



Security Nexus Perspectives

IN SUPPORT OF HOSPITAL SHIPS: A NEED FOR REFORM, NOT REJECTION

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A Noble History

Hospital and medical naval ships are by no means a recent addition to the defense toolkits of many world powers, despite them, only in recent years, having achieved public notice and attention. In the United States, red-cross style military vessels date back as far as the early 19th century; the USS *Intrepid* and *Red Rover* ships were designated almost exclusively as humanitarian aid vessels during the Spanish-American and Civil wars. In the First World War, the USS *Solace* was used as a floating hospital; in the Second World War, the USS *Relief* contributed to repatriations of POWs, as well as the evacuation of Guadalcanal, and was equipped with specific facilities and design features to care for wounded patients.

Today, the USNS *Mercy* and *Comfort*, despite their limitations, have repeatedly demonstrated that (though with only proven utility in HADR response; not tested in major conflict) an afloat medical platform is necessary for the future. The looming retirement of these two ships that have served so well provides an opportunity to put the lessons learned from these platforms into the design and construction of the next generation. This will require a ship supporting kinetic operations in a contested area that can also be used to support HA/DR and humanitarian operations - or a ship that is specifically designed for the latter and which, with little or no modification, can support combat casualty care, including both trauma and infectious diseases.

Troubled Waters amidst Pandemics

Despite past successes, the hospital ship program has come under fire - metaphorically speaking - for being expensive, ineffective, and occasionally, critics say, even unhelpful or counterproductive. At times seen as contributing to, rather than simplifying, the complexities of humanitarian or public health emergency responses, [some in the humanitarian realm have also criticized the USNS Mercy and Comfort for interfering with nongovernmental organizations](#) and other humanitarian assistance and disaster relief efforts. In parallel, [some in the military realm have suggested that such efforts are inappropriate uses of military resources](#), while those concerned with associated budgets have raised concerns about [cost-effectiveness](#).

History plays a part here, as well: the Navy acquired the [USNS Mercy](#) in 1986, and the [USNS Comfort](#) a year later. Each of these ex-oil tankers are run by a crew of about 80 mariners and staffed with up to a thousand medical personnel, and are part of the [Military Sealift Command](#). Originally designed to care for 1,000 injured or ill service members, these ships have, since their inception, been underutilized, and are sometimes even viewed as a [burden](#). Their combat-support role has also been peripheral, despite both ships present in the Middle East during the 1990-91 Gulf War, and the USNS *Mercy* returning to the theater when the Iraq invasion began in 2003. Since then, the bulk of their deployments have involved exercises, humanitarian visits, and a limited role in [disaster response](#).

[The global pandemic further deepened suspicion of the utility of hospital ships: the USS Mercy, in New York](#), served only a handful of patients, and at great expense. The [risk of infections](#) and outbreaks at sea are also exponentially greater than on land, making ships a questionable platform for epidemic response. Infection control is limited because of open bays and berthing. While USNS *Mercy* and *Comfort* have decontamination areas, the open-bay design and single ventilation system does not allow for separation of infected patients on ship without risking other patients and staff. That hampered treatment of patients infected with SARS CoV-2. Throughout the pandemic, the USNS *Mercy* and *Comfort* have thus often been notable by their absence - in spite of our experiencing the greatest medical, public health, security, and humanitarian disaster of the 21st century. Yet such critiques may also be interpreted as a need to reform, rather than reduce, hospital ship efforts. But what needs to change for hospital ships to remain relevant and useful, going forward?

Complex 21st Century Operating Environments

The global commons is an increasingly risky place, with accelerating change from global warming; the Covid-19 pandemic spread; economic threats; ethnic conflicts, and rising levels of trans-national friction. The world faces, also, increasing levels of asymmetric threats in the forms of heavily armed militias, as well as the emergence of cybersecurity threats to health facilities, infrastructure, and individuals. The world is also experiencing more complex, unpredictable, and prolonged crises due in part to climate extremes; rapid unsustainable urbanization; critical biodiversity losses; and other emergencies related to scarce water, food, and energy.

In turn, this drives prolonged crises via (for example) increasing numbers of migrants, refugees, and higher and higher levels of violence. To compound matters, [the victims of current conflicts and disasters are primarily civilian, not military](#). Further pressure comes from the emergence of both international and domestic terrorism; the increasing proliferation of autocratic regimes; loss of government authority; and the associated loss of health security. Reform of the hospital ship paradigm will need to be carefully mindful of these multiple operational threats.

Lessons from Abroad: the Royal Navy Experience

Currently, the United Kingdom has no designated hospital or humanitarian naval vessel. The sole platform capable of providing such assistance, the RFA *Argus*, is due to be decommissioned in 2024. Yet the *Argus* is technically viewed, because of her dual role, as a combatant ship. There is, within the Royal Navy, interest in developing a new multi-role platform - but with a limited number of hulls and a multitude of interested parties, challenges persist (despite the fact that the UK's commitment to NATO has increased its maritime hospital care demands).

A strategic case for a British Royal Navy hospital ship, or the broader utility of a specifically designed HA/DR relief platform with a significant deployable hospital capability, has frequently been supported by both the [medical](#) and [non-medical](#) communities. From a strategic perspective, it is projected that, by 2025, more than half the world's population will live within 200 kilometers of the sea, and at least [one-fifth of those living in low-lying areas \(i.e. less than 10 meters above sea level\) will be at risk from flooding and rising sea levels](#).

The impact of this twofold: (1) natural disasters will likely impact higher numbers of people more frequently; and (2) the ability of a region to deal with such crises within its own resource limitations becomes less likely. In addition, it will increasingly be in the interests of the interconnected and mutually dependent global community to reduce the impact of such disasters, and to aid the recovery of a nation as soon as possible, in order to reduce the impact of any disaster on any other nation's economy.

In order to respond to such challenges, in a timely fashion and in a way that produces meaningful impact, the most significant way that this can be achieved is from the sea: modern militaries are now being specifically designed to support and deploy in support of public health, epidemic control, and other relief efforts. The attributes of marine power – such as poise, sustained reach, flexibility, and the ability to self-sustain – also produce significant boons to the pre-positioning of responses without the need to commit a land presence, and can be deployed during emerging or seasonal patterns or threats. Extreme weather events, such as Hurricane Irma which devastated the Caribbean in 2017, are good examples of cases in which pre-positioned capabilities support the delivery of medical and HA/DR support to a littoral area affected by significant yet unpredictable events.

Within the [British government's recent Integrated Review of Security, Defence, Development and Foreign Policy](#), a commitment to responding to humanitarian disasters and reducing the impact of conflict within regions was restated. Of note, this occurred at the same time as a 'tilt' towards the UK returning to operations in the Far East and Pacific region, where disasters are both more frequent and potentially affect larger areas.

Yet the need for a maritime medical forces is also to honour a support concept that is able to respond to war fighting, maritime security (including humanitarian assistance and disaster relief (HADR); constabulary operations; counter-piracy; counter-drug smuggling; counter human trafficking; non-combatant evacuation) and defense engagement operations. This requires (1) a medical capability suitable for responding to a disaster or the impact of conflict, i.e. in the aftermath of a Caribbean hurricane or African Ebola outbreak; (2), a medical capability that supports deployed forces in a military operation within a littoral operating environment; and, (3) a medical capability that can be used to support of both civilian or military operations in order to build or enable resilience or growth in national capability.

In theory, these efforts could be delivered from a medical asset ashore, but the strategic and operational flexibilities which the use of maritime forces provide ([freedom of access](#); [poise](#); [versatility](#); [persistence](#); [mobility](#)) maximize the potential level of influence without the commitment needed or constraints imposed when deploying a land or air force medical asset. The use of a maritime hospital capability can also be valued most significantly during the times of early onset disasters; deep water engagement; littoral operations; theatre entry; and theatre withdrawal.

It is during the latter times, where casualty rates are likely to be high for limited periods or events, and which will potentially stretch resources ashore or outweigh air assets, in which a maritime option offers both time and initial critical mass before other resilience initiatives can be put into place to resolve them. The added flexibility of a declared and internationally protected platform also offers the greatest protection to those in need, without the fear of further repression or conflict.

Reform Scenarios

Faced with serious [accidents](#), a growing Chinese maritime force, as well as rising maintenance costs, the US Navy intends to retire one current hospital ship (based on hull life rather than effectiveness concerns) and explore new options. Yet it is unthinkable that [the hospital ship paradigm might be abandoned](#); opponents to such a step say that this would also, in an emergency, at the very least result in difficulty getting casualties off shore to definitive medical care in a timely fashion.

Fortunately, [a number of notable and innovative alternatives](#) have emerged. The first involves the establishment of a sea base, in the form of a ship that serves multiple purposes: the [USS Lewis B. Puller](#) is an [Expeditionary Sea Base](#) (ESB) that is currently located in the Middle East, providing launch pad and counter-mine services; special operators are exploring options to install medical facilities in this highly flexible modular ship. Capacities range from discrete surgical modules to extensive medical capabilities with large numbers of patient beds, and the ship can be converted rapidly for different functions.

The second replacement consideration involves the construction of a variant of the [San Antonio-class](#) amphibious ship, which is around one-third the size of current hospital ships. At \$1.4 billion each, the [LPD Flight IIA](#) is 30% cheaper than a regular LPD, and uses a proven hull design with features that allow for five different configurations including categorizations such as ‘Humanitarian Operations’ and ‘Hospital Ship’.

A third option is a modified dual-hulled Expeditionary Fast Transport (EPF), with helicopter landing capacity and a significantly lower cost of \$180 million. Current EPFs, previously known as [Joint High Speed Vessels \(HSV\)](#), possess a flexible and cost-effective hull that can be outfitted with a wide range of accessories, that include adding medical facilities, to enable the EPF to operate as a hospital ship. EPFs can also move at 50 mph, which makes them ideal as a provider of urgent medical services, potentially between (1) combat zones and ESBs or (2) land-based healthcare facilities. In all of the above, rotary wing access is, of course, a critical consideration.

Hospital ships must, then, be reconfigured for the 21st century world, not least to act as tools that can best be applied to the changing scope of warfare, public health; epidemics; disaster relief, and crisis response – which, in turn, today need to be focused more than ever before on civilian populations, rather than military.

In this regard, warships are very often forward deployed, and are significantly faster than current hospital ships, providing early and immediate aid in disaster scenarios. When teamed with faster forward-deployed hospital ships and used as a “combined soft power tool”, [significant gains in U.S. image and goodwill have been noted via the use of both combat ships and hospital ships in Humanitarian Relief and Disaster Response \(HADR\)](#).

Cost-Effectiveness, Intangible Effects, and Smart Power Competition

Another way of framing the hospital ship paradigm is in terms of U.S. Department of Defense strategic investment. In a theoretical scenario, what is better for national and international security: a dozen aircraft carriers, for example, or ten aircraft carriers combined with two hospital ships – in a situation in which there are already sufficient carrier battle groups required to meet mission? Is there, in this regard, evidence that the US or other countries currently have ballistic or hard power naval shortfalls that require additional investments?

In contrast, the need for infectious disease and pandemic control investments has become a higher national security priority than ever before. If appropriately conducted, such investments (as demonstrated by the [‘vaccine diplomacy’ debate](#)) also stand to have vital ‘hearts and minds’ (and therefore strategic and security) effects in potential international alliance and goodwill efforts.

Other countries, too, are gaining interest in the hospital ship paradigm. [France](#), as part of its revised Indo-Pacific strategy, has increased humanitarian and other disaster relief investments; the Chinese *Peace Ark* has long been a prominent presence throughout the region in the HA/DR context. Rather than an arms race, therefore, the US may now face a far more benign, and potentially far more cost-effective, 21st century soft power and humanitarian assistance race. Again, referencing current developments in pandemic diplomacy in the region – that demand enhanced effectiveness of and investment in such efforts.

Regional Power Competition and Global Health Diplomacy

[The U.S. Interim National Security Guidance of March 2021](#) predicts the future global security landscape will consist of “pandemics and other biological risks, the escalating climate crisis, cyber and digital threats, international economic disruptions, protracted humanitarian crises, violent extremism and terrorism, and the proliferation of nuclear weapons and other weapons of mass destruction” With much of our future therefore predicted to consist of health and humanitarian challenges, perhaps as never before, it is intuitive that the U.S. would wish to retain, and even improve, its capacity to provide assistance in this regard.

Moreover, hospital ships by their nature provide an intrinsic soft power element that many potential partners find attractive. Countries such as the PRC is also aware of such humanitarian dividends (as noted above), and uses its hospital ship *Peace Ark* with great effect. In this regard, the PRC recently commissioned a second hospital ship, the *Nanyi 13*, recognizing the soft and smart power value of these assets in the pandemic and post-pandemic contexts.

Future cooperative engagement with foreign nations, especially along the Pacific Rim, also requires that the U.S. maintain a continuing cooperation presence along with a rapid Humanitarian and Disaster Response (HA/DR) capacity. The related continuing regular contact with U.S. military forces through port visits, joint exercises, and regular assistance also fosters understanding, and builds bridges for interoperability.

Conclusions

As the U.S. and other navies shift operations towards a more evenly distributed 21st century force, in terms of roles and responsibilities, having a number of smaller and more agile medical support vessels is a logical evolution in capacity. Speed of response is often the most critical element of any HA/DR operation, an infectious disease outbreak, or a mass casualty combat event: the ability to gather biosurveillance information, and take fast action to move people, equipment, and supplies throughout the operational area almost always determines whether the operation will be effective.

A tactical and high-speed medical response vessel, whether converted from an existing hull or a totally new and modern platform is needed for future combat casualty response, humanitarian missions, and participation in cooperative security engagements. The future hospital ship should operate forward deployed in the theater on routine missions improving security cooperation, both independently and with the fleet forces to provide immediate combat support and humanitarian disaster response. Multiple, smaller, faster, and accessible hospital ships should be developed for 21st Century strategic aims.

New hospital ship designs and paradigms also need to be developed and continuously forward deployed with, or in proximity to, the battlegroups they support in order to provide for both the primary and secondary missions. This must therefore be a platform for the future of 21st century military operations – fast, tactical, defensible, interconnected, and above, all mindful in design and protocol of the primary threat of infectious disease control and response. Such vessels must also be capable of making port visits to promote constructive and collaborative engagement, and act as a rapid responder (along with military assets and local security forces) in any humanitarian, pandemic, or other health-related crisis.

Communication with the fleet and with elements ashore is also essential - both (1) to function within the needs of the relevant command in a hostile action, and (2) to coordinate the resources of the broader group in a humanitarian action in support of the hospital ship. Smaller and more flexible platforms, which are distributable and can operate close into the littorals, may thus - as we have tried to demonstrate - be better suited to today's global threat environment.

The real issue however, is not related to the specific platform by which HA/DR efforts take place - nor is it necessarily the associated personnel decisions that make this evolution an important, and potentially vital, element of national security. It is, rather, the capacity of hospital ships to support strategic,

operational, and tactical objectives in the epidemic and pandemic realms which makes the capability to support either (1) a response to a disaster or (2) other humanitarian efforts.



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