



**USU**  
Uniformed Services University

**CGHE**

Center for Global Health Engagement

**ISSUE 2**  
**AUGUST 2023**

# DoD GHE Snapshot

## **GLOBAL HEALTH ENGAGEMENTS AND INTEROPERABILITY: START WITH PATIENT HANDOFFS!**

Written by: Dr. Ramey Wilson, MD, MPH, COL (Ret.)<sup>1</sup>

*"The opinions and assertions expressed herein are those of the author(s) and do not reflect the official policy or position of the Uniformed Services University of the Health Sciences or the Department of Defense."*

*The Uniformed Services University of the Health Sciences' (USU's) Center for Global Health Engagement (CGHE) is pleased to share the second issue of the Department of Defense Global Health Engagement (DoD GHE) Snapshot. The DoD GHE Snapshot is intended to create self-publishing opportunities for GHE professionals to share knowledge and experiences and learn from one another in real time. We hope you enjoy and please refer to our social media and website for real time updates.*

## **GLOBAL HEALTH ENGAGEMENTS AND INTEROPERABILITY: START WITH PATIENT HANDOFFS!**

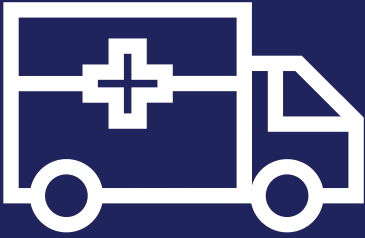
The National Security and Defense Strategies, as well as Department of Defense Instruction 2000.30: Global Health Engagement (GHE) Activities, emphasize interoperability. More specifically, they emphasize the importance of working with our Allies and Partners in order to develop interoperability to enhance our mutual readiness by optimizing our ability to support each other during times of crisis, conflict or competition.

In the health services domain, expeditionary combat casualty care and patient evacuation and movement are expected to become more difficult in future conflicts. This has been clearly demonstrated in Ukraine and should inform our expectations for future large-scale combat operations in both maritime and land domains as we face near-peer adversaries. Based upon current patient evacuation and movement doctrine, patients move through a series of care “nodes” while being moved to rear areas. During this process, patients receive stabilizing interventions and surgeries from mobile and



fixed medical teams, as well as dedicated evacuation or transport teams with enroute care. This process, by design, keeps medical units forward deployed while patients are moved to higher levels of care so the system is prepared for follow-on casualties. The result of this system, however, requires responsibility for care to transition with the patient. These transitions of care, or “patient handoffs,” are critical and high-risk events that can have significant impacts to patient safety, morbidity and mortality.

Long recognized as areas of risk in our U.S. hospital systems, patient handoffs in the austere and expeditionary environment can be even more risky due to the challenges of pre-hospital care, such as weather, noise, darkness, limited time, disjointed care documentation systems, and unfamiliarity among the sending and receiving units.



When providing care with our Allies and Partners in a coalition setting, differences in language, equipment, power supply, medications, documentation and standards of care further contribute to the risks of patient handoffs. It is essential, therefore, to prioritize exercising and improving patient handoffs through GHE activities, especially in the austere and expeditionary environment, to enhance medical interoperability and patient care.

Several studies have emphasized the value of good handoffs to patient care and patient outcomes through enhanced interoperability. Kuncze NE et al. conducted a review of various verbal and written patient systems used by different military units and recognized some key components to effective patient handoffs.<sup>1</sup> These included: following a standardized format, having both a verbal report and written documentation, using closed loop communication, and providing an opportunity for questions and clarification. Communication skills were also highlighted: healthcare providers should use clear, concise, plain language and avoid medical jargon. Unfortunately, there have been no systematic inquiries or publications that have identified best practices when transferring a patient among international partners. One could expect that in addition to those identified by Kuncze, language skills and an understanding of each other's medical system and standards of care would likely be ideal.

There is currently no published U.S. joint doctrine on how to conduct effective handoffs. While this challenges U.S. forces to work in a Joint environment, this lack of doctrine further strains our ability to develop and establish international standards with our Allies and Partners as we prepare to fight and deliver health services together. Work in this area, however, has been ongoing and continues.<sup>2-4</sup> Given the various different contexts when patient handoffs occur—evacuation from the field near the point of injury vs. patient movement after surgical stabilization vs. air ambulance transfers, for example—standardized procedures will likely need to vary based upon the context of the handoff and the clinical condition of the patient. Lessons observed in Ukraine, however, should caution us on relying on technology and electronic systems to create solutions. Ukrainian medics have learned the hard way that electronic signatures and footprints are being used to guide lethal munitions by adversaries and electronic jamming impacts communications and the ability to be prepared for large casualty arrivals.<sup>5</sup> Enduring and useful solutions will need to balance the various benefits and risks of time, technology, triage of information and standardization to optimize efficiency. This will involve training and deliberate practice with all stakeholders, both domestic and international.

There is, however, evidence that training can be effective but the majority of this research has been focused on fixed-facility hospitals in non-conflict environments. Many of the principles are likely transferable to the deployed expeditionary system. Starmer AJ et al., for example, demonstrated decreased

medical errors after the implementation of a handoff program.<sup>6</sup> Khan et al. demonstrated a decrease in “significant” and “non-preventable” medical errors in a multi-hospital study after implementing “family centered rounds” which fostered a shared understanding and improved communication amongst clinicians, nurses, staff and families.<sup>7</sup>

Operational military medical units should deliberately pursue GHEs with Allies and Partners with a focus on improving our ability to conduct patient handoffs. Whether as part of mass casualty planning, regulated patient movement or unregulated patient movement, these engagements have double benefits. First, they immediately improve the medical readiness of these units in the context of their engagement, as they could immediately be put into practice if there are casualties or injuries during training missions that require care and evacuation. Second, they build upon the readiness and understanding of these requirements for future missions. Higher levels of medical interoperability, such as fielding

integrated medical units, are multifaceted and complex when focused on integrating or combining capabilities. Focusing GHE objectives to patient handoffs between different medical units provides a more discrete and bounded task that may be more pragmatic, especially in the context of larger exercises and engagements. As patient handoffs are usually done fairly rapidly, engagements to develop, rehearse and exercise this critical skill can be conducted at relatively low cost, with multiple repetitions, and scaled appropriately.

As standards for these activities develop and mature, measures of effectiveness and performance should be used to assess the quality and effectiveness of the handoffs. As leaders and medical planners look to enhance interoperability and readiness, GHE events focused on the requirements and practice of patient handoffs provides a multifaceted engagement that immediately enhances interoperability and contributes to long-term readiness.

<sup>1</sup> Ramey L. Wilson, MD, MPH, COL (Ret.)  
Senior Advisor on Knowledge Management  
Henry M. Jackson Foundation for the Advancement of Military  
Medicine (HJF), Inc., in collaboration with USU's CGHE

## REFERENCES

1. Kuncze NE, Lyon A, Carlton D, Jeyarajah T, Strayhorn CM, Lopreiato J, Wilson R. A Review of Verbal and Written Patient Handoffs Applicable to the U.S. Military's Expeditionary Care System. *Mil Med.* 2023 Jan 7;usac418. doi: 10.1093/milmed/usac418. Epub ahead of print. PMID: 36617244.
2. Novak LL, Simpson CL, Coco J, McNaughton CD, Ehrenfeld JM, Bloos SM, Fabbri D. Understanding the Information Needs and Context of Trauma Handoffs to Design Automated Sensing Clinical Documentation Technologies: Qualitative Mixed-Method Study of Military and Civilian Cases. *J Med Internet Res.* 2020 Sep 25;22(9):e17978. doi: 10.2196/17978. PMID: 32975522; PMCID: PMC7547393.
3. Goolsby C, Schuler K, Tilley L, Zebrowski A, Dacuyan-Faucher N, Kim C, Redlener M. Military Response to Medical Crises-Consensus Recommendations for Military-Civilian Transitions of Care. *Disaster Med Public Health Prep.* 2022 Dec 12;17:e281. doi: 10.1017/dmp.2022.246. PMID: 36503604.
4. Loos PE, Glassman E, Doerr D, Dail R, Pamplin JC, Powell D, Riesberg JC, Keenan S, Shackelford SA. Documentation in Prolonged Field Care. *J Spec Oper Med.* 2018 Spring;18(1):126-132. doi: 10.55460/ID7F-Q4WE. PMID: 29533447.
5. Epstein, Aaron MD, MA; Lim, Robert MD, FACS, FASMB; Johannigman, Jay MD, USAR, MC; Fox, Charles J MD, FACS; Inaba, Kenji MD, FACS; Verbruyse, Gary A MD, FACS; Thomas, Richard W MD, DDS, MSS; Martin, Matthew J MD, FACS; Konstantyn, Gumeniuk MD, PhD; Schwartzberg, Steven D MD, FACS, MAMSE. Putting Medical Boots on the Ground: Lessons from the War in Ukraine and Applications for Future Conflict with Near-Peer Adversaries. *Journal of the American College of Surgeons* 237(2):p 364-373, August 2023. | DOI: 10.1097/XCS.0000000000000707
6. Starmer AJ, O'Toole JK, Rosenbluth G, Calaman S, Balmer B, West DC, Bale JF Jr, Yu CE, Noble EL, Tse LL, Srivastava R, Landrigan CP, Sectish TC, Spector ND; I-PASS Study Education Executive Committee. Development, implementation, and dissemination of the I-PASS handoff curriculum: A multisite educational intervention to improve patient handoffs. *Acad Med.* 2014 Jun;89(6):876-84. doi: 10.1097/ACM.0000000000000264. PMID: 24871238.
7. Khan A, Spector ND, Baird JD, Ashland M, Starmer AJ, Rosenbluth G, Garcia BM, Litterer KP, Rogers JE, Dalal AK, Lipsitz S, Yoon CS, Zigmont KR, Guiot A, O'Toole JK, Patel A, Bismilla Z, Coffey M, Langrish K, Blankenburg RL, Destino LA, Everhart JL, Good BP, Kocolas J, Srivastava R, Calaman S, Cray S, Kuzma N, Lewis K, Thompson ED, Hepps JH, Lopreiato JO, Yu CE, Haskell H, Kruvand E, Micalizzi DA, Alvarado-Little W, Dreyer BP, Yin HS, Subramony A, Patel SJ, Sectish TC, West DC, Landrigan CP. Patient safety after implementation of a co produced family centered communication programme: multicenter before and after intervention study. *BMJ.* 2018 Dec 5;363:k4764. doi: 10.1136/bmj.k4764. PMID: 30518517; PMCID: PMC6278585.



For questions or additional  
information, please contact us at  
[cghe@usuhs.edu](mailto:cghe@usuhs.edu) or visit our website at  
[cghe.usuhs.edu](http://cghe.usuhs.edu)