

Advancing Readiness by Tailoring Sleep Tactics: Actionable Intelligence from the *Sleep and Fatigue Management in the DoW Convening*

T. Rogers,^{1,2} J. Rodden,^{1,2} C. Almeida-Suhett,³ T.J. Doty,⁴ V. Capaldi,⁵ J.K. Werner,⁶ G. Park,³ D. Dolan,^{1,2} J. Ellis,⁷ W. Brim,^{1,2} & M.M.P. Willing^{1,2}

¹Consortium for Defense Psychology USU; ²Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc.; ³Consortium for Health and Military Performance, USU; ⁴Walter Reed Army Institute of Research, Sleep Research Center; ⁵Center for the Study of Traumatic Stress, USU; ⁶Department of Neurology, USU; ⁷Joint Base Andrews

Research & Emerging Technologies

Form Factors Matter

- Optimize end user functionality for safety, integration with tactical gear, and ongoing utilization of tech

Data Security, Connectivity, and Visibility

- Recognize constraints of operational demands and LSCO environments that may require a self-contained tactical mesh network
- Increase visibility of each service member's data to empower service members to participate

Point of Entry Considerations

- Capitalize on early military training to instill sleep literacy and habits
- Target training environments to test technology and interventions
- Leverage embedded personnel to disseminate tools, resources, and sleep literacy directly to the warfighter

"When you give a soldier a wearable or something that they can use to gamify or compete with against their battle buddies or build camaraderie through that wearable device, they will actively make changes on their own."

Changing the Culture

Reframing Culture

- Link sleep to lethality, elite physical performance, and higher testosterone levels for greater buy in
- Frame sleep as a matter of safety and effective risk management

Use Practical and Low-Tech Interventions

- Address environmental factors with low tech solutions
- Utilize available tools for optimization of work schedules
- Use tactical napping, sleep banking, reverse cycle PT

Leadership Modeling & Policy

- Provide clear guidance to limit off duty recalls
- Model sleep discipline from the top down
- Create and enforce wellness policies to ensure protected recovery times

"Sleep is the easiest and free and cheap performance enhancing drug. And legal."

"Sleep is not a luxury. It is a weapon system."

- Background: Two day convening event held in response to a 2024 GAO report:
<https://www.gao.gov/products/gao-24-105917>
- Results: Themes from convening presentations and breakout sessions using qualitative analysis



The opinions or assertions contained herein are the private views of the presenter and are not to be construed as official or as reflecting the official policy or position of the Uniformed Services University, Department of War, U.S. Government, the Henry M. Jackson for the Advancement of Military Medicine, Inc. Additionally, the authors have no conflicts of interest to report

Google Gemini was used to analyze all data.

Corresponding author: timothy.rogers.ctr@usuhs.edu

Analytical Capabilities

Common Data Elements (CDEs) and Data Repository

- Develop validated sleep CDEs for military sleep research
- Create a centralized military data repository so information can be shared, compared and utilized across the enterprise

Actionable Data

- Support decision making process by providing timely feedback with clear dispositional status for leaders
- Use wearables to establish thresholds to determine risk and evaluate interventions

Connecting Sleep to Operational Outcomes

- Connect sleep to operationally relevant performance metrics, such as marksmanship accuracy, gunnery tables, and injury rates
- Identify surrogate biomarkers to use in field
- Capture economic data on true cost of sleep loss to prioritize investment in sleep related initiatives

"We need to figure out ways to get systems to feed systems information for decision-making and building tools for that"

Clinical Care & Precision Medicine

Challenges of conventional interventions

- Identify solutions for sleep health challenges such as CPAP use, sleep hygiene in operational settings, and CBT-I treatment due to changing work demands
- Address challenges with access to care and lack of trained providers in evidence-based treatments for common sleep conditions
- Reduce latency of help seeking for sleep issues (end of career vs earlier)

Harnessing Individual Chronotypes:

- Optimize operational readiness by aligning shift work and duties with individual's natural circadian rhythm
- Document sleep chronotype in medical records to help with timing of medications, accuracy of medical testing, and sleep interventions

"If you've ever been in a tent with...30 other people, sleep hygiene goes out the window. You're on 24/7 ops."