC SPOTLIGHT
EMBRACING TRANSFORMATIVE COMBAT MEDICINE
From the mind of a former special operations combat medic, we get a perspective on the global threat-driven transformation occurring across the SOFMED spectrum and how targeted capability is diminishing the unknown.
By SGM Brian Valley

NEXT-LEVEL DIAGNOSTICS FOR ADVANCED FORCE PROTECTION
A recently Defense Health Agency (DHA) sponsored traumatic brain injury (TBI) field assessment program could revolutionize brain trauma treatment.
By T. T. Parish

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INSIGHTS

As world events today emphasize the nature of globalized conflict, our nation's ability to provide critical, highly-mobile medical services to those serving on highly dangerous, secretive missions is the charge of deployed American Special Operations Forces (SOF) medical personnel. In this, Volume II 2026 Combat & Casualty Care, we highlight the essential role of these specialized medical professionals as they fill a key niche in current day combat theater operations.

With recent engagements across Europe and the Middle East which seem without solution, what better source for this edition's lead cover interview than from leadership of the North Atlantic Treaty Organization (NATO) Allied Special Forces Command. Medical Advisor and Director, Joint Medical Directorate, COL Joe Hudak, also Chair, SOF Medical Panel (SOFMedP), enlightens us on the current and ongoing mission set of NATO SOF medical support as it remains interoperable, credible, and ready to support operations wherever they take place. From the demands of real-world casualty care to the evolution of those selective few able to survive the rigors of today's combat medic regimen, we gain valuable insight from not one but two Sergeants Major on the transformative culture and special skillset that defines what it means to be a SOF medic.

Across a complex landscape of force protection hurdles comes the need for a more advanced health care system than the world has ever seen. The Operational Medical (OPMED) Systems Force Health Protection (FHP) division, Ft. Detrick, MD, is perhaps the U.S. Department of War's leading focus body within this fray. Led by COL Charles "Chuck" Bane, FHP's team of regulatory and product management experts rapidly fields treatments, diagnostics, and preventive medical countermeasures to address never-ending demand for ever more effective solutions to combat trauma realities. As advances in detection of trauma to our most critical of thinking tools, the brain, have occurred, work that the Defense Health Agency (DHA) is doing to bring earlier intervention to bear in countering traumatic brain injury (TBI) is evident. DHA's OPMED Systems Program Management Office is employing a new TBI Field Assessment Program (TBI-FAP) as a means of introducing a more advanced touchpoint software able to provide improved data for more efficient casualty assessment as to potential injury. With units such as the U.S. Army's 75th Ranger Regiment facing the regular reality of dangers posed by blast overpressure (BOP) to brain health, this advance in technology is certainly welcome.

Be sure not to miss this edition's special lead-off perspective on the current state of and outlook for SOF medicine from former special forces medic and past president of the Special Operations Medical Association (SOMA) John Dominguez. Also, this issue's Industry Partner spotlight looks at Geyser Systems' new Individualized Shower System (ISS), a capability most of us would probably ever give much thought to being critical to the health of our combat veterans.

As always, please feel free to email us with thoughts and suggestions. Thanks for the continued readership!

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SOF MEDICINE: MEETING TODAY'S DEMANDS, SHAPING TOMORROW'S BATTLESPACE

Current day Special Operations Forces (SOF) Medics are a multi-domain, adaptive SOF medical force operating across a global landscape.

By John Dominguez ATP, EMT-P, TP-C, FP-C, Honorary Sergeant Major of Army Medical Department Regiment, Former SOMA President

John Dominguez

A U.S. Air Force Special Operations Forces (SOF) Independent Duty Medical Technician (IDMT) assigned to the 352nd Special Operations Wing assesses a patient alongside two Finnish NATO Special Operations Combat Medics (NSOCM) during a joint U.S. Air Force SOF IDMT and Finnish NSOCM combat search and rescue training during the 2023 Finnish Airlift Tactical Exercise, near Oulu, Finland, August 2023. In order to maintain agile forces, the U.S. military requires the ability to communicate quickly and efficiently with Allies and Partners across all domains, whether in peace or in times of crisis. (U.S. Air Force photo by Capt. Ryan Walsh)

Special Operations Forces (SOF) medicine represents a continuously adaptive and forward-leaning domain within military medical practice, driven by the necessity to anticipate, mitigate, and ultimately overmatch emergent threats and their associated injury profiles. As adversarial capabilities evolve—particularly in the realms of drone weaponry, directed energy weaponry, denied evacuation environments, and contested logistics—the SOF medical enterprise must correspondingly advance in both conceptual and material dimensions. This evolution is structured along four principal lines of effort: Program Advancement, Material Solutions, Operational Illumination, and Education and Empowerment. The efficacy of these lines is inextricably linked to multinational collaboration, interoperability with partner forces, and a deeply ingrained professional ethic among service members to sustain innovation for future operational relevance.

The following focal areas represent critical differentiators elevating SOF medicine to the specialized level which it holds within the military medical hierarchy:

Program Advancement constitutes a foundational pillar, emphasizing targeted investments in brain health, force preservation, human performance optimization, trauma survivability, and the modernization of austere care paradigms. These initiatives are not merely reactive but are designed to proactively enhance operational endurance, cognitive resilience, and long-term quality of life for both operators and their families. Advances in these domains are expected to yield measurable improvements in survivability curves, return-to-duty rates, and chronic health outcomes, particularly in environments characterized by prolonged field care and evacuation delay.

Material Solutions represent the tangible manifestation of these advancements, encompassing a wide spectrum of technologies engineered for far-forward applicability. These include, but are not limited to, next-generation protective garments, expeditionary blood supply systems, portable and low-signature diagnostic platforms, nanoparticle-mediated drug delivery mechanisms, and biomarker-based tools for traumatic brain injury (TBI) detection. Additional capabilities such as multi-casualty physiological

monitoring, point-of-injury documentation systems, interoperable electronic medical record (EMR) transfer solutions, modular austere surgical platforms, advanced wound care technologies, and field-optimized analgesia and sedation protocols collectively redefine the standard of care in denied or resource-constrained environments. Importantly, these systems must adhere to stringent design constraints: minimal power consumption, reduced logistical burden, scalability, interoperability, and intuitive usability under combat conditions.

Operational Illumination (OI) remains one of the most analytically complex and operationally demanding lines of effort. It focuses on generating actionable insight into critical challenges such as evacuation denial, blood product logistics in austere theaters, diagnostic limitations under resource scarcity, and the cumulative physiological effects of repeated blast exposure. Furthermore, OI encompasses the development of robust methodologies for medic force generation and the quantification of programmatic effectiveness through data-driven outcome metrics. The integration of disciplined data collection and analytics is essential to validate capability investments and inform future doctrine, particularly within the context of large-scale combat operations (LSCO) and irregular warfare.

Education and Empowerment extend beyond traditional clinical training paradigms to encompass the entirety of the SOF medical enterprise. While maintaining and advancing clinical proficiency remains essential, particularly through patient exposure and adherence to sustainment standards such as those outlined in USSOCOM Directive 350.29. There is a concurrent requirement to integrate emerging technologies and concepts into training pipelines. These include wearable health monitoring systems, biomarker interpretation, portable diagnostics, telemedicine frameworks, prolonged field care protocols, and the operational employment of mobile surgical capabilities.

The Joint Special Operations Medical Training Center (JSOMTC), also known as the Special Warfare Medical Group (SWMG), has correspondingly evolved its curriculum to address contemporary operational demands. Notably, training now extends beyond the historical 72-hour prolonged care framework, incorporating extended duration patient management, LSCO considerations, and continued emphasis on irregular warfare and partner force integration. This curricular expansion reflects the operational reality of contested environments where evacuation timelines are uncertain and medical autonomy is paramount.

BATTLE-READY TO CASUALTY RESPONSE-READY

Critically, SOF medics must sustain dual-domain expertise as both combat-ready and medical response personnel. In addition to advanced medical proficiency, they are required to maintain operational competencies across a broad spectrum of tactical disciplines, including weapons mastery, close quarters battle (CQB), small unit tactics (SUT), expert-level navigation, camouflage and signature management, specialized mobility skills (e.g., HALO, maritime, dive, and mountaineering operations), tactical communications, electronic warfare awareness, breaching, demolitions, field engineering, and intelligence integration. This multidomain proficiency ensures that the medic functions not as an isolated specialist, but as an integrated and survivable component of the operational element.

Several critical considerations underscore the operational application of SOF medicine:

- The SOF medic may be required to assume leadership roles, including that of team sergeant, necessitating a comprehensive understanding of mission command principles.
- Medicine is NOT the primary mission; rather, it is a dynamic variable within the tactical framework that must be managed without compromising operational objectives.
- Medical equipment selection must prioritize portability, low energy dependency, minimal refrigeration requirements, multi-functionality, enterprise-wide standardization, and interoperability with conventional forces.
- Capability development must rigorously account for power requirements, bandwidth constraints, maintenance demands, consumable logistics, training burden, and data management discipline throughout the lifecycle of the system.
- Given the historical and future inevitability of medical personnel casualties, cross-training at the highest level is imperative. Systems and protocols must be sufficiently intuitive to enable non-medical personnel to deliver effective point of injury care and support surgical teams if their members were to become casualties.
- SOF surgical teams must achieve mastery of their equipment while retaining operational adaptability. Tactical proficiency in selected combat skills enhances their role as force multipliers rather than liabilities.
- Forward Resuscitative Surgical Detachments (FRSD) will remain integral to SOF operations. Their effectiveness depends on minimizing logistical footprint specifically in power, life support, and security requirements while ensuring interoperability in equipment, communications, weapons systems, and mobility platforms consistent with SOF operational profiles.

LOOKING OUT AT OPERATIONAL EVOLUTION

In aggregate, the future trajectory of SOF medicine is defined by its capacity to deliberately integrate advanced biomedical innovation with operational pragmatism, ensuring that medical capability not only supports but actively enhances mission effectiveness across increasingly complex and contested environments. Central to this trajectory is the recognition that SOF operates under a global response mandate, requiring the medical enterprise to remain agile, scalable, and contextually adaptive across diverse theaters of operation. No single area of responsibility (AOR) or conflict paradigm can serve as a definitive model for medical planning or execution. Rather, each operational environment whether Eastern Europe, the Middle East, the African continent, or the Indo-Pacific presents distinct threat profiles, logistical constraints, environmental challenges, and partner force considerations that necessitate tailored medical solutions. It is also most import to remember that our adversaries always add to our variables.

Accordingly, the SOF medical enterprise must resist the tendency toward doctrinal rigidity or conflict-specific optimization that risks obsolescence in future engagements. There is no universal "gold standard" applicable across all operational contexts; instead, success is predicated on the ability to synthesize emerging technologies, adaptive clinical practices, and regionally informed operational insights into a cohesive and flexible framework. This demands a sustained commitment to innovation at the edge of combat capability development, coupled with continuous refinement of both physical and cognitive readiness among medical personnel.

Ultimately, the effectiveness of SOF medicine will remain on the shoulders of its practitioners' ability to match technical proficiency with operational adaptability, maintaining clinical excellence while navigating the constraints and uncertainties inherent to modern warfare. By aligning medical capability with mission-specific requirements and limitations, the SOF medical enterprise ensures the delivery of the highest possible standard of care to the warfighter, irrespective of geography, threat environment, or operational tempo.

LITTER MODERNIZATION FOR MULTI-ENVIRONMENT MEDICAL EVACUATIONS

On behalf of Bud Calkin, CEO, Skedco, and Jim Meadows, CEO, Panakeia

In 2016, the U.S. Army Medical Research and Development Command identified a capability gap in field evacuation and pursued a new modernized design of the current Patient Rescue and Transport System and invested funding for a new concept "next generation" rescue litter. The new design would allow the litter to be compatible with existing medical evacuation (MEDEVAC) platforms, lighter than current system, improved patient security, improved patient access, fit the rucksack for Jungle Warfighters, hoist capable and be able to perform difficult evacuation procedures.

After several years of testing and evaluation, certification, (two years delay from Covid) Skedco, in coordination with the PM, USAMMDA's Rescue Litter Modernization initiative has finalized development of the "next generation" Sked litters. The litters are smaller and lighter, and straps are certified at 5000 lb. break strength. A key feature is the integrated harness that secures the patient from potential injury during high angle rescue and hoisting operations. The Rapid Extraction and Rapid Extraction (Low Profile) litters are 28 and 22. 5 inches wide verses the 36-inch-wide standard Sked. They are designed for all terrain operations, provide easier casualty access, and AWR 980 certified to be hoisted both horizontal and vertical positions.

Skedco has provided over 500,000+ Skeds to the U.S. Military and our allies for thousands of medical evacuations since 1987. The Rapid Extraction Skeds continue in line with other Skedco products that consist of the same high-quality materials. Skedco has been a key player in the Rescue Litter Modernization program.

COUNTERING AN ENEMY OF BRAIN HEALTH

The U.S. Department of War and the 75th Ranger Regiment's Brain Protection Task Force are confronting an invisible danger: blast overpressure (BOP). This silent threat, produced by the weapons that ensure our dominance—from heavy weapon systems to explosive breaching charges—represents a danger to the health of any servicemember operating in proximity.

By CPT Sean G. Kratchman, OTR/L, CBIS-T, CSCS, TSAC-F, Regimental Occupational Therapist, 75th Ranger Regiment

A Ranger mortarman from the 75th Regiment conducts mortar fires training in low-light conditions. (75th Ranger Regiment)

For generations of warfighters, symptoms like headaches, tinnitus, and cognitive fog have been written off as the inevitable cost of their profession. These conditions, often mirroring those of a traumatic brain injury (TBI), were simply accepted as an unavoidable consequence of ensuring combat lethality. The insidious nature of these injuries, coupled with a lack of objective, field-expedient diagnostic tools, makes this a complex problem for both leaders and medical personnel.

The urgency is heightened as warfighters report these symptoms even during routine training, not just in combat. This creates a persistent readiness challenge that cannot wait years for enterprise-wide solutions. It demands immediate, practical innovations from the operational force. In response, the 75th Ranger Regiment established its Brain Protection Task Force (BPTF) to identify and implement data-driven, field-expedient measures that can better protect the force today.

FROM POLICY TO ACTION: BUILDING THE FOUNDATION

The call to action is clear. The National Defense Authorization Act (NDAA) for Fiscal Year 2022 established the Warfighter Brain Health Initiative (Section 734), and a subsequent Department of Defense memorandum on 8 August 2024 mandated a comprehensive approach to addressing blast exposure. The Regiment's task force was created to translate these strategic-level directives into tangible action at the unit level. While the Department of War (DOW) pursues the necessary long-term, enterprise-wide solutions, the BPTF focuses on practical, evidence-based tactics, techniques, and procedures (TTPs) that can better protect the force now. In partnership with academia, researchers, and collaborating units across the force, the task force is developing near-term solutions that both mitigate immediate risk

Blast data collection using BIHF during 120-mm mortar fire. (75th Ranger Regiment)

and generate useful data to inform longer-term efforts. This dual approach — advancing immediate interventions while simultaneously shaping the solutions for tomorrow — is at the core of the task force's mission.

THE TASK FORCE PHILOSOPHY: INNOVATION AT THE SPEED OF RELEVANCE

To bridge the gap between long-term research and the immediate needs of the warfighter, the BPTF has operated under a clear and agile philosophy since its inception 12 months ago. This framework ensures that every initiative is not only grounded in data but is also immediately relevant to the Ranger on the ground.

Preserve Cognitive Lethality. The task force treats cognitive function as a core component of combat effectiveness. The goal is to develop solutions that preserve and enhance a Ranger's cognitive performance, ensuring they maintain a decisive advantage on the battlefield throughout their career and after their service.

Empower the Frontline Leader. The foremost authority is the leader in the field. The BPTF is designed to answer questions coming directly from the force and to put effective, data-driven tools into the hands of the individuals making decisions at the point of action.

Provide Sustainable Solutions. Innovation without a path to implementation is meaningless. All solutions are evaluated for their real-world feasibility, and any recommendations provided to command teams include a risk-associated assessment of the resources required and cost of implementation. This ensures that proposed TTPs are practical, sustainable, and ready for immediate adoption.

Maintain a Bias for Action. An 80-percent solution that can be implemented now is superior to a 100-percent solution that may never arrive. The traditional research cycle can take years, with findings often failing to reach the end user. The BPTF applies emerging data to implement practical measures now, choosing to protect the force today while more comprehensive solutions continue to mature.

This philosophy reflects the Regiment's longstanding role in testing practical solutions with value beyond its own formation. While some initiatives are tailored to the needs of SOF, others may inform broader Army efforts as evidence and implementation pathways mature. The Regiment remains committed to sharing lessons that can benefit the wider force.

EXPOSURE DOCUMENTATION – SF600 TEMPLATE

In response to DOW's urgent direction to address warfighter brain health, the BPTF faced a practical challenge: how to begin capturing individual BOP exposure immediately, without waiting for future enterprise-wide systems. The goal was to establish a meaningful system of record now. Training does not stop, and risk cannot be eliminated from military training. The task force pioneered a simple yet powerful solution by leveraging an existing and universally recognized medical document within military medicine: the Standard Form (SF) 600 (Chronological Record of Care).

The BPTF developed a customized SF 600 template, formatted as a Subjective-Objective-Assessment-Plan (SOAP) note, with pre-populated fields to systematically and consistently document BOP exposure events. The approach is tailored for the Regiment's most at-risk operators — mortarmen, Carl-Gustav gunners, and breachers — ensuring that every significant exposure during training is captured in a standardized format.

Once completed by a medical provider, this document is uploaded directly into the service member's electronic health record in MHS GENESIS. This creates a permanent, longitudinal data trail of a Ranger's occupational blast exposure throughout their career. This initiative serves as a critical

bridge, capturing blast exposure today while the DoW pursues long-term solutions in the Individual Longitudinal Exposure Record (ILER) and Deployment Occupational and Environmental Health Readiness System-Industrial Hygiene (DOERS-IH).

THE SURPRISING POWER OF THE WOOL BLANKET

A core tenant of the BPTF is the pursuit of practical, data-driven solutions that can be rapidly implemented. While formal acquisition programs of record, managed by entities like Program Executive Office (PEO) Soldier and U.S. Army Combat Capabilities Development Command (DEVCOM) Soldier Center, pursue long-term, materiel solutions for the enterprise, the task force focused on identifying immediate, low-cost TTPs to protect Rangers from BOP associated with breaching operations. Unlike explosions in open areas, a blast within enclosed structures creates reflected blast waves that often amplify to higher pressures than the initial blast wave. The goal was to find a readily available tool that could meaningfully reduce exposure without impeding training value.

To achieve this, the task force leveraged a powerful network of expertise, drawing on established lessons learned from partner SOCOM units and collaborating with leading research institutions. This collaboration provided access to a field-expedient BOP measurement tool: the biofidelic head form (BIHF), a human surrogate head designed to accurately measure the precise overpressure that reaches the skull during a blast event.

Leveraging this technology, the BPTF designed a series of tests in a realistic operational environment: a subterranean concrete room at Fort Benning, GA. During live internal breaching, the team evaluated several materiel types to disrupt and dissipate the blast waves. The results were notable. The most effective material tested was not a piece of specialized equipment, but one of the most common items in Army inventory: the standard-issue wool blanket.

Data captured from eight blast gauge sensors and sensors embedded within the BIHF showed a 30-70 percent reduction in reflected overpressure across all measured positions when a double layer of wool blankets was hung 2-4 inches from the wall. This simple, low-cost, and readily available TTP offers a practical method to reduce BOP during internal breaching. Importantly, the project was completed in weeks rather than years, showing how operational questions, scientific support, and frontline leadership can produce usable risk-reduction measures quickly while further study continues.

INSTRUMENTED MOUTHGUARDS IN AIRBORNE OPERATIONS

A significant challenge within warfighter brain health is the lack of objective data. For decades, the true incidence of head impacts during military parachuting was unknown, relying on self-reporting in a culture where jumpers are often conditioned to downplay injuries. To address this, the 75th Ranger Regiment partnered with the Uniformed Services University of the Health Sciences (USUHS) and the Walter Reed Army Institute of Research (WRAIR) to monitor and measure head impact during parachute landing falls and military freefall activities. This work built off previous instrumented mouthguard (iMG) testing with the U.S. Army Airborne School, the 82nd Airborne Division, and other SOCOM units.

The benefit of this technology is twofold: improved impact tracking and a better understanding of injury risk. The Regiment also considered evidence from the contact sports community, including rugby and ice hockey, as part of a broader review of how mouthguards may contribute to head protection. For impact tracking, the iMGs offer an important advance. These devices contain sophisticated sensors that measure the linear and rotational forces acting on the head during every phase of the jump, providing objective data on impacts that have historically gone unrecorded.

The preliminary analysis from the USUHS/WRAIR study is challenging long-held assumptions and revealing a dramatic gap between reported injuries and actual exposure events. Previously published research placed the rate of closed head injuries at approximately .15 percent per jump, or 1.5 out of every 1,000 jumpers.8 In stark contrast, the instrumented mouthguards are revealing that 6-8 percent of all landings qualify as "hard landings," which is 60-80 out of every 1,000 jumpers, defined as those exceeding 40 Gs of force.

The preliminary data further indicate that a substantial proportion of jumpers experiencing these hard landings subsequently present with signs consistent with concussion. If validated, this would suggest that the true incidence of clinically significant head impact during military parachuting may be substantially higher than previously reported. These findings reinforce the need for better measurement, surveillance, and leader awareness during airborne operations.

By participating in the study, the Ranger Regiment is helping to quantify the true risk, enabling leaders to move beyond anecdote and implement data-driven changes to TTPs, equipment, and medical surveillance to better protect the force.

MORTAR LEADER-DRIVEN QUESTIONS, STRAIGHT-FORWARD ANSWERS

Perhaps the most compelling example of the BPTF's agility is its rapid response to a critical question raised directly by the Regimental mortar community: Can firing mortars without a helmet reduce blast overpressure (BOP) exposure to the brain? This question was not speculation but based on both operational experience and a known biomechanical phenomenon. Operators' anecdotal reports of feeling fewer BOP effects while firing without helmets are informed by scientific research on how blast waves interact with combat helmets.

The phenomenon, called the "under wash effect," involves the primary blast wave traveling around the helmet's edge and reflecting off the torso, creating a secondary pressure wave that travels under the helmet. This can result in the blast wave becoming trapped and amplified in the space between the helmet and the head, leading to a significant increase in the overpressure experienced by the face and skull. Multiple studies have confirmed this effect, demonstrating that in some scenarios, the overpressure measured under the helmet can be two to 10 times greater than the initial blast wave itself. What is unknown is if this effect occurs in mortarmen, based on standard body position, and provides a clear, ground-driven impetus for testing.

Answering this question swiftly with objective data is precisely what the task force was designed to do. In a collaborative project with the Infantry Mortar Leader Course (IMLC), the BPTF collaborated with Vanderbilt University to set out to measure the BOP experienced under various conditions. The test matrix was comprehensive, evaluating the effects of wearing no helmet, a standard Army Combat Helmet, an Ops-Core helmet, and a bump helmet. To further refine the data, each configuration was tested with and without a posterior helmet mitigating shield, the Pelta-6.

PELTA-6 BOP-MITIGATION HELMET MODIFICATION

This initiative epitomizes the task force's agile "weeks versus years" operational model. Data analysis revealed that helmets decreased brain acceleration but increased eye/optic nerve strain in the BIHF sensors. This led to an interim recommendation to command teams that helmets should

Rangers from the U.S. Army's 2nd Ranger Battalion jump with instrumented mouthguard (iMG) technology for tracking impact forces they may experience. (2nd Ranger Regiment)

still be worn during static-range mortar firing. This process — transforming an operator's question into a data-driven policy recommendation in a matter of weeks — is a powerful demonstration of how the task force is directly improving the health and safety of the force at the speed of relevance.

The 75th Ranger Regiment has long served as a proving ground for ideas with value beyond its own formation, a role reflected in the 1986 Wickham Charter. Today, the Brain Protection Task Force continues that tradition by pairing operator-driven questions with scientific validation and agile implementation. In doing so, the Regiment is working to better protect its own force while contributing lessons that may inform the broader Army's approach to warfighter brain health.

ENSURING UNCONDITIONAL CARE ACROSS AN INTERNATIONAL LANDSCAPE

COL Joseph J. Hudak III, MD MMAS is Medical Advisor to Allied Special Operations Command, NATO, Director of the Joint Medical Directorate, and Chair of the Special Operations Medical Panel. He entered the Army in 1994 at West Point where he earned a Bachelor of Science in Civil Engineering in 1998. Upon graduation, he was selected for the Health Professional Scholarship Program and attended the University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School where he earned his Doctor of Medicine in 2002. He completed his internship and residency in General Pediatrics at St. Joseph's Children's Hospital in Paterson, New Jersey in 2005 and his fellowship in Neonatal-Perinatal Medicine at Stony Brook University Hospital, New York in 2008. He completed the Global Health Graduate Certificate Program through the Uniformed Services University of Health Sciences in March 2023 and the Navy Tropical Medicine and Diseases course in June 2025.

COL Hudak served as a Staff Neonatologist at Tripler Army Medical Center (TAMC) from 2008 to 2011, deploying as a Battalion Surgeon with 1SBCT, 1st AD to Iraq in 2009-2010. He served as Chief, Neonatology at TAMC from 2011-2014. From 2014-2015 he attended Command and General Staff College at Fort Leavenworth, Kansas where he earned his Master of Military Art and Science for his thesis "The Origins of the Golden Hour of Medical Care and its Applicability to Combat Medicine". From 2015-2017, he served as the Brigade Surgeon for 16th Sustainment Brigade, Baumholder, Germany. From 2017-2019, COL Hudak served as Chief of Pediatrics at Carl R. Darnall Army Medical Center, Fort Hood, Texas. From 2019-2021 he served as the Deputy Commander for Clinical Services, Brian D. Allgood Army Community Hospital, Korea. In this role he relocated all clinical and surgical services from the legacy hospital at Yongsan Garrison in Seoul to the new hospital at Camp Humphreys in Pyeongtaek. He served as the hospital's Chief Medical Officer and was responsible for the development and implementation of all clinical care policies and procedures in response to the COVID-19 pandemic. From 2021-2023, he served as the Command Surgeon, I Corps, JBLM where he was responsible for maximizing readiness in America's First Corps while navigating the COVID pandemic and remaining active west of the International Date Line to ensure a free and open Indo-Pacific. From June 2023-June 2025, COL Hudak served as the Chief Medical Officer, Brooke Army Medical Center leading the medical staff of the Department of Defense's largest and most complex hospital.

Combat & Casualty Care had the opportunity to speak with COL Joe Hudak, Medical Advisor, NATO Allied SOF Command, regarding current and ongoing challenges driving focus areas of today's special forces field combat medics deployed in Europe and globally in support of coalition and Joint mission SOF and conventional force medical needs.

COL Joseph Hudak III

Medical Advisor, Allied Special Operations Command, NATO
Director, Joint Medical Directorate
Chair, Special Operations Medical Panel

C&CC: Please speak to your role and mission within the SOF medical community.

COL Hudak: At its core, my role is about ensuring that NATO Special Operations Forces have the medical support they need to operate, survive, and succeed – anywhere, under any conditions. I serve in a dual capacity. I am both the Medical Advisor to Allied Special Operations Command as well as the Director of the Joint Medical Directorate. In parallel, I serve as the Chair of the SOF Medicine Panel (SOFMedP), which brings together the NATO SOF medical community twice a year.

The SOFMedP is an important panel that connects senior national representatives across the Alliance. It allows us to share challenges, align approaches, and develop solutions together, and it feeds into NATO's broader medical governance through the Military Health Care Working Group, and Committee of the Chiefs of Military Medical Services (COMEDS). As a result, it plays a pivotal role in shaping medical policy at the NATO Level.

On the day-to-day level, my focus is on turning that coordination into real operational effect. That means building and connecting NATO SOF networks so they can work seamlessly together – because interoperability directly impacts survivability. It also means supporting national and regional training and planning capabilities so medical forces are prepared before they deploy, not just once they arrive in theater.

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A key part of the role is investing in our people – supporting the professional development of SOF medical personnel across the Alliance – while strengthening relationships between NATO, Allies, and partner medical organizations. Ultimately, it is about making sure that when SOF operate together their medical support is just as integrated, agile, and ready as the forces the support.

In summary, as SOFCOM MEDAD and Director of the Joint Medical Directorate (JMED), my mission, in addition to advising the commander, is to:

- Build and coordinate NATO SOF medical networks to enhance interoperability, capability, and ultimately survivability.
- Support national and regional NATO SOF medical training and planning capabilities.
- Enable individual SOF medical professional development across the Alliance.
- Foster relationships between NATO SOF medical, allied, and partner organizations.

C&CC: How does SOFCOM's Medical Division Support the NATO SOF Medical Community?

COL Hudak: At the highest level, our role is to make sure NATO SOF medical support is interoperable, credible, and ready support operations wherever they take place. We do that by setting common standards, building capability, and making sure those capabilities translate into operational effect.

Part of that starts with doctrine and policy – giving Allies and partners a shared framework for how SOF medical support should be delivered. But just as importantly, we focus on education, training, and assessment, including supporting SOF Evaluations, to ensure those standards are applied in practice. As part of a warfighting headquarters, we also advise commanders directly – helping them understand medical risk and providing options to reduce that risk during operations. Currently, our efforts are focused on four key areas that are critical to SOF missions. We are standardizing the NATO SOF combat medic capability to ensure a consistent level of care at the point of injury across the Alliance. We are advancing the use of blood products in far-forward and austere environments, which can be decisive for survivability. We are defining what Role 1 medical support should look like in SOF operations, and we are developing specialized surgical and resuscitative teams to bring advanced care as close to the point of injury as possible.

We are already seeing progress – common training standards are in place, training capacity is expanding, and Alliance-wide guidance is being translated into operational practice. At the same time, we continue to refine NATO doctrine to keep pace with the evolving threat environment. Ultimately, the goal is simple: when NATO SOF operate together, medical support is not a limitation – it is an enabler.

Our current efforts focus on four major lines of effort:

- NATO Special Operations Combat Medic / Medical technician (NSOCM/NSOMT)
- Blood Product use guidelines in far forward and austere environments
- NATO SOF Role 1 of medical care
- NATO Special Operations Surgical Team (SOST) and NATO Special Operations Resuscitative Team (SORT) Development

All four contribute to a single overarching goal: strengthening NATO SOF medical capability and interoperability. To achieve this, we work progressively through doctrine writing, policy development, and capability implementation, each step moving us closer to the desired end state.

Key achievements include:

- SOFCOM Training Directive 75.001 (Version D): Established standardized minimum training requirements for NSOCM/NSOMT and facilitates the expansion of training sites. The maturation of the NSOCM/NSOMT closes a key medical capability gap that originates at the point of injury (POI) and extends through first arrival at a damage control surgery location.
- SOFCOM Training Directive 75.002: formally establishes the Committee of NSOCM Sites (CNS), responsible for endorsing training locations; two inspections have already taken place this year. This ensures common minimal training standards for NSOCM across the Alliance.
- SOFCOM Blood Guidance: creates a shared understanding of interoperable blood support. The next step, currently in progress, is transitioning this guidance into a training directive (75.003).
- Role 1 and SOST Interoperability Manuals: under development and designed to define clear, tailorable SOF Role 1 capabilities and NATO SOST capabilities. Additional work ongoing on defining the capability of a NATO SORT.
- Finally, AMedP 4.13, "NATO Special Operations Forces (SOF) Medical Support" was written in 2019 and is currently undergoing another revision to maintain currency with today's mission set and threat environment.

C&CC: How do you leverage the SOF medical community to address and develop these various components of medical support for the SOF?

COL Hudak: A key part of our approach is treating the NATO SOF medical community itself as a capability. We bring that community together, align it, and enable it to develop solutions collectively rather than centrally. Education and training are where that starts. We run a range of courses designed not just to build individual expertise, but to establish a common approach across the Alliance.

For example, our Special Operations Medical Leaders Course strengthens medical command and control. Our planning course helps standardize how Allies approach force health protection and MEDEVAC/CASEVAC – particularly important for nations that do not have dedicated medical planners and rely on clinicians to take on that role as an additional duty. In more demanding environments, we also deliver advanced training through courses like Advanced Medical Concepts and our Special Operations Surgical Team programs, preparing personnel to operate in austere and unconventional settings. These are just a few examples of a much broader effort to align how we train and prepare across NATO. Education is just the entry point. Where we truly leverage the community is through how we organize it. We rely on working groups and subpanels that bring together subject matter experts from across the Alliance and give them ownership of specific capability areas. For example, the Committee of NSOCM/NSOMT Sites brings together training centers across NATO to assess, endorse, and continuously improve combat medic training. That not only ensures consistent standards, but also expands training capacity and reinforces interoperability through shared lessons and collaboration. Similarly, our Special Operations Surgical Team subpanel is shaping how surgical capability is defined and delivered for SOF – developing doctrine, concepts, and practical approaches that reduce risk and improve survivability in operations. More recently, we established a resuscitation-focused subpanel to advance damage control resuscitation, building on that same collaborative model.

What is important is that this is not driven by a single headquarters. It is a networked approach that builds on the expertise already present across Allied nations. That allows us to move faster, stay operationally relevant, and ensure that what we develop can be implemented in practice. Ultimately, by connecting the community in this way, we turn national expertise into an integrated, interoperable medical capability that directly supports NATO SOF operations.

C&CC: Can you tell us more about how SOFCOM JMED approaches education?

COL Hudak: Our approach to education is about building capability at the operational level – where NATO adds the most value.

At the tactical level, nations are already very strong. Where we focus is above that – helping align how medical support is planned, coordinated, and integrated across multinational SOF operations. That is what enables interoperability in practice. We often describe it as "weaponizing education," What we mean by that is using education as a deliberate tool to build capability across the Alliance quickly and consistently. We do that in close partnership with University Cork College, which allows us to deliver a wide portfolio of targeted courses. These range from leadership and command and control, to medical planning, to operating in austere environments. The goal is not just to train individuals, but to create a shared understanding of how SOF medical support is delivered.

This gives us two key advantages. First, it allows nations to build capability rapidly and in a standardize way. Second, it creates a pool of personnel who are already aligned in how they think and operate —so when they come together on a mission they integrate immediately. An additional benefit is that many of these courses provide academic credit toward advanced degrees through UCC. That is important because it supports long-term professional development and helps sustain the capability over time – not just build it.

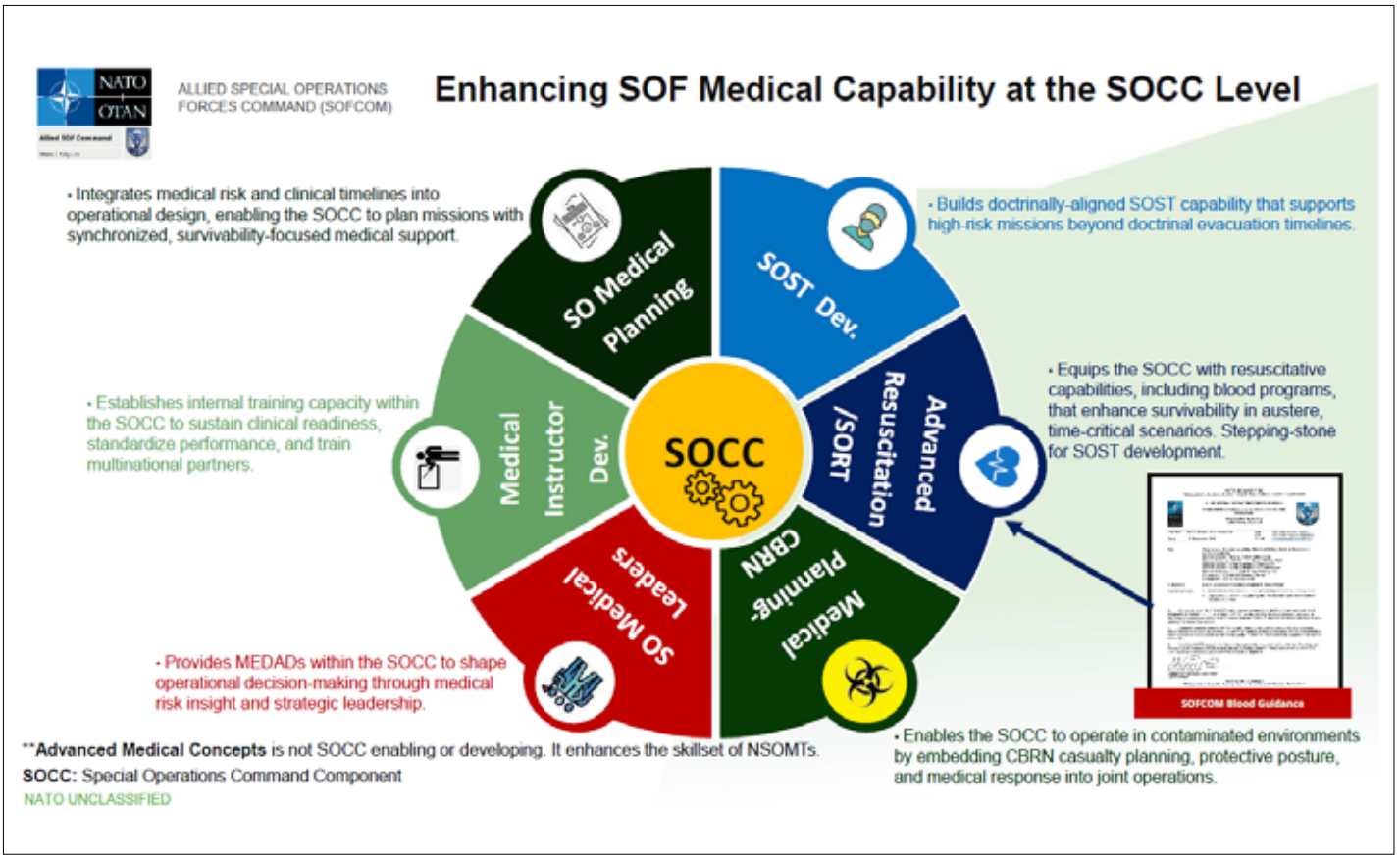
Ultimately, our approach to education is about turning knowledge into operational readiness – so that NATO SOF medical support is aligned, interoperable, and ready to support missions from day one.

C&CC: Could you provide an example of how a nation might use SOFCOM education to develop its SOF medical capacity?

COL Hudak: A good way to look at it is how education translates into real national capability, and Latvia is a strong example of that. They used our Special Operations Medical Instructor Development course to build their own cadre of qualified instructors. That was a critical first step because it gave them the internal capacity to train and sustain capability themselves.

From there, they were able to go further and drive national legal changes enabling the adoption of Tactical Combat Casualty Care (TCCC). That was a significant shift – not just in training, but at the system level. Once that was in place, they expanded it beyond SOF into their broader armed forces, and even into civilian police and first responders. Now they are building on that foundation – leveraging the AR/SORT course to develop forward blood capability and the SOST Development Course to establish a national surgical capacity. So, you can see a clear progression from education, to national ownership, to increasingly advanced and integrated capability.

Latvia is just one example, but it illustrates the model well. What we provide is not an end state. It is an enabler. Education gives nations the tools to overcome barriers, build their own systems, and scale capability in a way that fits their national context. Ultimately, that is what strengthens the Alliance. It means each nation can contribute interoperable, ready medical capability to NATO SOF Operations.



C&CC: How do you address the challenges posed by rapid technological change?

COL Hudak: The way we approach rapid technological change is by staying closely connected to operations and by deliberately integrating innovation into how we develop capability. For us, innovation is not something separate – it is part of how we solve real operational problems. That means bringing together operators, medical personnel, industry, and academia, and testing solutions in realistic environments.

A good example of that is our involvement in SOFCOM's BOLD ADRA operational experimentation exercise. It is designed to connect SOF operators directly with innovators and focus on challenges we are seeing in today's operating environments – particularly in contested and denied settings. From a medical perspective, that is highly relevant. For example, recent work has looked at how technologies like UAVs can help us reach casualties in environments where traditional evacuation is not possible. We are also learning directly from partners like Ukrainian SOF, who bring very current experience from contested battlefields.

What this gives us is a much faster feedback loop. We can identify a problem, test potential solutions, and then feed that back into doctrine, training, and capability development across the Alliance. It also strengthens the network. It connects nations, gives us access to broader NATO expertise, and helps us communicate SOF medical requirements more effectively to industry.

Looking ahead, we are continuing to build on that model, with a growing focus on areas like digital health – working closely with Allied Command Transformation to explore how data and technology can further improve casualty care and decision-making. In the end, it is about ensuring that innovation translates into operational advantage. That way NATO SOF medical support remains agile, relevant, and ready for the environments in which we operate.

HYGIENE AS A COMBAT MULTIPLIER

A National Training Center pilot program is turning canteens into a 4-minute shower capability for U.S. Army soldiers.

By Jonathan Ballesteros, CEO, Geyser Industries, Inc.

One hundred soldiers from the U.S. Army's 1st Cavalry Division of the 8th (1-8) Cavalry Regiment participated in a pilot program during their 14-day National Training Center (NTC) rotation to evaluate a compact field hygiene product: the Geyser Individual Shower System (ISS). Its compact and USB-powered design deploys in 2 minutes, connects to any water container, and uses minimal water by sending each drop through a sponge instead of a shower head. Instead of a 6-gallon shower, soldiers can independently achieve the same hygiene with only 0.25 gallons lasting 4 minutes. That new reality disrupts what is logistically possible: a 400-gallon water buffalo can now shower 1,600 soldiers.

Geyser's Individual Shower System (ISS). Its compact and USB-powered design deploys in 2 minutes and connects to any water container. (Geyser Industries, Inc.)

What began as a practical field experiment to improve hygiene quickly revealed something larger. The results surprised even experienced leaders. One incident to follow kept a soldier and his tank in the fight. The system not only produced significant improvements in soldier hygiene, but also made a difference in readiness, cognitive performance, and morale without disrupting training tempo or creating significant logistical burden.

THE PERSISTENT FIELD PROBLEM

For decades, maintaining hygiene during extended field operations has been a challenge for combat units. In austere environments, soldiers prioritize mission execution over personal recovery. Army Doctrine TC 4-02.3 requires showers once per week and female menstruating soldiers one shower daily. However, the required logistics makes showers too costly, impractical, and hinders training tempo.

Soldiers overcome this gap by bringing baby-wipes. The problem soldiers reported however is that baby wipes are not effective and that they just smear. The result is predictable: skin irritation, fatigue, poor cognitive performance, and declining morale as operations extend into their second week. Command Sergeant Major Joel Raglin from 1-8 Cavalry driving the pilot program framed the issue directly saying, "A lack of showers is one of the biggest problems my soldiers face during long rotations. This is a breakthrough in taking care of our soldiers."

It is not simply about comfort—poor hygiene directly affects combat effectiveness. Reduced sleep quality, physical discomfort, and hygiene-related medical issues degrade cognitive performance during the most demanding phases of training. The Geyser ISS addresses this long-standing gap between regulation and practical execution by reducing water consumption, staying as small as a wipe, and remaining as effective as a shower.

THE INCIDENT KEEPING AN ABRAMS TANK DRIVER IN THE FIGHT

During the mission, Abrams tank driver PFC Joshua Adams experienced a hose line rupture that sprayed his entire upper body with pressurized fire-retardant hydraulic fluid.

Under normal circumstances, such exposure would require medical evacuation, leaving his tank with a skeleton crew. Instead, soldiers utilized the Geyser ISS to rapidly decontaminate Adams on-site. Within minutes, the contaminant was flushed and removed. With a new uniform and hoseline, he gave two thumbs up and safely returned to duty.

"I just felt brand new. It was just like day one all over again," stated PFC Adams three months after the incident occurred. "I do not have scars, no nothing. It is like the incident never happened."

Geyser is now offering a CBRN edition of its ISS with powdered soaps that tackle three different situations: biohazards, irritants, and petroleums.

OBSERVED READINESS BENEFITS

Feedback across 1-8 Cav consistently pointed to improved readiness. Leaders observed measurable differences between units equipped with the system and those without it. One soldier noted with enthusiasm, "With the Geyser ISS, I can be in the box for an entire year. This is the best invention in the history of the Army."

The impact extended beyond physical health. Several soldiers reported improved sleep quality and sustained mental clarity after using the system prior to rest cycles. Soldiers reported that the system changed overall mood during training and helped keep them focused.

MORALE AND LEADERSHIP EFFECTS

Morale emerged as one of the most significant outcomes of the pilot. The platoon equipped with the shower system demonstrated noticeably higher motivation, teamwork, and performance during battlefield operations. An Army chaplain reported, "I could tell who used this product by the way they walked and interacted as a team. The energy-level is totally different."

SIMPLE LOGISTICS, SCALABLE IMPACT

Logistically, today's field shower requires 6-gallon per soldier which costs $6-$30 per shower to transport. The root problem is that water is heavy, bulky, and takes a lot of energy to transport and heat. Our products make the most of each drop.

The ISS proved easy to integrate. It connects to canteens, Nalgene bottles, CamelBak hydration bladders, and jerrycans. Each sponge is easy to swap, compressed for transport, and lasts 3-6 weeks of daily use. The tiny USB battery bank provides 6 hours of wash time. One soldier reported that he had plenty of battery left to recharge comms.

Leaders noted that the system can scale effectively across formations, from individual crews to company-level distribution. The Geyser Squad Shower System allows 9 soldiers to connect their own sponge to the squad's pump and battery system. This effectively replaces the bulky, 3 lbs baby-wipes with a flat, 3 oz bag of sponge and soaps.

A NEW FUTURE FOR READINESS CAPABILITY

With 4-week rotations, basic hygiene will be a higher priority for taking care of soldiers. The Geyser ISS enables leadership to enforce hygiene discipline and sustain combat effectiveness without adding logistics burden. As stated by a senior enlisted leader, "This is not a comfort item. This is a combat multiplier."

DEFINING THE UNIQUE SOF MEDIC CULTURE

The term "Special Operations Forces (SOF) Medic" is not a monolith. It represents a diverse community of professionals whose roles are shaped by the distinct cultures of their parent services, broadly falling into two philosophical camps: the recruitment and training of this skillset's most important asset, its people.

SGM Ryan Nemeth, Senior Enlisted Medical Advisor, U.S. Special Operations Command

Green Berets with 10th Special Forces Group (Airborne) treat a simulated casualty during a medical training at Fort Carson, CO, November 2025. The training emphasized rapid assessment and treatment of traumatic injuries under the demanding conditions of urban operations. (U.S. Army photo by Staff Sgt. Liseth Espinel)

As modern warfare shifts towards large-scale, multi-domain combat, the evolution of the Special Operations Forces (SOF) medic can no longer be a matter of adding skills; it demands a fundamental career-long commitment to medicine to meet the challenges of providing prolonged field care in austere environments. The answer lies not in how these medics are trained for their initial mission, but in how we must fundamentally restructure their careers to retain their expertise. Any flaws in our elite medics' current model risk being magnified by the demands of the future battlefield—a possibility we must seriously consider.

On one side are the warrior-clinicians: Army Special Forces Medics (18Ds) and Naval Special Warfare's Special Operations Tactical Medics. They are combatants first, medics second. Their identification cards lack the defining red cross emblem, a clear indicator of their primary role. However, this model has a critical flaw: as these operators ascend in rank, they transition into operational and leadership roles. Their hard-won medical expertise, a highly perishable skill, fades into the background. For many who are passionate about medicine, this forced departure from clinical practice leads them to seek alternative pathways. They become nurses, physician associates, or even doctors, often still serving the military, but their invaluable SOF experience is lost to the operational formations that need it most.

On the other side are the career-clinicians, those who are "medics for life." This group includes a diverse array of specialists such as Marine Corps Forces Special Operations Command (MARSOC) Corpsmen, Civil Affairs Medics, Army Ranger Medics, other Army Special Operations Combat Medics (68W with the W1 ASI), and the flight medics of the 160th Special Operations Aviation Regiment (SOAR). For them, medicine is a core specialty. Air Force Pararescuemen (PJs) represent a particularly compelling hybrid: like their Army and Navy counterparts, they do not wear the red cross, yet they remain medics for their entire careers, proving that tactical lethality and lifelong clinical practice are not mutually exclusive. This model of career-long development is where the future of SOF medicine must lie.

The paradigm of modern warfare is shifting, and this shift will expose the weakness of the warrior-clinician model. The era of counter-insurgency and the "golden hour" is yielding to the grim reality of Large-Scale Combat

Exercise Special Operations Forces Arctic Medic (SOFAM) 2025 participants get hands-on training with the casualty collection point shelter of the CASEVAC Ecosystem during Special Operations Forces Arctic Medic 2025 at Fort Wainwright, AK, February 2025. SOFAM 2025 prepares medics to operate in arctic or extreme cold environments and provide safe medical care in a "bubble of warmth" in austere conditions. (U.S. Navy Photo by Mass Communications Specialist 1st Class Trey Hutcheson)

Operations (LSCO). In this new battlespace, the challenge is defined by austere conditions where the medic is isolated from evacuation platforms for extended periods. To prepare for this reality, the entire SOF enterprise must adopt the "medic for life" model, transforming the role from a temporary job into a lifelong profession.

THE ARGUMENT FOR A LIFELONG SCALPEL IN A LETHAL ENVIRONMENT

The central challenge of the future battlefield is not just a single concept like Prolonged Field Care, but the overarching reality of providing sophisticated medical care in austere, isolated environments for days or weeks. The lethality of this environment will be unlike anything seen in generations. The proliferation of precise, lethal kinetic munitions means that a single enemy strike can generate a large-scale mass casualty scenario in an instant, creating multiple poly-trauma patients with complex injuries that overwhelm the algorithms of TCCC. This reality demands a medic who can rapidly triage, manage, and sustain a small ward of critically injured soldiers, not just a single patient. This mission requires a depth of knowledge that cannot be maintained as a secondary skill set. Medical proficiency, like any advanced craft, atrophies without constant practice—the "reps and sets" of patient interaction.

While all SOF medics face challenges in getting consistent patient encounters, the problem is acutely worse for warrior-clinicians. As their careers progress, their job requires more warrior and less medic. The medic who was a clinical master at year two is a tactical leader with rusty medical skills by year seven. This systemic erosion of skill is a critical vulnerability.

Encouragingly, SOCOM leadership has recognized this need for a higher, more consistent clinical standard. A monumental effort is underway to wrangle all component entities to adopt the Special Operations-Advanced Tactical Paramedic (SO-ATP) certification as the new benchmark. This initiative involves critical observations of initial training pipelines and, crucially, establishes a "bridge-program" to certify the hundreds of existing SOF Medics across the enterprise who do not already possess the SO-ATP certification. This is a vital and necessary step toward elevating the floor of clinical competence across the entire force.

However, certification, while a critical step, does not solve the entire problem. While the SO-ATP standardizes the initial level of expertise, it does not solve the long-term problem of skill atrophy inherent in the warrior-clinician career path. This programmed obsolescence creates frustration and drives away talent. The «medic for life» model, by contrast, provides a career path that honors this passion, creating the structure needed to maintain and build upon the SO-ATP standard for a full career.

THE SWORD AND SCALPEL: PERMANENT INTEGRATION IN A MULTI-DOMAIN FIGHT

Adopting a career-clinician model does not mean dulling the sword; it means sharpening it for a more complex fight. The future battlefield is a transparent, hyper-connected, and contested space. The medic will be operating in an environment of mass-on-mass conflict, where the threat is not a small insurgent cell but a near-peer military. Operations will be conducted in low-visibility conditions, not just at night, but under the constant gaze of enemy sensors.

The sky will be thick with drone warfare, as ubiquitous unmanned systems—both friendly and hostile—hunt for signatures. Every medical procedure, every heat source, every radio transmission can be a beacon for enemy targeting. The medic's tactical acumen must extend to understanding and countering this threat. The battlefield will also be populated by autonomous vehicles and robotics, creating a complex and unpredictable landscape.

Furthermore, the electromagnetic spectrum will be a primary battleground. The medic can no longer assume their communications will work. The threat of pervasive electronic warfare means that degraded communications will be

A Special Operations Surgical Team cadre member from the 24th Special Operations Wing observes as SOST pipeline students work to treat and evacuate a simulated casualty during a joint Special Operations Forces exercise November 2022, Hulburt Field, FL. SOST are combat-ready battlefield surgeons and medical support personnel who have brought a plethora of advanced combat medicine skills to the USSOF enterprise. (U.S. Air Force photo by Tech. Sgt. Ridge Shan)

the norm, not the exception. The telemedicine link to a consulting surgeon may be jammed. The GPS guiding a CASEVAC platform could be spoofed. Advanced patient monitors could be disabled. The medic must be as proficient with analog medicine and a paper map as they are with their digital tools. Even the minds of the operators will be a battlefield, with sophisticated psychological warfare aiming to induce stress and degrade decision-making at every level. The medic must not only be resilient to these pressures but also be able to recognize and manage their effects on their teammates.

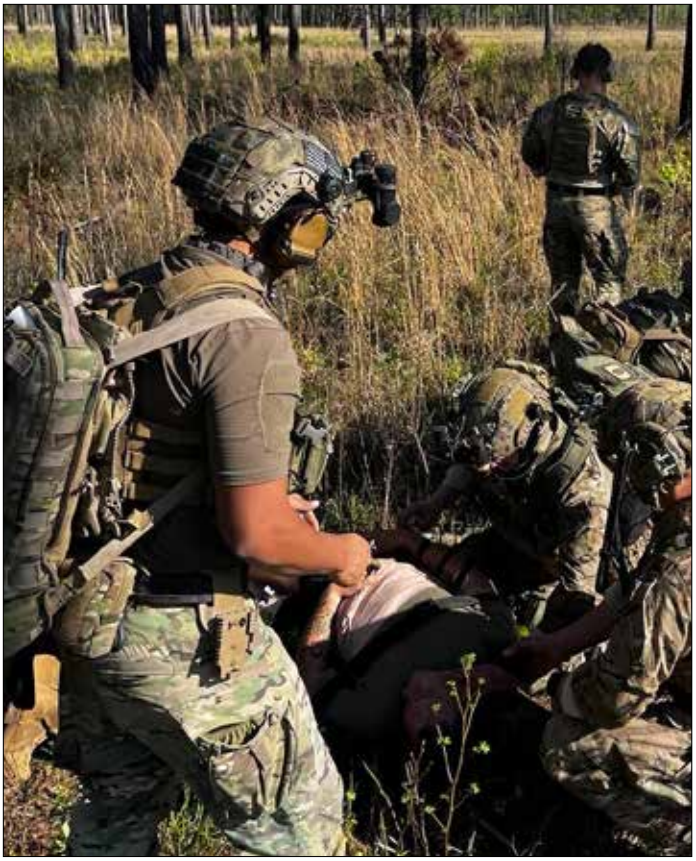
The argument is not to choose the scalpel over the sword, but to recognize that mastery of the modern scalpel in this environment requires the same lifelong commitment as mastery of the sword. In LSCO, clinical decisions are tactical decisions. A career path that forces a choice between leadership and medicine is a false dichotomy that will fail on this brutal, multi-domain battlefield.

FORGING A PROFESSION, NOT A PHASE

The role of the SOF medic is at a tipping point. The shift to multi-domain operations demands a new philosophy. The SO-ATP initiative is a commendable and essential first step in standardizing clinical excellence. However, to truly capitalize on this investment, we must address the structural flaws in our career models. We must stop treating advanced battlefield medicine as a phase in a warrior's career and start treating it as the profession it is. By restructuring all SOF medic career paths to mirror the "medic for life" model, we can stem the "brain drain" of our most talented clinicians and halt the systemic degradation of medical skills. This will create the operator-clinicians we need for the future: experts who can wield both the sword and the scalpel with the equal, career-long mastery that the brutal realities of combat in austere, isolated conditions will demand. The survival of the warfighter depends on this crucial transformation.

EMBRACING TRANSFORMATIVE COMBAT MEDICINE

By SGM Brian Valley, Senior Enlisted Medical Advisor, U.S. Army Special Operations Command



Army Special Operations Forces medics conduct casualty assessment and treatment at a range on Fort Bragg, NC, September 2025. (U.S. Army photo by SGM Brian Valley)

I graduated from the Special Operations Combat Medic (SOCM) course in January 2009, and that experience set the trajectory for my career. Over the past 19 years, I've had the privilege to serve in several of the Army's premier Special Operations units, including the 75th Ranger Regiment, the 95th Civil Affairs Brigade, the Joint Special Operations Command's Joint Medical Unit, and the 160th Special Operations Aviation Regiment. I currently serve as the Senior Enlisted Medical Advisor for the United States Army Special Operations Command. My operational experience includes multiple deployments across U.S. Central Command (CENTCOM) and U.S. Africa Command (AFRICOM), with time spent in Afghanistan, Iraq, Syria, Senegal, Djibouti, and Somalia. I have served in roles ranging from clinic medic to Civil Affairs team medic, company senior medic, battalion medical operations non-commissioned officer (NCO), and senior enlisted medical advisor. Those assignments provided a broad operational perspective and strengthened the importance of disciplined leadership, sound clinical judgment, and adjustability in difficult environments.

A GLOBAL THREAT-DRIVEN TRANSFORMATION

From a medical standpoint, the evolution over the past two decades has been significant. When I graduated from SOCM, the go-to drug of choice for pain was still morphine, and we had the options to resuscitate patients with either Hextend or Lactated Ringer's. We've seen meaningful progress in pain management with the use of medications like ketamine and fentanyl. More importantly, the widespread adoption of whole blood at the point of injury has fundamentally changed survivability on the battlefield. Programs like Ranger O Low Titer allow us to rapidly access fresh whole blood from pre-screened donors, enabling damage control resuscitation within minutes. That capability has had a direct and measurable impact on casualty outcomes.

As we transition from counterterrorism to large-scale combat, we are entering a different operational reality. Medics must now be prepared for extended casualty care, longer evacuation timelines, and degraded or denied medical evacuation platforms. The dynamics of current warfare are being played out in real time. This requires a higher level of clinical competence, but, just as importantly, disciplined planning and supply management at every echelon.

We are also operating in increasingly contested environments. The proliferation of unmanned systems and advanced targeting capabilities forces us to reexamine how we deliver care, how we move, and how we protect both patients and providers, as seen with lessons learned from the Ukraine conflict. Survivability is no longer assumed, and medical operations must be nested within that reality. We'll have to get comfortable with this new reality and triage casualties accordingly.

Disease and non-battle injuries will remain a continual challenge, especially in large-scale operations where environmental and logistical constraints are amplified. At the same time, medical logistics will become more complex. The supply chains we relied on over the past two decades may not be available in future conflicts, which places a premium on innovation and forward-thinking sustainment strategies.

COUNTERING HAZARD THROUGH CAPABILITY

Innovative technologies, including telemedicine, autonomous resupply, and advanced diagnostics, will play an important part in addressing some of these gaps. However, technology alone is not the solution. It must be integrated into well-trained, disciplined formations that can operate effectively under pressure and uncertainty.

There is also value in looking backward. Many of the challenges we are preparing for today are not new. Army medicine has faced similar conditions in previous conflicts, and lessons from those experiences remain relevant. Fresh whole blood and torniquets weren't new medical interventions and treatments. Both were used in many wars before the Global War on Terrorism, but medicine tends to ebb and flow over time. Understanding history allows us to apply proven principles while adjusting to modern threats.

Moving forward, ARSOF medics will be required to operate with a higher degree of independence and versatility. They must be capable of providing prolonged field care, be comfortable operating in contested environments, and be proficient at integrating emerging capabilities into their practice. Their role goes beyond clinical care; they are critical to maintaining combat power, resilience, and trust within the formation.

To meet these demands, we must continue to invest in our number one capability, people. Training must remain rigorous and relevant, and leaders at every level must focus on readiness and adaptability. The character of warfare is changing, and our medical force must evolve with it. If we get that right, we will remain prepared to meet the demands of the next fight.

STREAMLINING FORCE HEALTH PROTECTION

Force Health Protection, or FHP, is part of the Defense Health Agency (DHA)'s Operational Medical Systems team and manages the provision of cutting-edge medical solutions to combatant commanders facing myriad threats in the operational environment.

By Operational Medical Systems Strategic Communications Office

U.S. Army medics and medical officers with the 512th Field Hospital treat a role player patient inside an emergency room field tent during a mass casualty exercise as part of Exercise Dynamic Employment of Forces to Europe for NATO Deterrence and Enhanced Readiness (DEFENDER) 2025, Vepriai Rocket Base, Lithuania, May 2025. As part of DHA's Operational Medical Systems Program Management Office, FHP works with combatant commands and regulatory experts across the globe to rapidly provide a treatment, diagnostic, or preventive medical countermeasure against high-consequence threats to the Warfighter when a Food and Drug Administration-approved product is not available. (Defense Health Agency Photo by T. T. Parish/Released)

In February 2026, the newly appointed director of the Defense Health Agency (DHA), Vice Adm. Darin K. Via, made one thing clear: the DHA is a combat support agency. From the front lines to Military Treatment Facilities, each core function of the Department of War (DoW) health system serves one unifying mission as America's warfighters face unprecedented challenges around the globe. Clinical care, education, training, logistics, research, information systems, and enterprise management combine to make the DHA a force multiplier for a lethal, prepared, and far-forward Joint Force.

COL Charles Bane

Delivering for those who serve is the DHA's primary objective, and its mission covers the full array of military and dependent health care in both forward-deployed operational treatment and clinical settings in military hospitals.

A prime example of the "Delivering" ethos is the Operational Medical (OPMED) Systems Force Health Protection (FHP) division, based at Fort Detrick, MD. Led by U.S. Army COL Charles "Chuck" Bane, FHP's team of regulatory and product management experts rapidly fields treatments, diagnostics, and preventive medical countermeasures for high-consequence threats to the troops when a U.S. Food and Drug Administration (FDA)-approved product is not available.

FHP manages regulatory oversight and implementation of policies to bridge the gap between new medical products and the Joint Force, enhancing combat readiness and maintaining warfighter lethality. The team's portfolio, including French Freeze-Dried Plasma for combat casualty care and treatments for viral diseases, gives combatant commanders and Joint Force medical providers deployed across the world ready access to products that are needed for operational medical readiness. FHP also uses a variety of regulatory tools,

including Investigational New Drug Expanded Access Protocols and Emergency Use Authorizations. These mechanisms allow for investigational medical products, which have not been approved by the FDA, to be used to protect military personnel in the event of a life-threatening emergency.

The team also provides instructions on FDA-compliant product use and safety data reporting to ensure the best possible support to DoW personnel. Product can be pre-positioned where it is most likely to be needed, especially in areas where timing of treatment may be critical.

In a brief interview with OPMED Strategic Communications, COL Bane provided insight into his team's role, the evolving landscape of the Force Health Protection (FHP) mission to meet U.S. Department of War (DoW) operational demands in a challenging threat environment, and how FHP can serve as a model of expediency to fill critical capability gaps, helping warfighters fight and win anywhere in the world.

OPMED STRATCOM: What is your role as director of FHP, and why is your team's mission important for OPMED, DHA, and DoW?

COL Bane: I have served in a variety of roles during my 21-plus year career as an Army veterinarian, yet FHP has such a specific and high-consequence role that I have gained a whole new understanding of what our medics, corpsmen, and medical officers need to provide health care for our warfighters. My responsibilities as director are never an individual effort. It takes each member of the FHP team, and the direct support of innumerable organizations and health care experts, to identify and coordinate delivery of required treatments for use in far-forward environments. There is no straight-line approach to how FHP supports our partners across the globe, so our role is intricate, yet flexible – because we have to respond and support as expediently as possible while ensuring the solutions we provide are timely, cost effective, and in line with Department of War policies. My most critical role is defining our mission as a combat support function within OPMED and DHA while leveraging my experience and authorities to enable the FHP team to excel. Our success is a credit to the professionalism, mission focus, and dedication each member of our team brings to the table, and I am incredibly fortunate to lead them each day.

OPMED STRATCOM: As OPMED's role has expanded to support the Joint Force, how has FHP evolved to better meet the needs of the DHA and DoW?

COL Bane: FHP is a core function of OPMED's mission to equip military medical providers. We lean into challenges to meet future needs of the Joint Force and combatant commanders so we can continue to outpace the threats of near-peer competition in places like the Indo-Pacific and Arctic regions. FHP is a small component within OPMED, yet our reach is nearly unlimited due to our flexibility and responsiveness to meet urgent needs anywhere in the world with the speed of relevance. Individual units, Warfighters, naval fleets, Marine expeditionary units, Army divisions, Air Force wings – all stand ready to respond as directed by the Department of War. That operational tempo requires the FHP team to build relationships with stakeholders across the military medical establishment and with industry partners to rapidly deliver critical medical capabilities for troops on the front lines, wherever that may be.

OPMED STRATCOM: How does FHP's operational tempo mirror the real-world challenges DoW is tackling across the world?

COL Bane: The key to our success is responsive partnership. We are directly connected to operational planners across the Joint Force to generate opportunities, not just wait for taskings. This gives us a proactive posture and enables our situational awareness of wider DoW strategies in each area of operations across the combatant commands. What we do that is unique within the DoW is give leadership – from combatant command down to the battalion aid station level – access to cutting-edge medical solutions using authorized regulatory mechanisms. Our close partnership with DHA's Office of Regulated Activities is key to the process. This capability is critical for combatant commanders who are facing myriad threats from the operational environment. Our Soldiers, Sailors, Airmen, and Marines cannot maintain 100% readiness without some of the solutions we provide.

Team members with the Defense Health Agency's Force Health Protection division speak with U.S. Army soldiers belonging to the 173rd Airborne Brigade as part of Exercise Dynamic Employment of Forces to Europe for NATO Deterrence and Enhanced Readiness (DEFENDER) 2025, Pabrade Training Area, Lithuania, May, 2025. As part of DHA's Operational Medical Systems Program Management Office, FHP works with combatant commands and regulatory experts across the globe to rapidly provide a treatment, diagnostic, or preventive medical countermeasure against high-consequence threats to the Warfighter when a Food and Drug Administration-approved product is not available. (Defense Health Agency Photo by T. T. Parish/Released)

OPMED STRATCOM: What are some 'real-world' examples of FHP's direct support in key geographic regions and combatant commands?

COL Bane: My team is fantastic, and they constantly look for opportunities to influence medical readiness strategies for combatant commands and boots on the ground. We routinely travel to major Military Treatment Facilities and take part in regional exercises – like we did in 2025 supporting the Army-led DEFENDER Exercise in Lithuania. We train medical providers across combatant commands, brief Joint Force medical leadership, and assess readiness to identify possible capability gaps. These efforts are paramount to OPMED and DHA acquisition transformation strategies, allowing us to meet specific needs for commanders planning for critical missions. FHP's effectiveness relies on direct, consistent, routine, and flexible engagement with the military medical professionals deployed worldwide. I am proud to be part of OPMED and DHA as they continue to revolutionize how the DoW saves lives and cares for America's Warfighters.

NEXT-LEVEL DIAGNOSTICS FOR ADVANCED FORCE PROTECTION

A Defense Health Agency (DHA) sponsored traumatic brain injury (TBI) field assessment program could revolutionize brain trauma treatment.

By Operational Medical Systems Strategic Communications Office

Hospital Corpsman 3rd Class Mikayla Bobbing operates a near infrared Traumatic Brain Injury (TBI) assessment device during an end-user touchpoint hosted by the Operational Medical (OPMED) Systems Program Management Office, Camp Lejeune, NC, January 2026. The touchpoint at Naval Medical Center Camp Lejeune is one in a series of planned engagements with prospective end users to help the OPMED Warfighter Readiness, Performance and Brain Health project management office refine the development of field-portable TBI detection devices designed for use in austere, remote locations across the globe. OPMED, part of the DHA, partners with stakeholders across the Joint Force to develop, acquire, and field medical devices, treatments, and frontline care solutions for military medical providers to fill capability gaps with the speed of relevance. (Defense Health Agency photo by T. T. Parish/Released) *Devices shown are notional and photos are from pre-decisional assessments.

Team members with the Defense Health Agency's Operational Medical (OPMED) Systems Program Management Office routinely engage with military medical providers, industry partners, and stakeholders from across the Department of War (DoW) to refine their product development strategies.

For OPMED's Warfighter Readiness, Performance, and Brain Health team, end-user touchpoints are designed to collect feedback from clinical and frontline medical providers. They help to mature the development of traumatic brain injury (TBI) detection capabilities and accelerate the successful completion of the TBI Field Assessment Program, also known as TBI-FAP.

Damien Hoffman

TBI-FAP is unique in the brain health treatment arena, according to Damien Hoffman, a WRPBH product manager whose team is charged with developing and delivering novel TBI medical capabilities to the warfighter. The program, which includes a hemorrhage detection device and a TBI assessment software application, is designed to simplify what has traditionally been a logistically burdensome and overtly subjective process: assessing brain injuries at or near the point of injury.

Over 505,000 traumatic brain injuries have been reported within the Department of War since 2000, ranging from mild to severe, according to Defense Health Agency data. Many TBIs are not accompanied by outwardly presenting symptoms yet can have both short and long-term health effects. In TBI cases, identifying internal injuries, like intercranial hemorrhage, subdural hematomas, or other non-visible brain damage, is a vital step to ensuring proper triage and treatment across the continuum of care.

"Ultimately, TBI-FAP is uniquely positioned to ensure proper care to

A traumatic brain injury (TBI) assessment device sits on display during an end-user touchpoint hosted by the Operational Medical (OPMED) Systems Program Management Office, Camp Lejeune, NC, January 2026. (Defense Health Agency photo by T. T. Parish/Released) *Devices shown are notional and photos are from pre-decisional assessments.

casualties, keep warfighters in the fight, and expeditiously return those who have recovered back to duty," Hoffman said, "and directly aligns with strategic objectives of the Defense Health Agency and the Department of War."

Field environments demand durable and cost-effective systems, while operational tempo drives the need for those systems to be rapidly deployable, objective, and user-friendly in the hands of frontline medical providers. The TBI field assessment capability is designed to give users the data they need to quickly and confidently make treatment decisions at the speed required by large-scale combat operations.

Current options for TBI assessment rely on checklist-based cognitive assessments or robust medical facilities with advanced capabilities like Magnetic Resonance Imaging (MRI) and computed tomography (CT) scans, according to Hoffman. However, while medical imaging is the gold standard for accurate identification of brain traumas, patients typically must be moved from point of injury to access medical imaging – losing precious hours, manpower, and resources without objective information to determine if medevac to higher echelon care is entirely necessary.

The delivered brain hemorrhage detection capability will be portable, lightweight, and field-suitable, and will use non-invasive technologies, such as radiofrequency or near infrared, to assess casualties for intracranial hemorrhage. Accompanying the hemorrhage detection device will be tablet- or phone-based applications that offer a suite of digital cognitive assessments. Each of these will be optimized to be easily used by medics, corpsmen, and medical officers, and give accurate, objective data within minutes.

OPMED's strategic engagements with prospective end users across the service branches also help to ensure the TBI-FAP devices meet the needs of military medical providers and can be integrated with current and emerging medical workflows. Once fully developed, the fielded technologies – possibly including hardened versions of otherwise commercially available products – will give medics, medical officers, and commanders the information needed to save lives and more efficiently manage constrained or fatigued assets, including evacuation.

Across the joint services, there is significant demand for capabilities like TBI-FAP to fill critical gaps for brain trauma assessment. OPMED's team, working with military stakeholders, industry partners, and academic experts, is committed to finding the best available solution – and to delivering as soon as possible to our warfighters as the Department of War continues to prepare for conflicts and deter threats across the globe.

"With TBI-FAP, leaders and medical providers alike will have unmatched TBI assessment capabilities, informing frontline treatment decisions with objective information," said Hoffman. "In turn, this will preserve assets and combat power while ensuring proper TBI care is provided to those who require it."

CALENDAR OF EVENTS

MAY 11 – 14
XPONENTIAL/AUVSI
Detroit, MI
Xponential.org

MAY 11 – 14
MHS Conference
Dallas, TX
Mhsconference.com/event

MAY 12-14
LANPACK
Honolulu, HI
Meetings.ausa.org/lanpac

MAY 17 – 20
Aerospace Medical Association
Denver, CO
Asma-uhms-asm.org

MAY 18 – 22
SOF WEEK
Tampa, FL
Sofweek.org

JUN 10 – 11
Human Performance Biosystem
National Harbor, MD
Humanperformance.dsigroup.org

AUG 5 – 6
Border Security & Intelligence
Washington, DC
Border.dsigroup.org

AUG 17 – 21
SAPA & NSPA CME Conference
San Antonio, TX
Cvent.me/7Bgdx2

SEPT 15 - 16
National Insider Risk Symposium
Washington, DC
Insiderriskevent.com

OCT 12 – 14
AUSA Annal Meeting
Washington, DC
Meetings.ausa.org/annual

NOV 19 – 20
CMC Conference
Paris, France
Cmc-conference.de

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