Johnson, J Def Stud Resour Manage 2017, 4:2
DOI: 10.4172/2324-9315.1000133

Journal of Defense Studies & Resource Management

Commentary

A SCITECHNOL JOURNAL

Toward a U.S. Army Pacific (USARPAC) Rapid Deployment Medical Component in Support of Human Assistance/Disaster Relief (HA/DR) Operations: Capabilities Based Assessment Challenges with "Going in Light"

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Abstract

This article reports a commentary on the methodology surrounding the exploratory development and study efforts regarding a published article on the viability of a novel "going-in light" or Going Light medical component in support of US Army Pacific (USARPAC) Humanitarian Assistance/Disaster Relief (HA/DR) missions, namely, a BLU-MED® incremental modular equipment package along with a Rapid Deployment Medical Team (RDMT). There was an unreported and "untold story" in terms of the Going Light study, specifically, Capabilities Based Assessment going on in the background. This was really the consequence of Soldiers on the study group auto-performing in accordance with their training. Details on how the CBA process proceeded and deviations in the sequencing of that process are reported in detail as well as how the process was integrated in the Oracle Delphi. A CBA process encourages constructive "stepping outside the box," allowing a proposed radical departure to solve a problem and successfully accomplish inland Pacific military emergency medical HA/DR missions. Medical planning was synergistically augmented and then counter-balanced with the Oracle Delphi process that then was invaluable for composite risk management. Future avenues of study inquiry are considered.

Keywords

Disaster relief; HA/DR; Military disaster preparedness; U.S. army pacific; Emergency medical disaster response; Capabilities based assessment; Oracle delphi

Abbreviations: AF: U.S. Air Force; AO: Area of Operations; BLU-MED®: Medical Response Shelter Packages; CBA: Capabilities Based Assessment; CSH: Combat (U.S. Army) Support Hospital; COA: Corse of Action; DIA: (Department of) Defense Intelligence Agency; DoD: Department of Defense DOTMLPF-P: Doctrine Organization Training Material Leadership Policy Facilities-Personnel; EF-MEDS: U.S. Marines Expeditionary Force Medical Emergency Detachment Shelters; E-MEDS: U.S. Air Force Expeditionary Medical Emergency Detachment Shelters; HA/DR: Humanitarian Assistance Disaster Relief ; MDMP: Military Decision Making Process; MEDCOM: Medical Command; MEU: U.S. Army Medical Emergency Unit; PACOM: (DoD) Pacific Command; RHCP: Regional Health Command Pacific; RMDT: Rapid Deployment Medical Team; UN: United Nations; U.S: United States; USARPAC: United States Army Pacific Command; USN: U.S. Navy

Introduction

This article reported on the exploratory study and development efforts regarding the viability of a novel "going-in-light," or Going Light, medical capability. This capability was considered as a possible way in which joint forces—under the leadership of the US Army Pacific Command (USARPAC)—could bridge the gap in rapidly deploying military Humanitarian Assistance/Disaster Relief (HA/DR) emergency medical treatment to Pacific Command (PACOM) inland disaster areas.

Secondary intent

The primary intent of the Going Light article was to show how a new capability was uncovered for USARPAC to (1) better support the overall regional high command, (2) prepare the US Army to address inland Pacific disasters, and (3) ensure overall Pacific HA/DR emergency medical treatment operations [1]. However, there was a subtle secondary intent too. Specifically, this article reported on an expedited quasi-military decision-making process, namely, the Oracle Delphi [2-4]. This process was used in part to review a capability needs assessment on the disaster profile of the Pacific region, identify a proposed solution, assess its viability, and propose possible risks and challenges as a military response capability for Pacific HA/DR.

Nevertheless, an unreported but much more important and remarkable feature of this work was involved. That is, an implicit practical application of a military capabilities-based assessment (CBA) process at a micro-level resulted in a joint forces work product solution as well as development of military HA/DR doctrine [5-9]. Therein is the untold story. Note: The CBA was informally conducted and, though systematic as all CBAs should be, was adapted/modified to meet the particular circumstances and unusual nature of the subject matter-which is consistent with a CBA [7,10]. One might say that "military training just automatically or intuitively kicked in".

Capabilities-based assessment

A CBA provides a systematic and robust assessment of a specific mission or set of activities to help identify capability requirements and associated gaps [5-11]. CBAs reduce end-product costs and inefficiencies via analysis and development of solutions prior to the start of a capability development. CBAs have seven formal steps, but the steps can be repeated or cycled back and forth during the process:

(1) Study initiation/notification.

(2) Derive the CBA focus/aim.

(3) Determine the OP context (background and significance).

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Received: May 08, 2017 **Accepted:** May 22, 2017 **Published:** May 29, 2017

(4) Identify capabilities gaps (needs assessment).

(5) Perform a risk assessment.

(6) Identify material/nonmaterial needs.

(7) Submit documentation and recommendations [5,8,9].

A CBA avoids a common error often made by military planners, specifically, justifying acquisition based on broad generalities and a variety of non-specific threats [7,12]. The CBA requires a systematic description of where a service will operate, with whom and how it will "fight," and what it must have to accomplish the mission or diminish the threat [7,5,13]. As Cochrane notes, minimally, to articulate military success for a military task set, one must determine what capabilities are needed to accomplish a military objective, compare existing capabilities against a functional standard, and, if the match is less, a gap needs to be filled [7]. If it is more, there is overuse or excess [14,15].

Given that CBAs can be and probably should be formative keystones to the military decision-making process, the purpose of this article is to report step by step the subtle and modified CBA analytical process going on in the background, which resulted in the novel Going-in-Light proposal. It is hoped that, although CBAs are considered the province of multi-layered, global strategic planning, this commentary will show that they can have practical, powerful applications at the micro level and, thus, at all levels [5,6,9]. (Note: An Oracle Delphi and CBA are not substitutes for a formal military decision-making process for performing comprehensive analyses and comparison, achieving the highest degree of integration, coordination, and synchronization, and minimizing the risks critical to operations and plans) [16].

Step 1: Formal study initiation: In accordance with a CBA process, the Going-in-Light study was more or less formally commissioned in that the medical planning study group was tasked with quickly formulating a course of action, specifically, a viable, realistic, effective, relevant rapid response to Department of Defense PACOM inland disasters. A tacit admission acknowledged that the USARPAC needed this to swiftly project a military medical presence in rugged and remote inland areas in the Pacific where the most damage and casualties are likely to occur in a disaster [1,17-21]. These areas are also where the local/regional ability to respond medically will have been compromised [22]. Previous strategies of ponderously cobbling together unwieldy large-scale teams, medical emergency units, and Combat Support Hospitals and Medical Emergency Units (MEUs) had been costly, ineffective, and wasteful [22-25]. So, per a CBA process, a study initiation was derived from experience and perceived operational shortcomings [26]. Put differently, the command had a sense that something was missing, not happening, and needed to be done with all due speed.

Step 2: Derive CBA focus: The CBA focus, its motivation or impetus, stemmed from USARPAC being tasked with planning and preparing for effective inland disaster relief medical operations because this is a cornerstone of the US military's Pacific strategy [24,25]. US military HA/DR health operations in the region are aimed at supporting security and stability through developing the military and health system's capacity to respond to disasters and health emergencies at local, regional, and global levels (i.e., "Pacific Pathways") [25]. A USARPAC capability was necessary to centrally command, control, and forward project a presence and crisis response for an array of contingencies, including fast-acting emergency medical disaster responsiveness [1,24]. Thus, they more or less achieved consensus on a concise problem statement—a hallmark of a CBA and what ultimately focuses and drives it [27].

In other words, USARPAC needed an on-the-spot, stop-gap rapid HA/DR medical treatment response with a minimal footprint aimed at appropriate emergency medical treatment in support of local infrastructure anywhere inland in its area of operations (AO) in the Pacific [1]. As Beamer, Henning, and Cullen [6] note, 'the building architecture (for a CBA) must be clearly understood at the outset, and this influences the choice of what will be gathered in the needs assessment, what research will be needed, and what analyses can be applied.' Also, per a CBA, the Going Light study was guided by two beliefs: (1) Things might be done best with available resources, but, (2) that not being the case, things might be done better with an appropriate amount of alternative resources available in the future [28].

Step 3: Identify the operating context: In accordance with a CBA process, extensive and intensive research was undertaken to investigate the context and nature of disasters in the Pacific region and the epidemiology of resultant medical injuries and conditions [12,29]. Essentially, identification of the operating context and a needs assessment were blended. However, the Going-in-Light study reflected a vast departure from classic CBA doctrine. Specifically, CBA orthodox doctrine recommends the sole use of 'Department of Defense Intelligence Agency (DIA) service approved threat products.' as opposed to relying on field or technical manuals and circulars or strategic concept documents [30]. Although this was done, the other literature/studies searched related to medicine/health, specifically focusing on the description and epidemiology of disasters in the PACOM region [1]. This captured a fresh perspective, which doctrinally and paradoxically the CBA process also encourages [7]. This search revealed that the Pacific region is not only the most populous but also the most prone to both human-made and natural disasters; natural disasters include floods, storms, earthquakes/tsunamis, and landslides [1]. Thus, survivable injuries will include trauma and this means a need for trauma medical specialties and equipment. Reducing death depends on rapid deployment to the disaster epicenter before the injured die of survivable injuries. Also, the epicenters tend to be inland and distant from coastlines, airports, and seaports in places where US Army personnel act as the subject matter experts for military operations. [1]

According to the literature, initially, a US military response would likely be the only viable response capable of delivering needed medical treatment quickly [1,31]. The needs assessment research showed that the Pacific area HA/DR medical treatment response must be rapid (e.g., < 72h max), be fully capable of operating at or very near a disaster epicenter, consist of acute and routine trauma care, and be capable of stabilizing patients for movement to higher levels of care [1]. The response must also be light for rapid deployment, adaptable, and scalable (i.e., modular) to conform to unfolding situations. It must be inter-operable so that local practitioners can be enlisted in using it [1,19,20]. (Though local medical infrastructures may be compromised, many local practitioners will be available to lend their skills.) Most importantly, per a CBA process, the aim of this literature search was to collect relevant research on the operating context to comprehensively understand the need [7]. Ironically, apart from DIA documents, the type of literature searched in the Going Light study would be considered unorthodox by classic CBA doctrinal standards, though according to the same doctrine it also would be acceptable.

This was because of a direct attempt to avoid a common error associated with CBAs, specifically, utilizing solely military documents that echo each other and do not contribute relevance [32,33].

Step 4: Identify the gaps: Also unique in the Going Light study adaptation of a CBA process was consultation with a panel of subject matter experts using the Oracle Delphi method regarding the current context, practices, and risks—a unique merging of methods heretofore unreported in military planning. The panel compared current practices versus needs in the future and possible risks [34]. After a thorough inventory of available USARPAC military medical assets, the panel determined that no single existing unit/component was capable of rapid inland deployment of HA/DR emergency medical treatment [35]. Nor was any component well-situated, or where well-situated, available for unrestricted use. Existing Army personnel were postured toward more incremental and gradual military combat contingency operations [35].

Also, the panel review noted that USARPAC had less command and control over other assets deemed HA/DR appropriate, such as those of sister services, which are mobile and self-contained but may have pre-existing mission commitments and were never intended for inland operations [36]. For example, the US Air Force (e.g., E-MEDS), U.S. Navy (e.g., USN Mercy Casualty Receiving ships), and U.S. Marines (EF-MEDS) are wedded to Airports and Seaports/Coastlines whereas the epicenter of a disaster, its kinetic energy, and casualties will likely be inland. [35,36] Furthermore, research has clearly shown that more lives are saved when appropriate emergency medical personnel are stationed closest to where the medical emergency occurs [37,38]. Note that the needs assessment literature review revealed that the most effective disaster response has been the Army's delivery of rapid response medical treatment inland where the maximum impact of the disaster was felt—while its sister services did what they do best, which was providing transport and logistical support [39]. The CBA review of the USARPAC's inventory of current capabilities found it lacking in terms of providing the needed capabilities to fill an existing gap in providing swift inland HA/DR emergency medical treatment [35,36]. Also, none of the capabilities involved joint forces, which a CBA emphasizes in the interest of cost-efficient utilization of resources [35,36]. Put differently, shortfalls, redundancies, overlaps, and duplications of effort existed, to include capabilities of other Department of Defense components [28].

The needs assessment and review of the current context and identification of gaps led to an inferential leap of proffering a radical solution (Step 6) before considering the risks of doing something versus doing nothing at all (Step 5). This was because current practices simply did not fill the capabilities gap or filled it improperly, wastefully, and inefficiently. "Doing nothing" was not a viable option and doing what had been done previously was not viable. In other words, doing more of what had not worked in the past was not needed. Therefore, Step 5 was skipped temporarily as Step 6 was proposed; Step 5 was revisited later to consider the risks of the proposed alternative because it was so novel. Note that a CBA process is tailorable to circumstances and not rigid as long as it is systematic and its steps are retraceable [40,41].

Step 6: Identify material/Non-material solutions: Adhering to a CBA process, a novel ("outside the box") material/nonmaterial solution was "floated" based on its ability to achieve the objectives (i.e., "mission accomplishment"), timeliness, unanticipated requirements, force management, limitations, complexities, and "deconflictings." The Going Light study group considered the idea of a material/nonmaterial solution of a commercial off-the-shelf compact equipment package stored and maintained in Hawaii and staffed by a special team of trauma specialists from Medical Command (MEDCOM) Regional Health Command Pacific, preferably, Tripler U.S. Army Medical Center [1]. Just such a forward pre-positioned, pre-packaged (i.e., "hospital and docs in a box"—or rather two boxes) could be purchased from BLU-MED® Response Systems, which provides 4 to 25 bed facilities. The facilities BLU-MED® offers are fully equipped mobile, portable, flexible/modular medical treatment facilities for United Nations and other peacekeeping medical treatment operations. Note: One of the medical officers on the Going Light study group exclaimed in exasperation: "The United Nations deploy on these types of missions all the time, how do they do it and where do they get their equipment from! Let's look into that."

Remarkably, the CBA process in the Going Light study was the inspiration for the US Army to transfer technology from the UN. Nevertheless, the CBA, as a CBA should, allowed for conforming the process to the problem [5-11]. Steps can be considered out of order and revisited or iteratively cycled through as long as the process is performed systematically where retracing and review of steps is possible [5,8,9]. Second, the proposed solution provided the freedom to suggest a non-doctrinal capability solution and then consider its risks in light of the operating context. Third, it led to further considerations in terms of developing new policy for when and under what circumstances the new capability solution should be employed and whether expansion, extension, and follow-on for HA/DR efforts should be considered (i.e., DOTMLPF-P) [1,6,42]. Thus, per the CBA process, an expectation existed that, if the capability was acquired, there would be subsequent creation or alteration in doctrine, organization, training, leadership, facilities, and policy [42].

Step 5: Risk assessment: With the proposal of a capabilities gap solution, the Oracle Delphi process really ramped up with successive iterations to identify risks in terms of shortfalls or "show stoppers" that needed redress or remedy. For example, the BLU-MED system and personnel would need a "ride" to and from the disaster and ground transportation in and around the area when they got to the disaster destination [1]. However, in this instance, rather than a detraction or risk, per a CBA process, this was considered an opportunity to coordinate and leverage US Air Force and Navy logistics and transport personnel in joint forces operations—which have proved the most successful for inland Pacific HA/DR medical operations [39]. Other examples were that a provision of security for the BLU-MED, a water source, and sanitation were needed. The BLU-MED system also consists of temporary housing units that are considered "fuel hogs"; thus, a substantial need involved fuel delivery and storage. The equipment package needed storage and maintenance and did not have its own pharmaceuticals or respiratory gases. Ongoing assemblage training, pre-deployment drills, and communication equipment were needed. All of these examples were addressable by the US Army and became medical planning opportunities. Nevertheless, a CBA process combined with the Oracle Delphi method ensured identification of risks and their mitigation through pre-planning. Per a CBA process, the capability and risk mitigation/remediation were linked to organizations and roles [40,43].

Step 7: Submit documentation and recommendation: Finally, in accordance with a CBA process, documentation and recommendations along with a risk assessment were compiled in a lengthy decision brief for approval by higher authorities (i.e., "gatekeepers") [44]. Of course, the brief had three courses of action (COAs) for the gatekeeper

authorities: (1) accept, (2) reject, or (3) request further study. One sub-recommendation with acceptance was identifying and resolving potential risks ("show stoppers") through actual disaster preparation exercises with the BLU-MED equipment and RMDT personnel. Another alternative sub-recommendation was to encourage other nations in the Pacific to also invest in their own BLU-MED/RMDTs in the interest of inter-operability, accessibility, immediacy, and collaboration. A cautionary disclosure that accompanied the brief was that the BLU-MED/RMDT is not a panacea. It cannot just be acquired and then left on a shelf and forgotten. Rather, it is but one solution to a gap aimed at adaptation, opened to augmentation, and geared toward immediacy and responsiveness to inland Pacific HA/DR medical emergencies. It is a capability in need of constant vetting, grooming, and perfecting.

Discussion

In sum, in the case of the Going Light study, a CBA process permitted a proposed unorthodox, ingenious, and imaginative future solution to a daunting present gap in capabilities for inland Pacific HA/DR medical treatment operations, where no previous or pat solution previously existed. Thus, as Cochrane also notes, and hopefully the Going Light article shows, the value of the CBA process is that it provides the freedom for exploration and discovery within which to "task and function and self-organize" optimally [7]. That is, the CBA encouraged "stepping outside the box," allowing a proposed radical departure to solve a problem and successfully accomplish inland Pacific medical HA/DR missions. This was synergistically augmented and then counterbalanced with the Oracle Delphi process that was invaluable for identifying, exploring, and addressing risks. According to Cochrane this is why U.S. Secretary of the Department of Defense, the Hon. Donald Rumsfeld in 2002 originally proposed the CBA process [7,9] (Figures 1-3).

The most important and tacitly acknowledged implication of the article on Going Light is that the CBA process should be fostered into a strategic planning mind-set. This is especially true when considering both potential acquisitions of material and personnel and logistics. Remarkably, if anything, the Going Light project showed how military doctrine and training can filter down at a pre-attentive level with beneficial results. It also demonstrated how the CBA process not only works at a macro strategic level but also can be applied at a more micro/tactical level. So, advancing the establishment of a CBA mind-set is a first yet crucial step in efficiently identifying and filling capability gaps in the interest of successful mission accomplishment at many different levels.

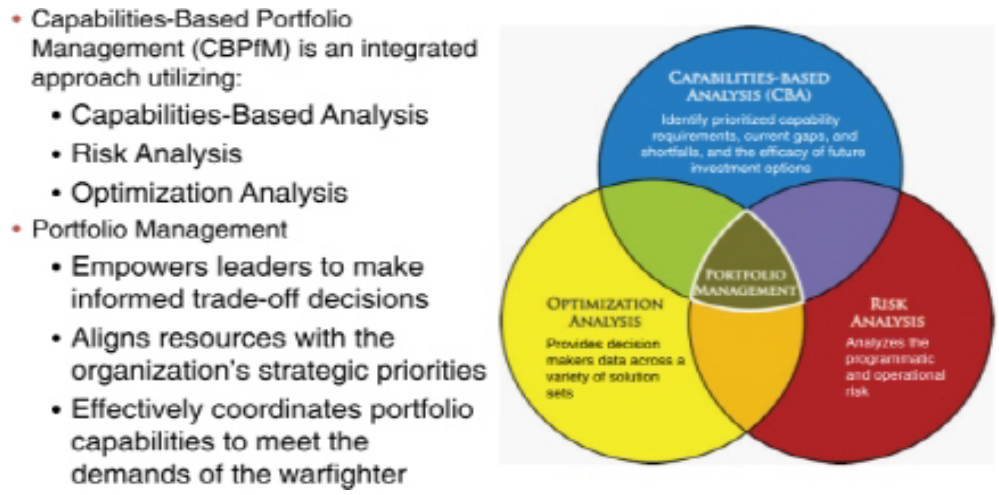

Figure 1: Military capabilities based assessment process: total concept.

Booz Allen Hamilton's Capabilities-Based Portfolio Management (CBPfM) process. SOURCE: Scott Gooch, Principal, and Christopher Anderson, Lead Associate, Booz Allen Hamilton. "Capabilities-Based Portfolio Management: Methods, Processes, and Tools." Presentation to the committee, January 5, 2012.

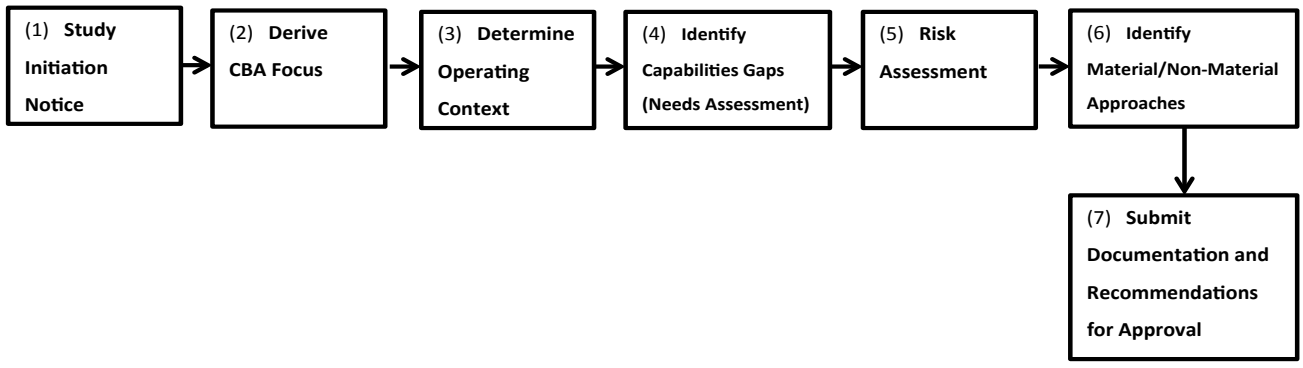

Figure 2: Doctrinally conventional capabilities based assessment process.

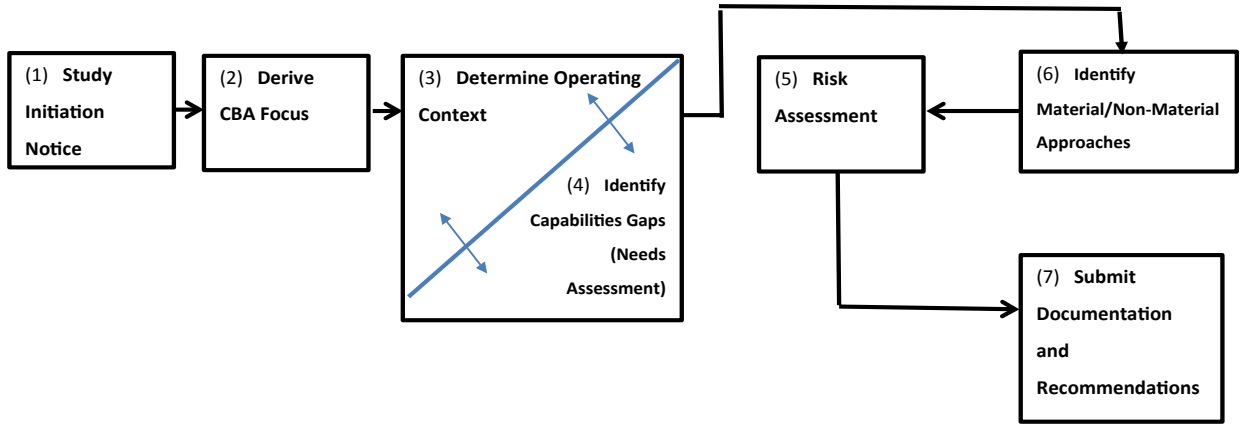

Figure 3: Going light study modified capabilities based assessment process.

The next step, and even one suggested by the CBA process itself, would be formal reporting in the scientific literature on practical "lessons learned." That is, this involves the publishing of scholarly articles describing and analyzing actual examples of CBA applications and then comparing them with the outcomes of the resulting acquisitions and their implementations [45]. Simply put, did the CBA process result in successfully filling a capability gap? The ultimate aim of all this would be to reformulate the CBA process with high-quality, peer-reviewed credible research with which to inform planners and policy makers. Thus, further development and advancement of the inexpensive, effective use of resources and personnel to efficiently achieve military missions is needed, and in the case of HA/DR military medical operations, ultimately the effort will save lives.

Acknowledgement

The Author wishes to acknowledge COL Richard Paz for review of the original manuscript and license to publish and the support of US Army and USARPAC in its preparation and UT-MDACC for in kind support. The Author reports no Conflicts of Interest. The Author also gratefully thanks the following Soldiers for their involvement: LTC Jeffrey Hogue, LTC Richard Floyd, LTC Scott R. Baird, LTC Daniel Barnes, LTC Antonio Copland, LTC Tanthetra Joseph, MSG Rodney Chiles, SFC Kevin Cook, CPT Timothy Warner, and MAJ Angela Schmillen. The Author also thanks Ms. Jacqueline Ramey for proofing and copyediting.

Ethics approval and Consent to Participate

N/A

Consent for Publication

Yes

Availability of Data/Materials

Yes

Competing Interest

N/A

Funding

N/A (Note: In kind support U.S. Army and UT-MDACC—acknowledged.)

Author's Contribution

Author is sole Author and accepts sole responsibility for content.

Acknowledgments

Yes.

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