Defense Health Board Report

Prolonged Theater Care Part 1

March 5, 2024

President's Memo

DEFENSE HEALTH BOARD
7700 ARLINGTON BOULEVARD, SUITE 5101
FALLS CHURCH, VA 22042-5101

Defense Health Board

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE FOR HEALTH AFFAIRS

SUBJECT: Prolonged Theater Care Report, Part 1

The Defense Health Board (DHB) is pleased to submit Part 1 of its report on Prolonged Theater Care. This report, along with its findings and recommendations, emphasizes the importance of tracking the training of military medical personnel, and maintaining systems that allow assessment of the effectiveness of military-civilian trauma training partnerships, as well as the overall readiness of the military medical force. Part 2 of the report will identify the training that is required for management of battle and non-battle injuries and best practices, along with recommendations for improvement and integration.

On September 28, 2023, the Assistant Secretary of Defense for Health Affairs (ASD(HA)) directed the DHB, through its Trauma and Injury Subcommittee, to provide recommendations to the Department on the education and training of military medical personnel at military-civilian trauma training sites for prolonged theater care. The Trauma and Injury Subcommittee examined U.S. military guidance and doctrine, and peer-reviewed literature related to prolonged theater care. The Subcommittee interviewed stakeholders and subject matter experts in prolonged theater care, large-scale combat operations, and military medical education and training. The Subcommittee received briefings from, and consulted with, experts from both government and civilian institutions.

The Trauma and Injury Subcommittee presented Prolonged Theater Care Report, Part 1 to the DHB on March 5, 2024. Following public deliberation of the findings and recommendations, the DHB approved the attached report. These findings and recommendations address the need for the Department to ensure training of military medical personnel for delivery of prolonged care in resource limited environments. Further, they underscore the importance of adherence to existing guidance for data collection on the training of medical personnel.

On behalf of the DHB, I appreciate the opportunity to provide the Department with this independent review and hope that it provides useful and timely information for developing sustainable military-civilian trauma training partnerships with attention to military medical personnel preparedness and readiness. The DHB believes there is some urgency in optimizing ongoing training of military medical personnel to support the National Military Strategy as well as meeting the need to surge medical capabilities in case of overwhelming national needs.

Karen Guice, M.D., M.P.P.
President, Defense Health Board

Attachment:
As stated

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The Defense Health Board

The Defense Health Board is a Federal Advisory Committee to the Secretary of Defense that provides independent advice and recommendations pertaining to health-related matters of special interest to the DoD. The Defense Health Board supports the Military Health System, one of America's largest and most complex health care institutions.

The Defense Health Board's mission is to provide independent advice and recommendations to maximize the safety and quality of, as well as access to, health care for DoD health care beneficiaries. The Defense Health Board addresses matters pertaining to:

- DoD health care policy and program management
- The delivery of high-quality health care services to DoD beneficiaries
- The promotion of health, wellness, and prevention within the DoD
- The treatment of disease and injury by the DoD
- Health research priorities
- Other health-related matters of special interest to the DoD

The main Board is supported by five subcommittees including the Public Health, Health Systems, Trauma and Injury, Neurological and Behavioral Health, and Health Care Delivery Subcommittees. With the assistance of Defense Health Board Staff, the Board and Subcommittees investigate matters pertaining to health and health care to provide detailed analyses, insights, findings, and recommendations for deliberation by and final endorsement of the main Board.

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Introduction

The goal of the 2022 *National Security Strategy* is to establish free, open, prosperous, and secure international order. Achieving this goal requires modernization and strengthening of the military so that it is equipped for the era of strategic competition with major powers.[1] The 2022 *National Defense Strategy* focuses primarily on the need to sustain and strengthen U.S. deterrence against foreign threats. Top-level defense priorities include deterring strategic attacks against the U.S., allies, and partners; defending the homeland; and prevailing in conflicts in the Indo-Pacific region and Europe.[2] The mission of the Military Health System is to sustain ready medical forces that are deployable for all potential scenarios, including large-scale combat operations.[3]

On September 28, 2023, the Assistant Secretary of Defense for Health Affairs tasked the Defense Health Board to review of the Military Health System's prolonged field care training, the objectives of which are listed below:

- Objective 1: Review the curriculum and experience of current military-civilian trauma training partnerships.
- Objective 2: Provide recommendations to best prepare DoD personnel at military-civilian trauma training partner sites for prolonged field care in near-peer conflicts. Comment on the curriculum, locations, frequency of training, the occupational specialties of participating DoD personnel, and best use of selection and performance criteria outlined in the *Blue Book*.[4]
- Objective 3: Provide recommendations to better integrate military-civilian partnerships with attention to military treatment facility staffing and Regional Medical Operations Coordinating Centers.

[1] President. National Security Strategy, 2022. Available at https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf
[2] President, National Defense Strategy, 2022. Available at https://apps.dtic.mil/sti/trecms/pdf/AD1183514.pdf
[3] Military Health System Strategy, 2024-2029. Available at https://health.mil/Reference-Center/Publications/2023/12/15/MHS_Strategic_Plan_FY24_29
[4] American College of Surgeons. The Blue Book: Military-Civilian Partnerships for Trauma Training, Sustainment, and Readiness, 2020

Methods and Organization

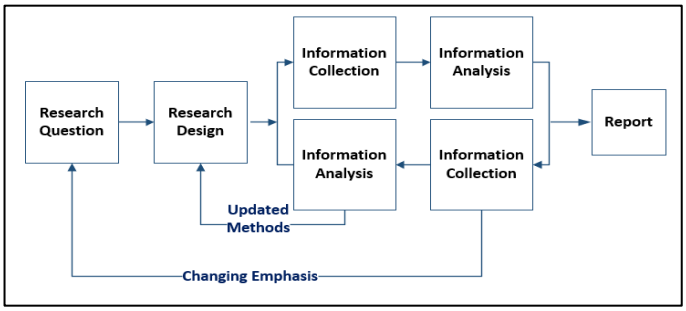

Figure 1. Report Development Process

This report is based on iterative qualitative research (Figure 1) including review of documents (peer-reviewed literature, gray literature, and U.S. military instructions and publications), and transcripts (e.g., testimony delivered to the House and Senate Armed Services Committees), semi-structured interviews with key stakeholders and military leaders using online platforms, in-person meetings, and participation in a national conference.[5] Major contributors to this report include current and former Joint Staff Surgeons; Combatant Command Surgeons; Uniformed Service University of the Health Sciences faculty; National Center for Disaster Medicine and Public Health staff; and Joint Trauma System staff. The findings and recommendations in this report have been developed with attention to independence and objectivity. They are based on the evidence collected and the analysis conducted during report development.

The report is presented in two parts. Part 1 of the report reviews changing military threats, the Joint Trauma System military-civilian trauma training partnership registry, active duty force size, and the importance of tracking training of credentialed and non-credentialed medical personnel across the clinical readiness life cycle. Part 2 of the report will present a review of select military-civilian trauma training partnerships with identification of best practices, Reserve Component force size, and the role of military-civilian trauma training partnerships in the National Disaster Medical System and Regional Medical Operation Coordination Centers.

[5] Association of Military Surgeons of the United States Annual Meeting, February 12-15, 2024

Chapter 1 – Changing Military Threats and Military-Civilian Trauma Training Partnerships

Changing Military Threats

The U.S. Military Services prepare to meet a diverse array of challenges across a wide range of operational scenarios, including security cooperation support, contingency operations, and large-scale combat operations (Figure 2). While most operations occur either below the threshold of armed conflict or during limited contingencies, re-emergence of long-term, great power competition with China and Russia requires a shift in emphasis to training military personnel to manage casualties[6] of war and preparing the U.S. homeland for its role in supporting the U.S. military during times of conflict.[7]

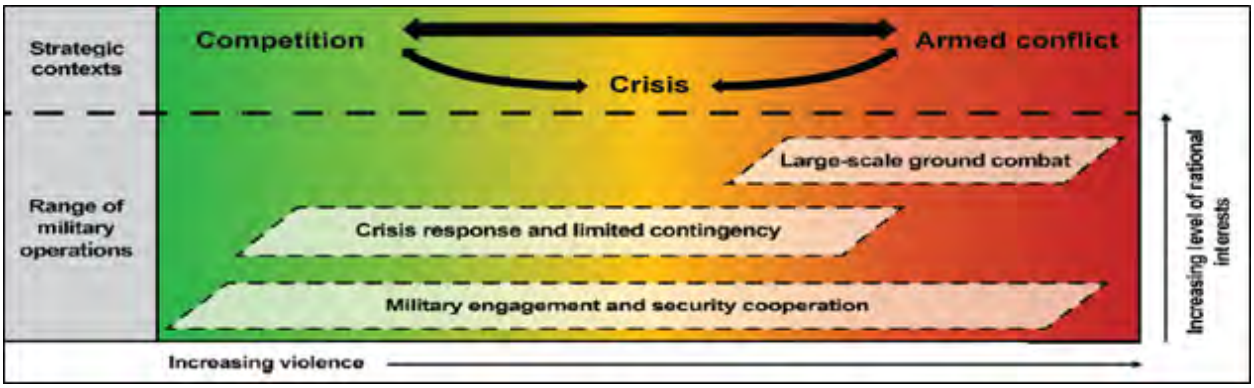

Figure 2. Strategic Contexts and Operational Categories[7]

Large-scale combat operations occur over five operational domains (land, sea, air, space, and cyberspace) and include physical, informational, and human dimensions (Figure 3). Orchestrating military activities across all domains is crucial to success, yet also creates multiple contemporaneous vulnerabilities that include interruptions in communication, cyber-degradation, and exposure to

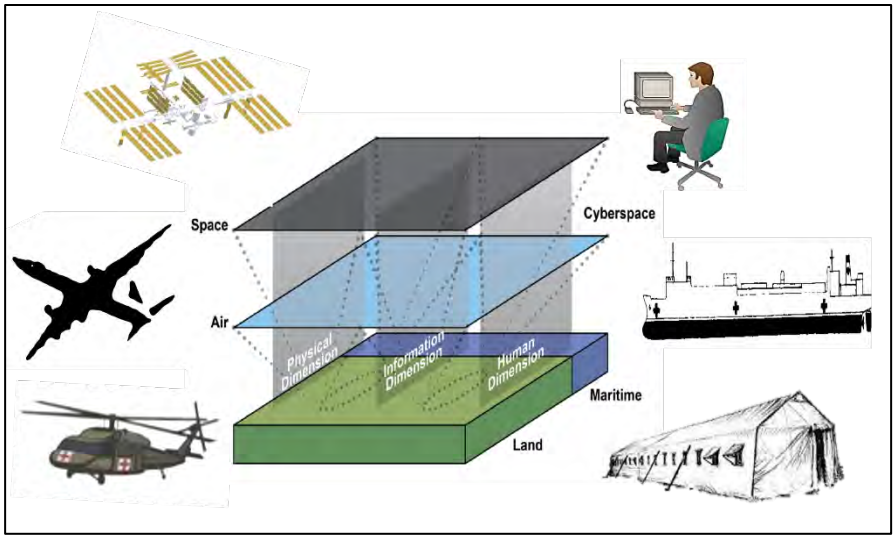

Figure 3. Domains and Dimensions of an Operational Environment[7]

[6] Casualty: "Any person who is lost to the organization by having been declared dead, duty status – whereabouts unknown, excused absence-whereabouts unknown, missing, ill, or injured." (Joint Publication 4-02)

[7] U.S. Dept. of the Army Field Manual. October 2022

biological, chemical, radiological, and nuclear weapons. Large-scale combat operations occur and evolve over vast areas of land and sea. Notably, the U.S. Indo-Pacific Command has an area of responsibility covering more than 50 percent of the earth's surface and over 100 million square miles. Rapid depletion of critical materiel, including Class VIIIa supplies (medical materiel) and Class VIIIb (blood and blood components), and challenges with resupply are anticipated in large-scale combat operations.

Large-scale combat operations are characterized by high rates of casualties – rates not seen since the last large-scale conflict, World War II. During the Global War on Terror, September 2001 to August 2021, there were 60,413 casualties, or 8 casualties per day.[8] By comparison, the initial invasion of Normandy resulted in an estimated 10,000 casualties in a single day.[9] Without air and maritime superiority and the ability to conduct rapid medical evacuation, medical forces are at greater risk of becoming casualties. A recent warfighter exercise estimated that the casualty rate in future conflicts could reach 3,000 per day.[10] During large-scale combat operations, the influx of casualties into the continental U.S. will likely exceed the care capacity of the military health system; this should prompt the attention of U.S. medical systems, which may be needed to augment the capacities and capabilities of the military health system.

U.S. Military Roles of Care

U.S. military doctrine describes medical capabilities across four "roles of care." Figure 4 highlights differences between the Services within each role.[11]

- Role 1 care represents immediate lifesaving measures delivered by emergency personnel in-theater and includes efforts aimed at returning injured Service members to duty or stabilizing patients for evacuation to the next role of care.
- Role 2 care includes trauma management and emergency medical treatment, e.g., volume resuscitation with blood products and intravenous fluids, x-ray and laboratory capabilities, dental support, combat operational stress control, and preventive medicine. Role 2 may include damage-control surgery when augmented with surgical capability.
- Role 3 care represents care delivered at a field hospital or hospital ship staffed and equipped to provide higher level injury and disease and non-battle injury management, to include aggressive resuscitation, damage control and definitive surgery, intensive care, and postoperative follow-up.

[8] Epstein A, Lim R, Johannigman J, et al. Putting Medical Boots on the Ground: Lessons from the War in Ukraine and Applications for Future Conflict with Near-Peer Adversaries. J Am Coll Surg. August 2023

[9] Remondelli MH, Remick KN, MD, Shackelford SA, et al. Casualty Care Implications of Large-Scale Combat Operations. J Trauma Acute Care Surg Volume 95, Number 2, Supplement. May 31, 2023

[10] Epstein A, Lim R, Johannigman J, et al. Putting Medical Boots on the Ground: Lessons from the War in Ukraine and Applications for Future Conflict with Near-Peer Adversaries. J Am Coll Surg. August 2023

[11] Joint Publication 4-02. August 2023

- Role 4 care exists outside the combat zone and includes in-theater U.S. military hospitals and U.S. military facilities in the continental U.S. Role 4 represents the highest level of definitive medical care available within military and U.S. health care systems.

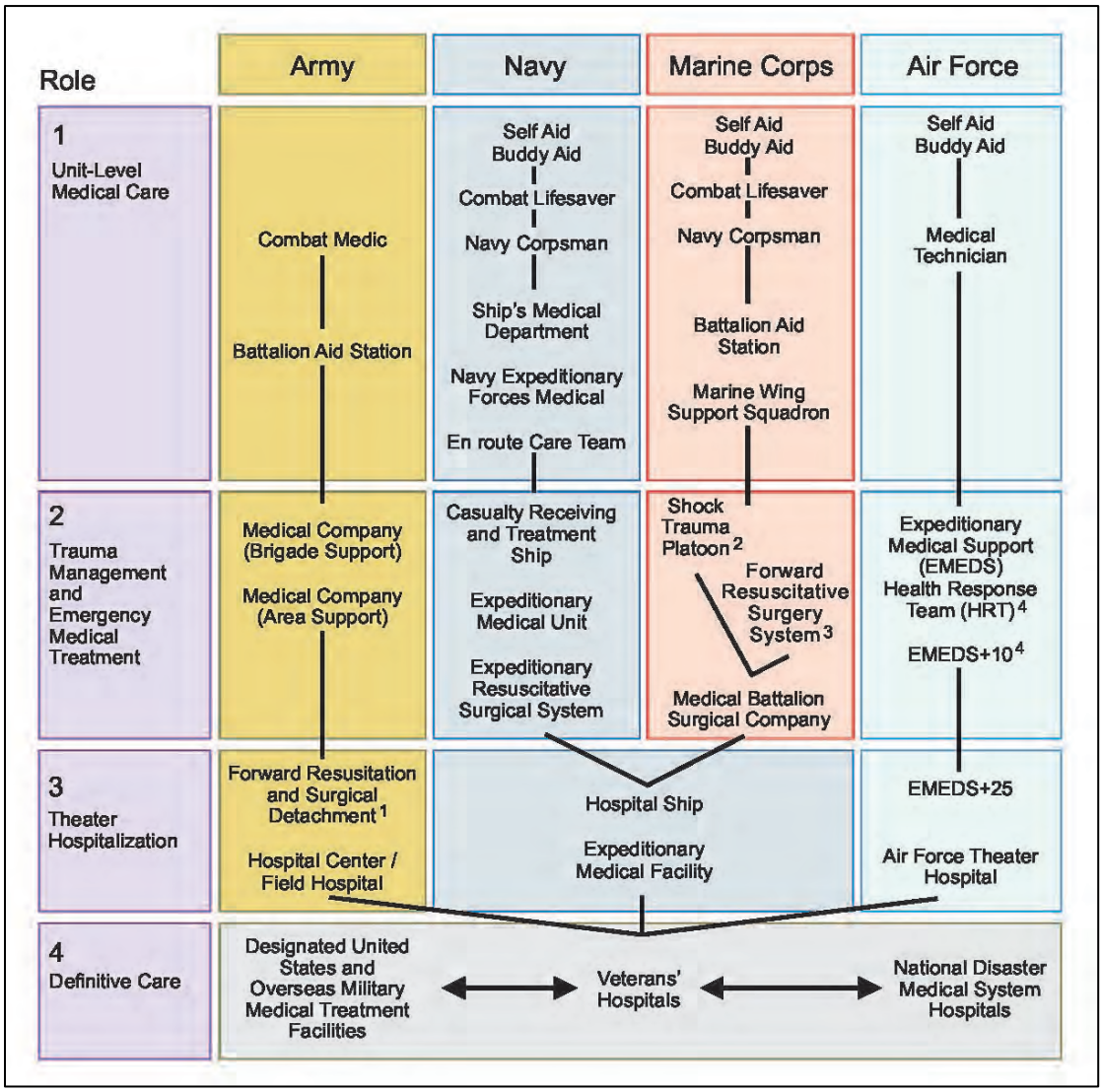

Figure 4. Roles of Care[11]

Prolonged Theater Care

In the absence of air and sea superiority, the projected timeframes for patients within each role of care may increase significantly (Figure 5). In a review of 54 cases of Prolonged Field Care, time in the field ranged from four hours to five days compared to current planning factors which seek to deliver casualties to Role 2 care within one hour.[12] In large-scale combat operations, the time within each role will likely increase:

- Role 1 care may extend from one to three days or more.
- Role 2 care may extend from one day to 5+ days.[13]
- Role 3 care, previously anticipated to occur over a 24-to-72-hour period, could extend for weeks.
- Role 4 care remains variable from days to months.

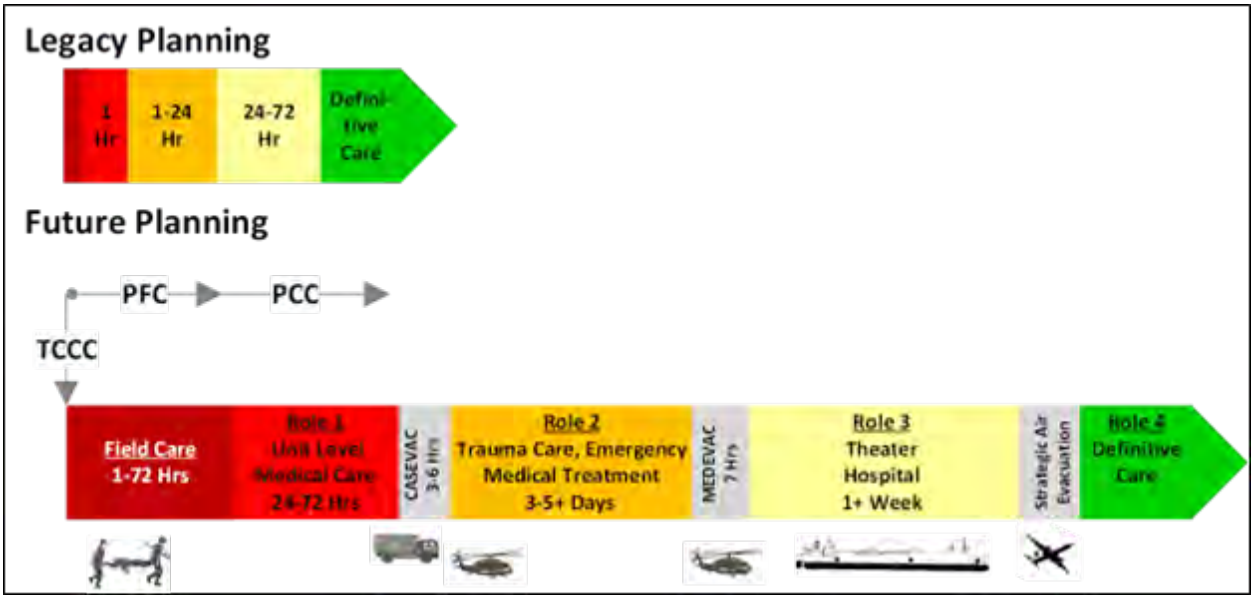

Figure 5. Notional Timelines Comparing the Duration of Current and Future In-Theater Care
(CASEVAC - Casualty Evacuation; MEDEVAC - Medical Evacuation; PCC - Prolonged Casualty Care; PFC - Prolonged Field Care; TCCC - Tactical Combat Casualty Care)

Prolonged theater care refers to care delivered beyond doctrinal timelines.[14] It includes the full spectrum and continuum of medical care provided by credentialed clinical (military officers) and non-credentialed medical personnel from point of injury to definitive care. Broad concepts include Prolonged Field Care, Prolonged Casualty Care, prolonged hospital care in the combat zone, and prolonged definitive care in DoD military treatment facilities outside the U.S. Tactical Combat Casualty Care is the basis for care in the field and Role 1.

[12] DeSoucy E, Shackelford S, Dubose J, et al. Review of 54 Cases of Prolonged Field Care. Journal of Special Operations Medicine. Vol 17, Ed 1, Spring 2017

[13] Staudt A, Gurney J, Valdez-Delgado K, et al: Factors Associated with Trauma Patients' Length of Stay at Role 2 Facilities in Afghanistan, October 2009 to September 2014. J Trauma Acute Care Surg 2018

[14] Joint Publication 4-02, August 2023.

Prolonged Field Care began as a grassroots effort by special operations forces in response to the need to provide medical care to military forces in remote and austere locations without air superiority and access to medical support. While special operations medical personnel are taught the skills necessary to stabilize and care for injured patients for 72-96 hours, they became accustomed to evacuating patients to a higher level of care rapidly during the wars in Iraq and Afghanistan.[15] The U.S. Special Operations Command Prolonged Field Care working group maintains a discussion forum, education, and training to better prepare special operations forces for medical and operational planning, medical evaluation, treatment, and evacuation of critically injured casualties in austere environments. Prolonged Field Care does not have an associated Joint Trauma System Clinical Practice Guideline. Prolonged Field Care includes advanced trauma management, critical care monitoring and support, infection prevention and control, and pain management. In large-scale combat operations with limited freedom of movement, Prolonged Field Care may be required to support conventional forces.

Prolonged Casualty Care refers to medical care provided by medics embedded in conventional forces (rather than special operations forces) for extended periods when evacuation is delayed, or higher levels of care are unavailable.[16] Prolonged Casualty Care follows a Joint Trauma System Clinical Practice Guideline[17] and includes knowledge, skills, and best practices that build upon the DoD standard of care for non-medical and medical first responders as outlined in the Tactical Combat Casualty Care guidelines.[18]

The Services are responsible for recruiting, training, organizing, and equipping interoperable forces for deployment, including medical personnel.[19] While readiness goals and criteria differ between the Services, the basic steps are the same (Figure 6).[20]

The readiness training pipeline begins with Service-specific individual training and self-development activities leading to training verification, certification, and/or licensure. Once qualified for an occupational specialty or when a special qualification is attained, most medical personnel are in a DoD military treatment facility or become a member of an operational unit. Others move to administrative or other non-clinical responsibilities. Depending on career and advancement plans, along with Service needs, individually will periodically rotate between clinical and non-clinical deployments. Medical personnel maintain their skills, formally and informally, through continuing clinical activity at military treatment facilities.

[15] The term, “golden hour,” is attributed to Dr. R, Adams Cowley (1917-1991). It refers to the period immediately after injury when there is the greatest likelihood that medical intervention will prevent death.

[16] Eker J, Hiller H, Hill G, et al. Preparing Emergency Physicians for the Next War: Residency Capstone Training in Prolonged Casualty Care. Med J (Ft Sam Houston Tex). 2022 Apr-Jun

[17] Joint Trauma System Clinical Practice Guideline. Prolonged Casualty Care Guidelines (CPG ID:91). Available at https://jts.health.mil/assets/docs/cpgs/Prolonged_Casualty_Care_Guidelines_21_Dec_2021_ID91.pdf

[18] Deployed Medicine. Tactical Combat Casualty Care Guidelines.

[19] 32 CFR § 368.6 Functions of the Military Departments

[20] Figure 6 is adapted from Congressional Research Service, *The Fundamentals of Military Readiness*. October 2, 2020

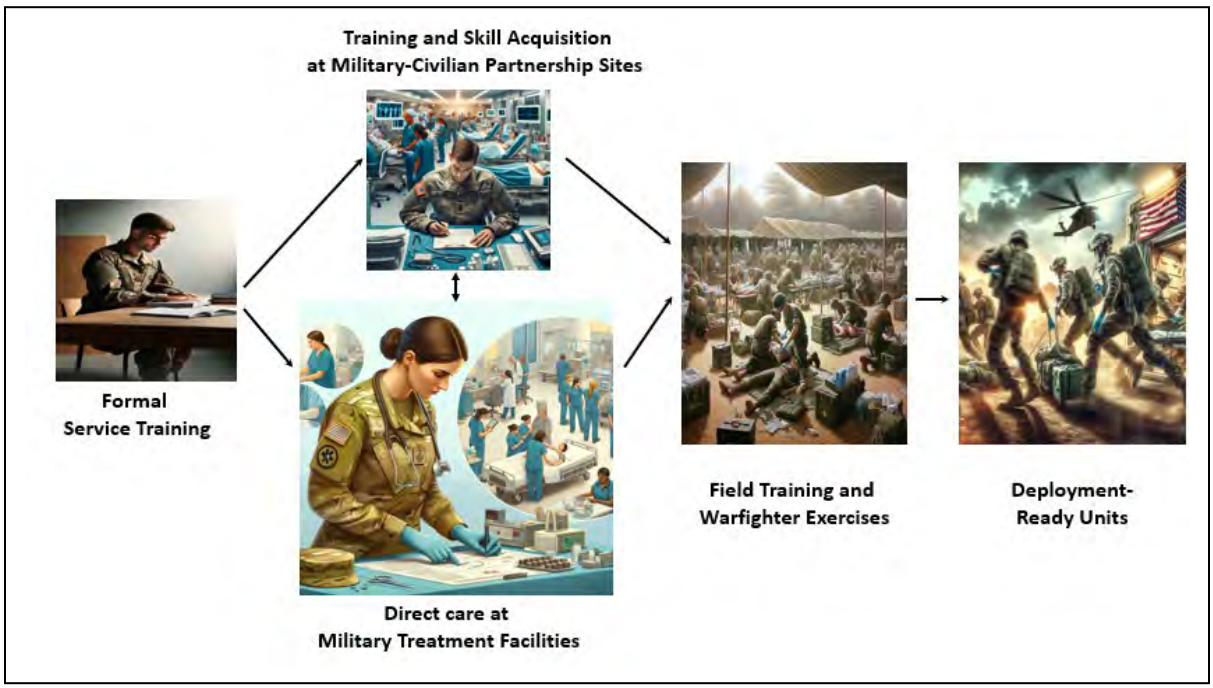

Figure 6. Readiness Pipeline

Until 2017, DoD military treatment facilities were operated by the Services, and training started within a given Service was followed by duties within the same Service. Physicians, nurses, and medics trained by the Army worked at Army medical centers or within Army operational units; Navy medical personnel worked at Navy facilities or on ships; and Air Force medical personnel worked for the Air Force in their medical facilities or operational units. This system created continuity between training, application, and ongoing reinforcement of clinical skills tailored to Service requirements, as well as Service oversight of training across an individual's military career and advancement.

To better integrate, standardize and organize health care programs and benefits across the Services, the *National Defense Authorization Act for Fiscal Year 2017* mandated that the DoD transition Army, Navy, and Air Force military treatment facilities to the newly established Defense Health Agency.[21] This transition was completed in November 2022. Initial training for military medical occupational specialties and maintenance of credentialing requirements remains with the Services. Reinforcement of clinical training through clinical activity now occurs at Defense Health Agency military treatment facilities. Though the Defense Health Agency now operates the military treatment facilities, it does not have primary responsibility for tracking training or maintenance of Service-specific skills.

The Joint Trauma System

Section 707 and 708 of the *National Defense Authorization Act for Fiscal Year 2017* (Public Law 114-328) also directed establishment of the Defense Health Agency Joint Trauma System as the

[21] *National Defense Authorization Act for Fiscal Year 2017*

reference body for all trauma care provided across the military health system. DoD Instruction 6040.47 Joint Trauma System directs the implementation of Sections 707 and 708 of Public Law 114-328. Per DoD Instruction 6040.47, the Director, DHA, in conjunction with the Secretaries of the Military Departments:

- Enters into and coordinates partnerships with civilian trauma centers to provide trauma teams and individual personnel with maximum exposure to a high volume of patients with trauma injuries [and] coordinates with combatant commands when exploring opportunities to develop similar partnerships with military or civilian trauma centers in partner nations.
- Develops and maintains a registry that tracks all military-civilian trauma partnerships the Department enters into and retains a copy of all military-civilian trauma partnership memorandums of agreement or understanding.
- Establishes minimum criteria and goals for entering into military-civilian trauma partnerships and uses data collection and analysis to support metrics assessing partnership performance.
- Coordinates the incorporation of lessons learned from trauma partnerships into clinical practice.

Military-civilian trauma training partnerships are designed to augment and sustain skills necessary for combat casualty and expeditionary care and to mitigate erosion of military medical skills during interwar periods, known as the "peacetime effect" or "Walker dip."[22] They are especially important because most military treatment facilities do not have the patient volume or case-mix necessary to expose trainees and practitioners to medical conditions they are likely to encounter during military operations. A military-civilian trauma training partnership is distinct from training agreements with civilian hospitals for initial clinical skills acquisition, such as residency training rotations or programs.

In response to section 757 of the *National Defense Authorization Act for Fiscal Year 2017*, the Institute for Defense Analysis provided a Congressionally directed review of military-civilian trauma training partnerships and identified three general training models:[23]

- Short-run rotational models are programs in which military personnel rotate through civilian trauma centers on short temporary duty training assignments (generally two to three weeks). These programs work best for enlisted medical personnel who require training or refreshers in limited, defined skills amenable to short-term education and training. Short-run rotational models are often used to train Role 1 medical personnel and surgical teams.
- Full-time embedded sustainment models are programs in which military personnel are stationed at civilian trauma centers full-time for three to four years. These programs train

[22] The "peacetime effect" and "Walker dip" refer to the cycle of improved of medical care and outcomes during conflict, followed by a decline in the skills needed to provide combat casualty care during times of peace, and the need to relearn skills for the next conflict. Defense Health Horizons. Preventing the Walker Dip: A Study in Readiness for Combat Casualty Care. November 2021.

[23] Institute for Defense Analysis. Independent Study of Force Mix Options and Service Models to Enhance Readiness of the Medical Force. June 2023

surgeons and other critical care specialists as individuals or in teams (e.g., Role 2 surgical teams).

- Part-time sustainment models allow clinicians stationed at a military treatment facility to be integrated into the call schedule as a privileged or credentialed provider at a large civilian trauma center. These models vary by facility and clinicians and are best suited for surgical specialties requiring exposure to trauma patients.

Beyond military-civilian trauma training partnerships, the Institute for Defense Analysis identified opportunities for clinical training through the U.S. Department of Veterans Affairs and international partnerships. DoD and U.S. Department of Veterans Affairs partnerships are longstanding and provide practitioners with access to patients who are older and sicker on average than DoD beneficiaries, however exposure to acute trauma patients is limited. Though the primary purpose of international partnerships is to build relationships with allies and partners, these collaborations can broaden the training environments for medical practitioners and provide experience with integrated medical delivery in a combat scenario which involves multiple Services.

The Institute for Defense Analysis also created an inventory of existing military-civilian trauma training partnerships. By the end of the study period, May 2022, they identified 73 existing and 18 pending partnerships spread across 63 unique U.S. civilian trauma centers, four international trauma centers, and six U.S. Department of Veterans Affairs facilities (Table 1 and Table 2).

Domestic MCP	Active	Pending
Level I	49	16
Level II	8	2
Level III	4	0
Pediatric	2	0
International MCPs	4	0
VA Partnerships	6	0
Total	73	18

Table 1. Unique Partnerships by Site (MCP-Military-civilian partnership)

Service	Short-Term Rotational Model (SRM)	Embedded Sustainment Model (ESM)	Part-Time Sustainment Model (PSM)	Grand Total
Air Force	8	2	20	30
Army	4	8	6	18
Navy	3	4	17	24
Special Ops	3	7	5	15
Grand Total	18	21	48	87

Note: Excludes VA partnerships. Includes programs listed as pending.

Table 2. Site Unique Programs by Service and Military-Civilian Training Partnership Model
Note: Some sites have multiple programs

Chapter 2 – The Joint Trauma System Military-Civilian Trauma Training Partnership Registry

Section 708 of the *National Defense Authorization Act for Fiscal Year 2017* outlines specific requirements for the military-civilian trauma training partnership registry. Among other things, Section 708 requires the DoD to accomplish the following:

- Establish the military-civilian trauma training partnership goals necessary for trauma teams, led by traumatologists, to maintain professional competency in trauma care.
- Establish metrics for measuring the performance of partnerships in achieving such goals.
- Develop methods of data collection and analysis to establish metrics.
- Develop a comprehensive trauma care registry to compile relevant data from point of injury through rehabilitation of members of the military.
- Develop quality of care outcome measures for combat casualty care.

Per DoD Instruction 6000.19 *Military Medical Treatment Facility Support of Medical Readiness Skills of Care Providers,* it is the responsibility of the Director, Defense Health Agency, in conjunction with the Services, to maintain the registry of military-civilian trauma training partnerships and track workload at partner sites.

The Joint Trauma System used methods and baseline data from the Institute for Defense Analysis original inventory of military-civilian trauma training partnerships and solicited input from the Services to create an updated list of military-civilian trauma training partnerships. The Joint Trauma System also developed a web-based registry to allow ongoing updates to the list of partnerships by Service representatives. The registry currently includes a total of 44 inactive military-civilian trauma training partnerships and 162 active partnerships. Active military-civilian trauma training partnerships are listed by Service in Table 3.

	Model Type Unknown	Embedded Sustainment	Full-Time Embedded*	Multiple Types	Part-time Embedded	Part-Time Sustainment*	Rotator	Short-Run Rotational*	Grand Total
Air Force	8		1	10	35	17	5	1	**77**
Army			4	5				3	**12**
Navy	56		1	1					**58**
Special Operations	9	2			1	3			**15**
Total MCPs	**73**	**2**	**6**	**16**	**36**	**20**	**5**	**4**	**162**

Table 3. Summary of Active Military-Civilian Trauma Training Partnerships Listed in the Joint Trauma System Military-Civilian Trauma Training Partnership Registry

The DHB reviewed the full registry of military-civilian trauma training partnerships maintained by the Joint Trauma System, including Table 3, against the requirements of DoD Instruction 6040.47 *Joint Trauma System* and the data reported by the Institute for Defense Analysis. This review identified the following fundamental gaps and limitations:

- The registry has not been updated since 2022.

- The military-civilian trauma training partnership model types listed in the registry do not match the model types described by Institute for Defense Analysis, and the registry data
  dictionary does not sufficiently describe the new model types to allow full understanding of the type of training taking place at each of the military-civilian trauma training partnerships. This is further complicated by the absence of a program description in 150 of 206 total active and inactive programs listed.
- The information in the registry, collected from multiple sources, is not standardized.
- Important information is not consistently documented, including:
  - Personnel type trained, e.g., nurse, corpsman, physician.
  - Program duration.
  - Number of personnel trained.
  - Knowledge, skills, and abilities addressed by the program.

Reports from the House and Senate Armed Services Committees have raised concerns about the Department's visibility of the number, scope, type, and utilization of military-civilian trauma training partnerships, as well as the ability of the Department to determine the extent to which these partnerships are achieving desired results of sustaining military medical readiness.[24,25] In addition to not having visibility over training at military-civilian trauma training partner sites the DoD lacks visibility of military medical readiness sustainment across the DHA's military medical facilities. This observation was documented in a February 2024 RAND report were unable to identify a single organization with visibility over the types of readiness training activities used across military treatment facilities, and major commands noting, "…it appears that sharing information on effective readiness initiatives occurs primarily on an ad hoc basis."[26]

The Defense Health Agency Fiscal Year 2022-2026 Campaign Plan included a line of effort titled *Sustain Expeditionary Medical Skills.* This line of effort included administrative support for the Joint Trauma System military-civilian trauma training partnership registry. The Defense Health Agency 2022-2026 Campaign Plan was replaced by the Defense Health Agency Strategic Plan for Fiscal Year 2023-2028. The *Sustain Expeditionary Medical Skills* line of effort was not continued. Much of the support for the registry was discontinued, and the Military-Civilian Training Partnership Working Group responsible for input into the registry was disbanded.[27] For the Joint Trauma System registry to meet *National Defense Authorization Act for Fiscal Year 2017* section 708 requirements, the registry needs the personnel and resources necessary to further develop and maintain the registry.

Finding 1. A registry of military-civilian and Department of Veterans Affairs partnerships has not been fully established or sustained; thus, the existing Joint Trauma System Military-Civilian Training Partnership Registry contains insufficient information to evaluate program

[24] NDAA for FY 2024 HASC Report 118-125

[25] NDAA for FY2024 SASC Report, 118-58

[26] RAND. Improving Trauma and Critical Care Proficiency and Readiness for Air Force Personnel in Critical Medical Specialties - A Pacific Air Forces Perspective. February 21, 2024. Available at https://www.rand.org/pubs/research_reports/RRA993-1.html

[27] Joint Trauma System. Personal communication. January 23, 2023

performance or readiness skills of military medical personnel training at military-civilian trauma training partnership sites.

Recommendation 1. Assistant Secretary of Defense for Health Affairs should review and report findings to the Secretary of Defense annually from the Joint Trauma System Military-Civilian Training Partnership Registry, consistent with requirements outlined in section 708 of the *National Defense Authorizattion Act for Fiscal Year 2017*.

Chapter 3 - Recommendations for Military-Civilian Trauma Training Partnerships

Force Size and Structure

Fundamental to ensuring a ready medical force is guaranteeing sufficient personnel trained in necessary skills and specialties to meet anticipated demand. The Government Accountability Office has noted that the Military Health System faces military and civilian end strength shortfalls.[28] This concern was echoed during the 2024 annual meeting of Association of Military Surgeons of the United States / Society of Federal Health Professionals,[29] and during interviews with Joint Trauma System personnel. Joint Trauma System staff indicated that military medical capabilities would be rapidly depleted during large-scale conflict and that the number of military medical personnel available would quickly become insufficient to meet projected demands. The Joint Trauma System considered this to be an "existential threat" to mission accomplishment.[23]

The DoD Office of Inspector General Management Advisory: *Concerns with Access to Care and Staffing Shortages in the Military Health System* (November 29, 2023)[30] noted that it is increasingly difficult to recruit and retain medical personnel and that medical personnel are often assigned to non-medical positions, resulting in waning operationally relevant medical skills.[24]

Paradoxically, in 2021, DoD described a plan to reduce its active duty medical force by nearly 13,000 positions in order to shift these positions to operational billets.[31] The DoD provided an analysis on the impact of medical force reductions; this was subsequently evaluated by the Government Accountability Office.[32] In its analysis, the Government Accountability Office found that the DoD had not fully assessed the impact of medical force reductions. As a result, plans to reduce the size of the medical force were put on hold. The President's budget for Fiscal Year 2024 affirms suspension of the planned reductions, and further, emphasizes "plans to assess current military medical end strength to match operational requirements and enable the military health system to increase the medical readiness of the force, as well as the readiness of our medical force."[33]

Table 4 provides authorizations versus end strength (actual personnel) for medical corps, nurse corps, and enlisted medical personnel from 2018 through 2023 and demonstrated shortfalls in

[28] Government Accountability Office. Defense Health Care - DOD Should Reevaluate Market Structure for Military Medical Treatment Facility Management. August 2023. Available at https://www.gao.gov/assets/d23105441.pdf

[29] Association of Military Surgeons of the United States. Personal Communication, February 14, 2024.

[30] Department of Defense Office of Inspector General. Management Advisory: Concerns with Access to Care and Staffing Shortages in the Military Health System. November 29, 2023

[31] DoD. Report to the Congressional Armed Services Committees: Section 719 of the National Defense Authorization Act for Fiscal Year 2020, July 2021. See also Congressional Research Service. Defense Primer: Military Health System. November 18, 2022.

[32] Government Accountability Office. Defense Health Care: Additional Assessments Needed to Determine Effects of Active Duty Medical Personnel Reductions. July 2023

[33] Defense Health Program Fiscal Year 2024 President's Budget. March 2023

each of these categories.[34,35] In addition, Combatant Command surgeons have expressed concern about the reliability of models used to estimate casualty flow rates which, ultimately, inform end strength requirements for medical personnel.[36] In the report to the House and Senate Armed Services Committees, the DoD indicated that there are efforts underway to improve the models used to estimate casualty flows from theater and inform optimization of medical force size and structure.[29]

	2018	2019	2020	2021	2022	2023
Active Duty Medical Corps Authorizations	12,458	12,619	12,543	12,580	12,821	12,724
Active Duty Medical Corps End Strength	11,711	11,752	11,722	11,629	11,527	12,226
Difference between authorizations and end strength	-747	-867	-821	-951	-1,294	-498
Active Duty Nurse Authorizations	9,664	9,661	9,620	9,706	9,810	9,937
Active Duty Nurse End Strength	9,313	9,165	9,207	9,088	8,871	8,584
Difference between authorizations and end strength	-351	-496	-413	-618	-939	-1,353
Active Duty Enlisted Authorizations	78,383	78,622	78,609	78,781	80,236	78,046
Active Duty Enlisted End Strength	78,935	79,958	78,401	74,627	72,121	70,632
Difference between authorizations and end strength	552	1,336	-208	-4,154	-8,115	-7,414

Table 4. Authorization versus End Strength (Actual Personnel) for Active Duty Medical Corps, Nurse Corps, and Enlisted Medical Personnel, 2018-2023

Finding 2. Current active duty military medical forces may be insufficient to meet the future requirements of large-scale combat operations, and current models used to estimate personnel requirements against casualty estimates may be unreliable.

Recommendation 2. DoD should urgently update casualty flow models to determine the optimum size and structure of the active duty medical forces and rapidly recruit military personnel to meet these requirements.

Meeting the Need for Enlisted Medical Personnel

The importance of training enlisted personnel, who are largely responsible for providing prehospital care during military conflict, cannot be overstated. During conflicts in Afghanistan and Iraq, for example, 87% of deaths occurred in the prehospital setting; 23% of these deaths were considered potentially survivable.[37]

A June 2021 Government Accountability Office review of DoD's efforts to maintain enlisted personnel's wartime medical skills concluded that the Services lack reasonable assurance that ~~enlisted medical personnel are~~ ready to perform their duties during military operations and

[34] Health Manpower Personnel Data System Fiscal Year Statistics. Defense Health Agency 2018-2020; Assistant Secretary of Defense for Health Affairs 2021-2023

[35] The role of the Reserve Component will be addressed in Prolonged Theater Care Part 2.

[36] Personal communication, February 14, 2024

[37] Eastridge BJ, Mabry RL, Seguin P, et al: Death on the battlefield (2001-2011): implications for the future of combat casualty care. J Trauma Acute Care Surg 2012; 73(6Suppl 5): S431-7

made 30 recommendations to Sustain Wartime Medical Skills for Enlisted Personnel.[38] The Government Accountability Office based its conclusion and recommendations[39] on the following findings:

- The Services do not comprehensively track and assess enlisted personnel wartime medical skills training.
- The Services are not able to fully assess the readiness of enlisted medical personnel.
- The DoD does not have processes in place to sustain the wartime medical skills of enlisted medical personnel.

The Government Accountability Office identified military-civilian trauma training partnerships as an important adjunct to training enlisted medical personnel, who comprise 66% of the total medical force.[40] The Government Accountability Office also heard from Defense Health Agency officials that the Joint Trauma System military-civilian trauma training partnership registry was not meant to fully represent enlisted medical personnel or their experience in civilian partnerships, which limits the ability of the Department to track readiness of the medical force.

Finding 3. Neither the Services nor the Joint Trauma System military-civilian training partnership registry adequately define, track, or assess wartime medical skills training for enlisted personnel at military-civilian trauma training partnerships.

Recommendation 3. Under Secretary of Defense for Personnel and Readiness, in conjunction with the Services, should oversee the standardization of the essential wartime medical skills of enlisted personnel and apply the requirements of section 708 of the *National Defense Authorization Act for Fiscal Year 2017* beyond combat casualty care teams to the wartime training of enlisted medical personnel.

Army combat medics, Navy corpsmen, and Air Force medical service specialists train at the Medical Education and Training Campus, the DoD's Tri-Service training site for enlisted medical personnel. While these training programs cover the same basic skills, members of the Army, Navy, and Air Force train separately in Service-specific programs. Army combat medics, for example receive 16 weeks of training, Navy corpsmen receive 19 weeks, and Air Force medical service specialists receive 14 weeks. The Services also vary in follow-on clinical training requirements and certifications for clinical care.

Large-scale combat operations increase the flow of forces through multi-domain operations across land, air, and sea. As forces are depleted, the value proposition of standardized training may take precedence over Service-specific training, and just-in-time training may become increasingly important. Despite the potential benefit of standardized training for Role 1

[38] Government Accountability Office. Actions Needed to Define and Sustain Wartime Medical Skills for Enlisted Personnel. June 2021

[39] The status of Departmental responses to this report are available at https://www.gao.gov/products/gao-21-337.

[40] DoD. Report the Committees on Armed Services of the Senate and the House of Representatives
Reports on Composition of Medical Personnel of Each Military Department and Related Matters December 2023

personnel and the anticipated need for just-in-time training, these approaches to training have not been explored.

Finding 4. Despite the potential demand for standardized, just-in-time training for Army combat medics, Navy corpsmen, and Air Force medical service specialists during large-scale combat operations, there are no plans in place to develop standardized, just-in-time training for enlisted personnel.

Recommendation 4. Under Secretary of Defense for Personnel and Readiness, in conjunction with the Services, should develop standardized just-in-time programs of instruction for scaling the training of Army combat medics, Navy corpsmen, and Air Force medical service specialists to meet force flow and large-scale combat operations demands as reflected in military operational plans.

Chapter 4 – Integration of Clinical Activity Tracking for Military Medical Personnel at and Beyond Military Treatment Facilities

Clinical excellence by medical practitioners is a prerequisite for expeditionary readiness and requires ongoing robust patient care activity. Patient care volume is variable across military treatments facilities; lower volumes can affect readiness. Recognition of this led to a memo, signed by the Deputy Secretary of Defense on December 6, 2023, directing efforts to increase military health system capacity to attract patients and improve access to direct care in military treatment facilities.[41]

Knowledge and skills sustained by military medical personnel at DoD military treatment facilities, both during initial training and through ongoing clinical activity, comprise the foundation upon which additional training at military-civilian trauma training partnership should be based. The clinical readiness life cycle outlined by the *Blue Book: Military-Civilian Partnerships for Trauma Training, Sustainment, and Readiness* highlights the synergism between training at military treatment facilities and military-civilian trauma training sites (Figure 7).[42] While the *Blue Book* does not represent military doctrine and applies to credentialed clinicians rather than the full spectrum of medical practitioners responsible for combat casualties, it does provide an overarching framework that encompasses training across the Services, Defense Health Agency, and military-civilian trauma training partnerships. Further, it may be expanded to include international and other training.

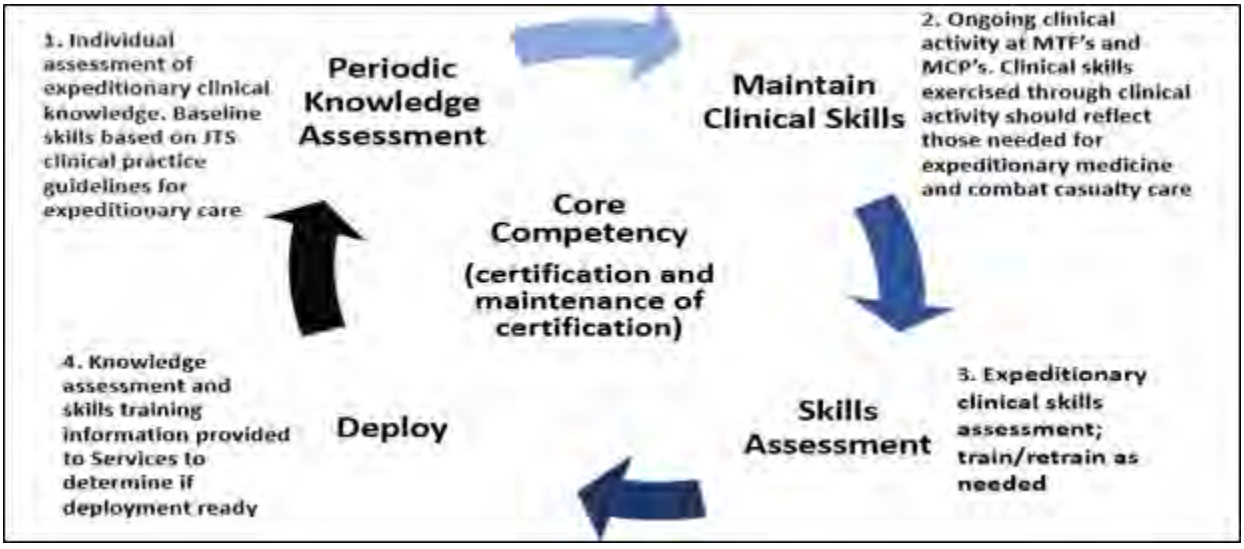

Figure 7. Clinical Readiness Life Cycle
(JTS-Joint Trauma System; MCP-military-civilian training partnership; MTFs-military treatment facilities

[41] Health.mil. Military Health System Stabilization: Rebuilding Health Care Access is "Critical to the Wellbeing of our Patients." January 19, 2024.

[42] Figure 7 is adapted from the Blue Book: Military-Civilian Partnerships for Trauma Training, Sustainment, and Readiness.

As noted in Finding 1, the Board found that the registry of military-civilian and Department of Veterans Affairs trauma training partnerships is insufficient to evaluate readiness skills of individual military medical personnel training at military-civilian trauma training partnership sites. The Board also found that the Defense Health Agency does not coordinate with the Services to systematically track the clinical activity of military medical personnel at DoD military treatment facilities. As a result, it is unclear how clinical activity at military treatment facilities contributes to essential wartime skill readiness and what skill gaps exist to inform expected outcomes in military-civilian partnership agreements.

Finding 5. The Defense Health Agency does not define readiness gaps that should be filled by military-civilian trauma training partnerships through tracking of the clinical activity (relative to combat casualty and expeditionary medical care) of medical personnel at military treatment facilities.

Recommendation 5. The Director, Defense Health Agency, should develop a system to track skills related to combat casualty and expeditionary medical care acquired by credentialed and non-credentialed military medical personnel at military treatment facilities and use this information to support Service goals to guide entry into and sustainment of military-civilian trauma training partnerships.

Because the DoD does not track clinical activity across the readiness life cycle, the DoD lacks the ability to aggregate data to demonstrate the overall readiness military medical personnel. This is especially important given that the Institute for Defense Analysis found that the Defense Readiness Reporting System, the primary mechanism used to determine the readiness for military operations, does not provide meaningful assessments of the readiness of medical personnel.[43]

Finding 6. The Defense Health Agency and Services do not have a system for tracking the knowledge, skills, or ongoing clinical activity across the clinical readiness life cycle and are unable to aggregate data to provide a composite picture of individual and military medical readiness.

Recommendation 6. Under Secretary of Defense for Personnel and Readiness should direct development of a system to track knowledge, skills, and ongoing clinical activity related to combat casualty and expeditionary medical care acquired by credentialed and non-credentialed personnel on an individual basis to inform the overall military medical readiness.

[43] Institute for Defense Analysis. Essential Medical Capabilities and Medical Readiness. 2016

Chapter 5 – Summary and Next Steps

The 2022 *National Security Strategy* and 2022 *National Defense Strategy* emphasize the need to strengthen the DoD's ability to address strategic competition with major powers. This includes being prepared to provide prolonged medical care in theater and updating the training for medical personnel to meet the demands of prolonged theater care.

Military-civilian trauma training partnerships have the potential to enhance the clinical experience of military medical professionals by offering a higher volume of high-acuity patients than offered in typical military treatment facilities. The *National Defense Authorization Act* FY 2017 directs the establishment of military-civilian partnerships and a registry to track activity at military-civilian trauma training partnerships.

Finding 1. A registry of military-civilian and Department of Veterans Affairs partnerships has not been fully established or sustained; thus, the existing Joint Trauma System Military-Civilian Training Partnership Registry contains insufficient information to evaluate program performance or readiness skills of military medical personnel training at military-civilian trauma training partnership sites.

Recommendation 1. Assistant Secretary of Defense for Health Affairs should review and report findings to the Secretary of Defense annually from the Joint Trauma System Military-Civilian Training Partnership Registry, consistent with requirements outlined in section 708 of the *National Defense Authorization Act for Fiscal Year 2017*.

Fundamental to the success of prolonged theater care is a medical force of sufficient size to meet the demands of large-scale combat operations.

Finding 2. Current active duty military medical forces may be insufficient to meet the future requirements of large-scale combat operations, and current models used to estimate personnel requirements against casualty estimates may be unreliable.

Recommendation 2. DoD should urgently update casualty flow models to determine the optimum size and structure of the active duty medical forces and rapidly recruit military personnel to meet these requirements.

While the *National Defense Authorization Act for Fiscal Year 2017* and military-civilian trauma training partnerships have primarily focused on credentialed combat casualty care team members, non-credentialed enlisted medical personnel will likely play a critical role in prolonged theater care.

Finding 3. Neither the Services nor the Joint Trauma System military-civilian training partnership registry adequately define, track, or assess wartime medical skills training for enlisted personnel at military-civilian trauma training partnerships.

Recommendation 3. Under Secretary of Defense for Personnel and Readiness, in conjunction with the Services, should oversee the standardization of the essential wartime medical skills of enlisted personnel and apply the requirements of section 708 of the *National Defense Authorization Act for Fiscal Year 2017* beyond combat casualty care teams to the wartime training of enlisted medical personnel.

Standardized, just-in-time training for enlisted medical personnel will be increasingly important during multi-domain large-scale combat operations.

Finding 4. Despite the potential demand for standardized, just-in-time training for Army combat medics, Navy corpsmen, and Air Force medical service specialists during large-scale combat operations, there are no plans in place to develop standardized, just-in-time training for enlisted personnel.

Recommendation 4. Under Secretary of Defense for Personnel and Readiness, in conjunction with the Services, should develop standardized just-in-time programs of instruction for scaling the training of Army combat medics, Navy corpsmen, and Air Force medical service specialists to meet force flow and large-scale combat operations demands as reflected in military operational plans.

The clinical readiness life cycle emphasizes the interrelationship and necessity of tracking training of military medical personnel over time and across facilities (military treatment facilities, military-civilian trauma training partnerships, and other platforms) to have an accurate assessment of the readiness of military medical forces.

Finding 5. The Defense Health Agency does not define readiness gaps that should be filled by military-civilian trauma training partnerships through tracking of the clinical activity (relative to combat casualty and expeditionary medical care) of medical personnel at military treatment facilities.

Recommendation 5. The Director, Defense Health Agency, should develop a system to track skills related to combat casualty and expeditionary medical care acquired by credentialed and non-credentialed military medical personnel at military treatment facilities and use this information to support Service goals to guide entry into and sustainment of military-civilian trauma training partnerships.

Finding 6. The Defense Health Agency and Services do not have a system for tracking the knowledge, skills, or ongoing clinical activity across the clinical readiness life cycle and are unable to aggregate data to provide a composite picture of individual and military medical readiness.

Recommendation 6. Under Secretary of Defense for Personnel and Readiness should direct development of a system to track knowledge, skills, and ongoing clinical activity related to

combat casualty and expeditionary medical care acquired by credentialed and non-credentialed personnel on an individual basis to inform the overall military medical readiness.

Next Steps

Part 1 of the report on prolonged theater care highlights recommendations that warrant urgent attention. Part 2 of the report will review the curriculum and trainee experience at select military-civilian trauma training partnerships in greater detail. It will compare current training with training that is required for management of battle and non-battle injuries likely to be encountered during large-scale combat operations. It will also compare current military-civilian trauma training partnerships to identify best practices and provide recommendations for improving training at training sites. Further, Part 2 will address the importance of integration of training across the Services, Defense Health Agency, and the National Disaster Medical System, as well as opportunities with Regional Medical Operations Coordinating Centers.

Appendix A: Glossary

Casualty: Any person who is lost to the organization by having been declared dead, duty status – whereabouts unknown, missing, ill, or injured.

Clinical Practice Guidelines – Systematically developed statements to assist health care practitioners in making decisions about appropriate health care for specific clinical circumstances.

Combat Casualty Care Team: Section 725 of the *National Defense Authorization Act for Fiscal Year 2017* Working Group identified 16 specialties of the Combat Casualty Care Team including Trauma Surgery, General Surgery, Plastic Surgery, Orthopedic Surgery, Urology, Ear Nose Throat, Neurosurgery, Vascular Surgery, Cardiothoracic Surgery, Oral Maxillofacial Surgery, Emergency Medicine, Critical Care Medicine, Anesthesiology, Emergency/Trauma Nursing, and Critical Care Nursing.

Force Flow: Refers to the movement of military forces and their associated resources.

Golden Hour: the period immediately after injury when there is the greatest likelihood that medical intervention will prevent death.

Large-Scale Combat Operations: 1. Chaotic, intense, and highly destructive combat operations, characterized by complexity, chaos, fear, violence, fatigue, and uncertainty; 2. Combat operations with a series of tactical actions coordinated in time and place to achieve strategic or operational objectives in an area of operations over land, sea, air, cyberspace, and space.

Military-Civilian Trauma Training Partnership: A structured collaborative relationship between military and civilian organizations that provides training to enhance the trauma clinical readiness of military medical personnel and exchange best trauma clinical practices.

Military Treatment Facility: A health care facility operated by the Department of Defense through the Defense Health Agency to provide medical and dental care to eligible military personnel, retirees, and their dependents.

Prolonged Casualty Care: Clinical practice guidelines for conventional forces responsible for direct casualty management over a prolonged period of time in austere, remote, or expeditionary settings, and/or during long-distance movements.

Prolonged Field Care: Guidelines for special operations forces responsible for casualty management over a prolonged period in austere, remote, or expeditionary environments.

Prolonged Theater Care: Medical care delivered beyond doctrinal timelines that includes the full spectrum and continuum of medical care provided by credentialed and non-credentialed

medical personnel from point of injury to definitive care, including Prolonged Field Care, Prolonged Casualty Care, prolonged hospital care in the combat zone, and prolonged definitive care in DoD military treatment facilities outside the continental U.S.

Tactical Combat Casualty Care: A set of trauma management guidelines customized for use in the operational setting to maintains a focus on interventions to prevent the most common causes of combat deaths.

Walker Dip: the cycle of improved of medical care and outcomes during conflict, followed by a decline in the skills needed to provide combat casualty care during times of peace, and the need to relearn skills for the next conflict. Also referred to as the “peacetime effect”.

Appendix B: Terms of Reference

THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON
WASHINGTON, DC 20301-1200

HEALTH AFFAIRS

September 28, 2023

MEMORANDUM FOR PRESIDENT, DEFENSE HEALTH BOARD

SUBJECT: Defense Health Board Review -- Prolonged Field Care

Pursuant to the attached Terms of Reference (TOR) on "Prolonged Field Care," I direct that the Defense Health Board (DHB), working through its Trauma and Injury Subcommittee, provide recommendations to best prepare Department of Defense (DoD) personnel at military-civilian trauma training partner sites for prolonged field care in near-peer conflicts. The DHB should recommend guidance on better integrating military-civilian partnerships with attention to Direct Care Military Treatment Facilities staffing and Regional Medical Operations Centers, commenting on curriculum, locations, frequency of training, and the occupational specialties of participating DoD personnel.

The TOR for this review provides a detailed description and scope of the tasking. The point of contact for this action is the Defense Health Board Designated Federal Officer/Executive Director CAPT Shawn Clausen. She may be reached at (703) 275-6060 or shawn.s.clausen.mil@health.mil. Thank you for your support and commitment to optimizing the health and force-readiness of the military.

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Date: 2023.09.28 08:52:43 -04'00'

Lester Martinez-López, M.D., M.P.H.

Attachment:
As stated

cc:
Group Federal Officer
Advisory Committee Management Officer
Defense Health Board Designated Federal Officer

Defense Health Board
Prolonged Field Care
TERMS OF REFERENCE

These Terms of Reference (ToR) establish the objectives for the Defense Health Board (DHB) to review, through its Trauma and Injury Subcommittee ("the Subcommittee"), the DoD's trauma care strategy for prolonged field care.

Mission Statement: The mission of the DHB is to provide independent advice and recommendations to maximize the safety and quality of, as well as access to, health care for Department of Defense (DoD) health care beneficiaries.

Issue Statement: The U.S. military trauma care system is designed to enhance survivability among injured Service members. Lessons learned in Operation Iraqi Freedom and Operation Enduring Freedom (OIF/OEF) informed adaptations to the trauma care delivery system and resulted in higher survival rates. However, trauma care delivery during the OIF/OEF conflicts depended on uncontested air superiority. Evacuation by sea, although rarely used in recent conflicts, remained available due to uncontested sea superiority. Medical units were able to transport casualties, which occurred in lower numbers than in U.S. conflicts of the 20th century, to higher echelons of care in a short period of time – a major contribution to the high survival rate.[1,2] One analysis of all U.S. military casualties from 2001-2017 attributed rapid prehospital transport (less than 60 minutes), along with wider use of tourniquets, and availability of blood product transfusions to a 44% reduction in mortality among critically injured casualties compared to those who did not receive any of these three key interventions.[3]

Future conflicts are likely to occur with 'near-peers' capable of contesting the U.S. in the air and at sea -- delaying evacuation of casualties. A near-peer conflict also brings risk of increased numbers of casualties.[1,2] These elements require strategies for personnel, training, logistics, and casualty evaluation, treatment, and evacuation different from those used in recent conflicts.

Wartime expertise in trauma management is difficult to maintain during peacetime.[4] Military trauma centers, which includes only one Level I center, do not care for sufficient volumes of trauma patients for military medical personnel to maintain readiness.[7] DoD has established partnerships with leading U.S. civilian trauma centers to offer trauma management opportunities and training for military teams. Although guided by the American College of Surgeons' (ACS) "Blue Book," these partnerships still do not provide enough opportunities to develop and maintain critical wartime skills.[5,6] The trauma management experience these civilian-military partners provide may not match current wartime practice (e.g. less focus on open surgical procedures) and may not have a curriculum oriented towards a near-peer conflict and the need for prolonged field care by both surgical and medical teams.

The DoD has begun retooling training for uniformed personnel at the undergraduate, graduate, and continuing medical education level to prepare for prolonged field care. These build upon the Knowledge, Skills, and Abilities (KSA) program, participation in the American College of Surgeons (ACS) Trauma Improvement process, and changes to TRICARE network agreements to encourage retention by the direct-care system of beneficiaries in need of surgical procedures.

The training provided by military-civilian partnerships also requires re-tooling to best prepare military teams to provide casualty care for a prolonged time in the field.

Objectives and Scope:

- Review the curriculum and experience of current military-civilian trauma training partnerships.
- Provide recommendations to best prepare DoD personnel at military-civilian trauma training partner sites for prolonged field care in near-peer conflicts. Comment on the curriculum, locations, frequency of training, the occupational specialties of participating DoD personnel, and best use of selection and performance criteria outline in the Blue Book.
- Provide recommendations to better integrate military-civilian partnerships with attention to Direct Care MTF staffing and Regional Medical Operations Centers.

Methodology:

1. The Trauma and Injury Subcommittee may conduct interviews and site visits as appropriate.
2. The Trauma and Injury Subcommittee may seek input from other sources with pertinent knowledge or experience.
3. In accordance with the November 26, 2018, Deputy Secretary of Defense memo, "Advisory Committee Management," the Trauma and Injury Subcommittee shall receive full and timely cooperation of each office of the Secretary of Defense or DoD Component Head in providing analyses, briefings and other DoD information or data necessary for the fulfillment of its responsibilities as provided for by this TOR. All requests shall be consistent with applicable laws; applicable security classifications; DoD Instruction 5105.04, "Department of Defense Federal Advisory Committee Management Program"; and this ToR.
4. Material provided to the DHB becomes a permanent part of the DHB's record. Components are reminded that all data/information provided is subject to public inspection unless the originating Component office properly marks the data/information with the appropriate classification and Freedom of Information Act exemption categories before the data/information is released to the DHB. The DHB has physical and electronic storage and communications capability on unclassified networks to support receipt of material up to the Controlled Unclassified Information level. Each Component should remember that DHB members, as special government employee members of a DoD Federal advisory committee, will not be given any access to the DoD network, to include DoD email systems.

Compliance:

The DHB and the Subcommittee will operate in conformity with and pursuant to the DHB's charter, chapter 10 of title 5, U.S. Code (commonly known as the "Federal Advisory Committee Act"), section 552b(c) of title 5, U.S. Code (commonly known as the "Government in the Sunshine Act"), and other applicable Federal statutes, regulations, and policy. Individual DHB and Subcommittee members, as well as the Subcommittee, do not have the authority to make decisions or recommendations on behalf of the DHB nor report directly to any Federal representative. The members of the DHB and Subcommittee are subject to certain Federal ethics

laws, including section 208 of title 18, U.S. Code, governing conflicts of interest, and the Standards of Ethical Conduct regulations in 5 Code of Federal Regulations, part 2635.

Deliverables:

The Subcommittee will complete its work within one year of being tasked and report to the DHB in a public forum for its full and thorough consideration and deliberation at a properly noticed and open meeting, unless the meeting must be closed pursuant to one or more exemptions found in section 552b(c) of title 5, U.S. Code. The DHB will report, within one year of being tasked, to the Assistant Secretary of Defense for Health Affairs, who has been delegated the authority to evaluate the independent advice and recommendations received from the DHB and, in consultation with the Under Secretary of Defense for Personnel and Readiness, identify actions or policy adjustments to be made by DoD in response. The Subcommittee will provide progress updates at each DHB meeting while working the tasking.

Required Support:

1. The DHB Support Division will provide any necessary research, analytical, administrative, and logistical support for the DHB.

2. Funding for this review is included in the division's operating budget.

References:

1. United States Department of Defense. *Principal Wars in Which the United States Participated - U.S. Military Personnel Serving and Casulaties (1775 - 1991).* 2021.
2. United States Department of Defense. *Overseas Contingency Operations (OEF, OIF, OND, OIR & OFS Combined).* 2021.
3. Howard JT, Kotwal RS, Stern CA, et al. Use of Combat Casualty Care Data to Assess the US Military Trauma System During the Afghanistan and Iraq Conflicts, 2001-2017. *JAMA Surg.* 2019;154(7):600-608.
4. Cannon JW, Gross KR, Rasmussen TE. Combating the Peacetime Effect in Military Medicine. *JAMA Surg.* 2020.
5. Edwards MJ, White CE, Remick KN, Edwards KD, Gross KR. Army General Surgery's Crisis of Conscience. *J Am Coll Surg.* 2018;226(6):1190-1194.
6. American College of Surgeons Committee on Trauma. Part 2: Why the U.S. Trauma System Needs a Robust Civilian-Military Partnership. American College of Surgeons. https://www.facs.org/quality-programs/trauma/tqp/systems-programs/trauma-series/part-ii#viewport. Published N.D. Accessed May 28, 2021.

Appendix C: Meetings and Presentations

September 11, 2023: Defense Health Board Meeting
Portsmouth, VA

The DHB met in person and received briefings from CAPT Brendon Drew, Chair of the Committee on Tactical Combat Casualty Care, Joint Trauma System, on Prolonged Casualty Care and CAPT Bettina Sauter, Force Surgeon, Naval Surface Force Atlantic, on an overview of Naval Afloat Medical Capability.

October 11, 2023: Trauma and Injury Subcommittee Kickoff Meeting
Virtual

The Subcommittee met virtually and the report objectives, expectations, and notional timeline. Dr. Keila Miles provided an overview of the DHB Staff's research to date on this topic.

October 25, 2023: Trauma and Injury Subcommittee Meeting
Virtual

The Subcommittee met virtually and Col Michael Higgins, Command Surgeon, US Northern Command, briefed on the Integrated CONUS Medical Operation Plan. The members discussed the report outline and current research findings.

November 1, 2023: Trauma and Injury Subcommittee Meeting
Virtual

The Subcommittee met virtually and Maj Gen (Ret.) Paul Friedrichs, Director of the Office of Pandemic Preparedness and Response, briefed on the need for the U.S.'s health system resilience considering current global conflict. The members discussed the report outline and current research findings.

November 8, 2023: Trauma and Injury Subcommittee Meeting
Virtual

The Subcommittee met virtually and COL Jennifer Gurney, Director of the Joint Trauma System, provided an overview of the Joint Trauma System. The members reviewed and discussed the report outline.

November 15, 2023: Trauma and Injury Subcommittee Meeting
Virtual

The Subcommittee met virtually and Maj Crystal Davis, Branch Chief for Readiness Operations, Southern Command's Joint Blood Program Office, briefed on the Armed Services Blood Program's Walking Blood Bank Training. The members reviewed and discussed the report outline.

November 29, 2023: Defense Health Board Meeting
Falls Church, VA

Dr. Armstrong provided a tasker introduction to the DHB Members.

December 13, 2023: Trauma and Injury Subcommittee Meeting
Virtual

The Subcommittee met virtually and discussed sections of the report. There were no briefings at this meeting.

December 20, 2023: Trauma and Injury Subcommittee Meeting
Virtual

The Subcommittee met virtually and Brig Gen John Andrus, Joint Staff Surgeon, briefed on the current training gaps the DHA and the Services are trying to address.

January 10, 2024: Trauma and Injury Subcommittee Meeting
Virtual

The Subcommittee met virtually and discussed sections of the report. There were no briefings at this meeting.

January 31, 2024: Trauma and Injury Subcommittee Meeting
Virtual

The Subcommittee met virtually and discussed sections of the report. There were no briefings at this meeting.

February 7, 2024: Trauma and Injury Subcommittee Meeting
Virtual

The Subcommittee met virtually and discussed the report, including findings and recommendations. There were no briefings at this meeting.

February 14, 2024: Trauma and Injury Subcommittee Meeting
Virtual

The Subcommittee met virtually and discussed the report, including findings and recommendations. There were no briefings at this meeting.

February 21, 2024: Trauma and Injury Subcommittee Meeting
Virtual

The Subcommittee met virtually and discussed the report. There were no briefings at this meeting.

March 5, 2024: Defense Health Board Meeting
Falls Church, VA

Dr. Armstrong provided a decision brief to the DHB Members. After some amendments to the language, the DHB voted to approve the report and its findings and recommendations.


DEFENSE
HEALTH BOARD