Invited Editorial

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A Commentary

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INTRODUCTION

It is with great interest that we read the article on the twenty-first-century hospital ship by the esteemed Rear Adm. (ret.) Michael Baker, Mr. Jacob Baker, and Capt. (ret.) Fred "Skip" Burkle. Many of the concepts they outline are viable options worth consideration, but the future hospital ship is only one piece of the system-based, integrated approach for projecting medical power in support of Naval superiority.

The way our Nation employs its Naval forces is evolving. The advent of the Naval concept for Distributed Maritime Operations (DMO), the Littoral Operations in a Contested Environment (LOCE), and the U.S. Marine Corps concept of Expeditionary Advanced Base Operations (EABO) has necessitated a strategic shift in the employment of Health Service Support (HSS). In this new environment, Navy Medicine is rarely the primary mission and can no longer be viewed as a separate and distinct organization in warfare or security cooperation. Our medical capabilities are beginning to reflect this reality. Like all other maritime warfare domains, HSS must evolve to better support dynamic, multi-mission platforms.

WARFIGHTING EMPLOYMENT

Future wars and conflicts pose new challenges for our traditional up echelon continuum of care model, especially those fought at sea. In the Arctic and Pacific Oceans, we will not see the same level of medical success we came to expect in Iraq and Afghanistan. Patient care times will be extended and nonlinear. The evacuation network will require stops on nontraditional platforms until the patient reaches their final destination (Fig. 1). Hospital ships will continue to serve an important function in this network, but perhaps not in the role they played previously. The necessity for speed, the ever-present threat of over-the-horizon (OTH) targeting, and the dynamic nature of military operations require a change in how we approach HSS. This evolution began with a renewed drive toward naval integration and a need to push care forward.

The Role II Light Maneuver (R2LM) system is a collection of capabilities that provides equipment and personnel augmentation to traditional and nontraditional medical platforms. This man-portable 7-person surgical and resuscitative package can deploy on submarines, surface combatant and noncombatants, and on land in order to support a wide array of mission requirements. This approach integrates advanced medical care into the platforms while simultaneously placing care closer to the point of need. These teams travel at the speed of the warfighter. They are unhindered by the restrictions of a separate medical platform, ultimately improving patient survivability.

The Navy is expanding its afloat medical capability through the construction of Expeditionary Fast Transport (T-EPF) with embarkable medical capability. EPF is a shallow draft, all-aluminum, commercial-based catamaran providing combatant commanders high-speed intra-theater personnel and cargo lift handling capability and agility to achieve positional advantage over intermediate distances without reliance on shore-based infrastructure. The T-EPFs have been utilized for personnel and equipment transport, as well as counter-piracy and humanitarian assistance operations, including deployment in support of Operation Continuing Promise in U.S. Southern Command. USNS APALACHICOLA (T-EPF-13), the last EPF Flight I but the first of the variants to include advanced medical capability, was christened on November 13, 2021. EPF Flight II incorporates fact-of-life and operational improvements which will expand the logistics capability of these vessels to include an embarkable Role 2 Enhanced (R2E) medical capability in support of DMO, EABO, and LOCE. EPF Flight II represents a promising step in medical integration, which is key to the HSS role in the future fight. EPF 14 (USNS CODY) will be the first EPF Flight II and started construction in October 2020 and will deliver in 2023.

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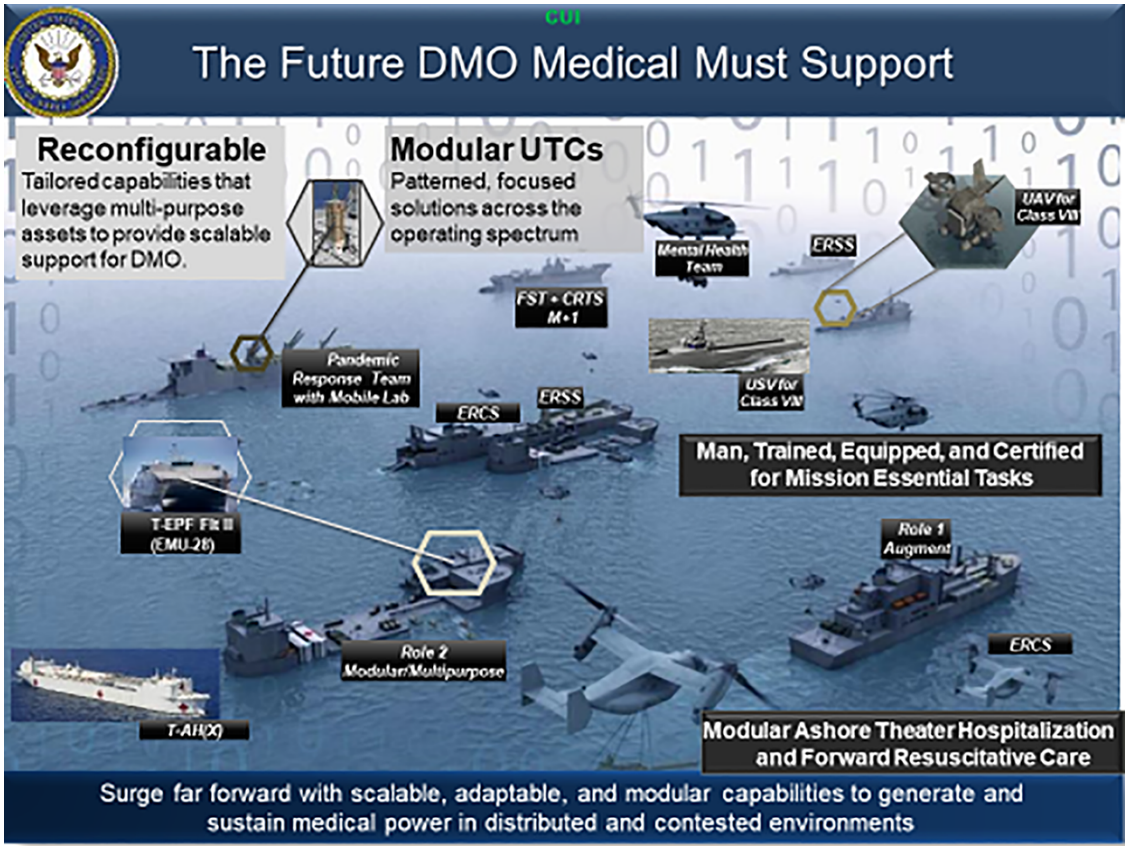

FIGURE 1. OV1 for HSS system of capabilities for DMO (CRTS—Casualty Receiving and Treatment Ship; EMU—Expeditionary Medical Unit; EPF—Expeditionary Fast Transport; ERCS—En Route Care System; ERSS—Expeditionary Resuscitative Surgical System; FST—Fleet Surgical Team; UAV—Unmanned Aerial Vehicle; USV—Unmanned Surface Vehicle; UTC—Unit Type Code).

THEATER SECURITY COOPERATION

Security cooperation is an essential tool that Combatant Commanders and the U.S. State Department use to develop new partnerships, enhance existing ones, and counter grey zone activities. Global Health Engagement (GHE) provides a smart power option to develop relationships. For HSS, GHE is an avenue for integrated force development with partner nations that is essential to interoperability. Even as we evolve to meet the wartime mission, the use of HSS as a method to project soft power will be necessary. The approach to capabilities development we have taken to achieve advanced care closer to the point of injury also lends well to smart power employment. HSS enabled multi-mission platforms to broaden the military and civilian capabilities and allow for tailored employment strategies not possible with the traditional "all or nothing" approach with our hospital ships.

In humanitarian assistance and disaster response (HADR) operations, the military plays a supporting role as dictated by civilian control. Foreign assistance is under the purview of the State Department while domestic assistance falls under State governments. In both cases, a "wholesale" approach is taken. The military provides large muscle movements, such as vertical lift, that may not be an inherent capability of the civilian authority. "Retail" or tactical level distribution is done in limited capacities for a finite amount of time—typically until the civilian authorities can provide the capability. Providing direct medical care is considered tactical level distribution. HSS can be used to augment and return to capacity the existing medical capability and conduct force health protection in support of other forces but does not replace the civilian medical capability.

Validation of the hospital ships in the humanitarian context is incorrect and implies the military is maintaining a capability for HADR alone as we evolve away from the use of these platforms for military missions. The "great white ship" approach may have yielded some short-term success in security cooperation, but has led to a long-term "status quo." As a medical organization, we must rethink how we market ourselves. To make a lasting impact, an integrated and sustained warfighter-centric approach is required. The product we offer cannot be just the hospital ship. It must be a set of tools that can be used to improve the relationship among partner nations. We must also consider the impact of these missions on operational readiness. As currently employed, hospital ships are required to maintain a state of wartime readiness that is degraded when deployed in support of missions other than conflict. As a

warfighting organization, our capabilities must always be in support of the warfighter as mission priority one.

INTEGRATED EXPEDITIONARY LOGISTICS

As we evolve our capabilities to meet these challenges, we must be aware of the support requirements. Smaller, more agile forces require resupply more often so a coherent strategy to sustain them must be developed. Medical logistics has previously been viewed as separate and distinct processes. To be effective in the delivery of our capability, we must pursue integrated expeditionary logistics. Planning for equipment maintenance, resupply, and medical evacuation is the key to maintaining mission effectiveness for sustained operations in this dynamic environment. Previously, hospital ships could bring capability and supply in large quantities. Smaller and more agile capabilities will require a deliberately planned and sustained logistics tail. For this reason, medical logistics must integrate into the larger logistics enterprise. Medical can no longer be seen as a parallel effort with stand-alone capabilities. Medical Planners must integrate with Operations and Future Plans to understand the mission and provide accurate staff estimates. Medical Logisticians must integrate with the larger Naval and Joint Logistics organizations to ensure a synchronized approach. There has been significant progress on both fronts, but much work remains to be done.

FUTURE CAPABILITIES

Navy's two hospital ships, USNS MERCY (T-AH 19) and USNS COMFORT (T-AH 20), are San Clemente class supertankers that were converted to hospital ships in the late-1980s. Both ships will reach the end of their expected service lives in the mid-2030s. The Navy is evaluating future hospital ship (T-AH(X)) requirements, taking into consideration required capacity, the need for inter-modality, and technology advances to ensure the replacement ships meet the HSS requirements of the future force.

The advances in computing technology and advent of autonomous systems create possibilities for medical care and transportation. In the dynamic environment of the future, we may see medical teams on autonomous systems and patients transported via unmanned systems. For this reason, a pulse on emerging technologies will be necessary to ensure we do not miss opportunities or induce risk by remaining unaware. Unmanned systems create opportunities but also opportunity costs. For example, if refueling is conducted by an unmanned system, then the opportunity for medical evacuation via a logistics vessel may be lost. We must understand the implications of this model of warfare and adapt. Novel solutions may arise that improve our ability to provide care and transport. If the unmanned system can be made semi-manned with living spaces while still operating autonomously, this may reduce the operational manpower burden and thereby increase medical capacity.

Capabilities that could augment the care and logistics network are being explored. This includes the use of small drones for blood and supply delivery and medium drones for patient transportation across small distances. EPF 13 will include installation of evolutionary autonomy functions; serving as important points of learning as Navy advances its unmanned vessel efforts with potential implications for future large-scale medical evacuation. Seaplanes are being explored as an old solution to the new distance problem. As we look at the challenges of medical transportation and evacuation at sea in the distributed environment, we must remember the lessons of history, but not fight the next war as we did the last.

CONCLUSION

Navy Medicine is on the glide slope to integrate with the larger naval mission in ways that previously could only be imagined. New and emerging capabilities in medical and transportation technology offer new ways to approach old problems. USNS MERCY and COMFORT were tailored for past conflicts, which consisted of large, concentrated naval battle groups and massed in infantry regiments. The future fight will be distributed over long distances with threats from all domains and will require a smaller and more agile force. To meet those requirements, HSS must evolve. HSS is no longer just about the hospital ship of today or what it may look like in the future. Fundamentally, it is how we integrate into larger military operations to put effects on target, whether that is building stronger relationships with our allies or compelling surrender of our enemies. In both cases, integrated medical capabilities tailored to support the mission are the way of the future.

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