

## INTERSECTING HORIZONS: THE NEXUS OF MARITIME SECURITY AND GLOBAL HEALTH

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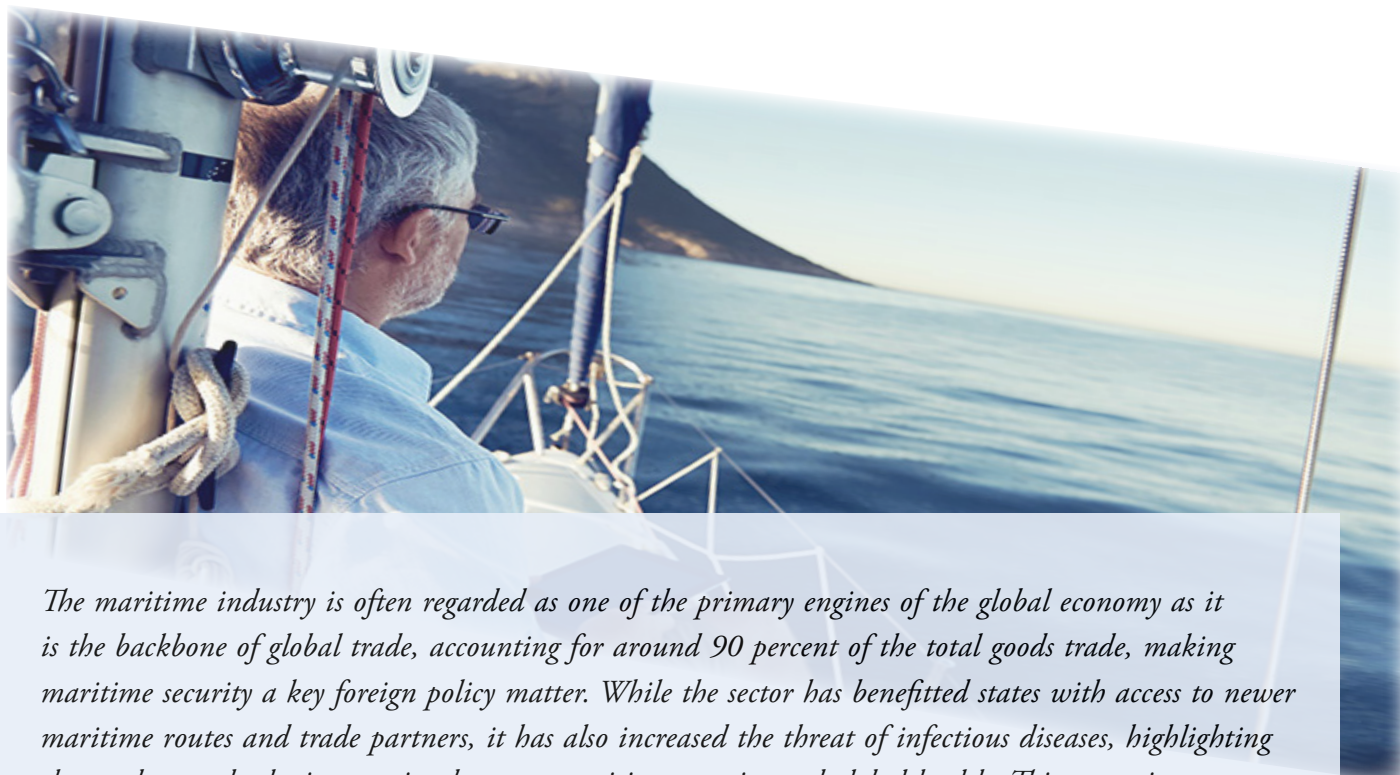


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*The maritime industry is often regarded as one of the primary engines of the global economy as it is the backbone of global trade, accounting for around 90 percent of the total goods trade, making maritime security a key foreign policy matter. While the sector has benefitted states with access to newer maritime routes and trade partners, it has also increased the threat of infectious diseases, highlighting the need to study the intersection between maritime security and global health. This nexus is a bidirectional phenomenon, as the industry is also found to be adversely affected due to health concerns, as witnessed during the COVID-19 pandemic. With the maritime industry gradually returning from the trade restrictions, it thus becomes imperative to push for better preparedness, detailed management plans to minimize transmission, and increased accountability to ensure the safety of seafarers and the larger population.*

### Introduction

With the end of the Cold War, the world witnessed an evolving approach towards maritime security, with issues such as piracy, armed robbery by non-state actors, illegal migration, human trafficking, and smuggling of contraband. Concerns such as the marginalization of fishing communities, threats to seafarers, environmental degradation, and climate change-induced threats to coastal ecosystems have brought the human security angle into the maritime domain. Though viewing

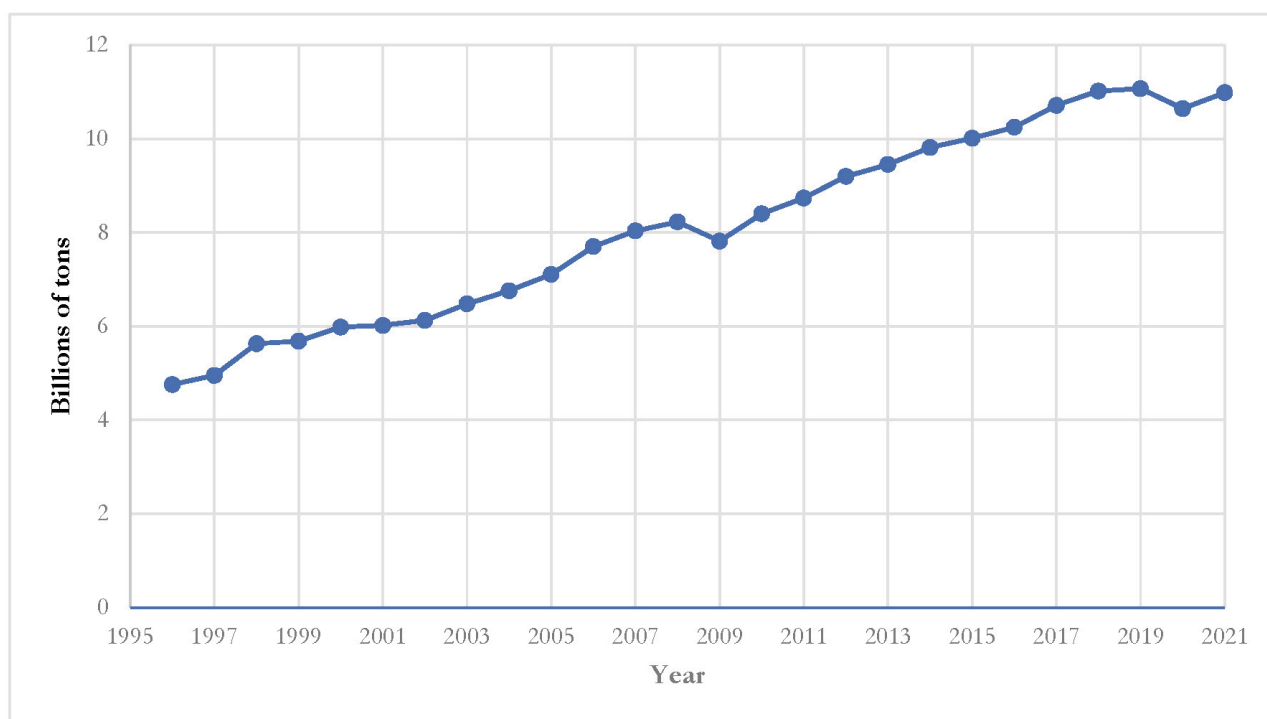
maritime security through the lens of human security was welcomed, its influence on maritime security, practice, and policy decisions has remained low. However, the rise in the movement of people and goods through the maritime domain has made the world susceptible to global health challenges and necessitates an inquiry into the nexus between the two domains.

The dependence of lives and economies on the maritime sphere for trade, transport, and resources, has historically

been prevalent and has deepened in the recent decades.<sup>1</sup> It is the source of food and other critical minerals, supports the economy through trade and tourism, and plays a crucial role in the generation of both renewable and non-renewable energy.<sup>2</sup> Figure 1 depicts the maritime domain's increasing role in shipping goods, almost reaching 11 billion tons in 2021. According to the United Nations Conference on Trade and Development (UNCTAD), the maritime trends report forecast a sustained growth of at least 2 percent between 2024 and 2028.<sup>3</sup> Amounting to up to 90 percent of total global trade, the importance of the oceanic trade was reiterated during the 2021 Ever-Given cargo ship accident in the Suez Canal.<sup>4</sup> The incident highlighted the fragile nature of the supply chains, the importance of maritime trade, and the need to secure the same.

security, and strategic interests. The importance of sea power and security was highlighted by U.S. Navy flag officer and historian Alfred Thayer Mahan, who iterated on the impact of maritime trade on the wealth and strength of the states.<sup>6</sup> On similar lines, Sardar K. M. Panikkar emphasized the need for the protection of the influential Indian Ocean due to its strategic importance for industrial development, commercial growth, and a stable political structure in the region. Gradually, maritime security has evolved to become a key component in the global security architecture, with the securing of vessels, both at sea and anchored, as well as the safety and security of infrastructure and seafarers taking prominence.<sup>7</sup> However, despite being one of the critical domains of global security, the health security dimension in the maritime sector is often overlooked despite multiple health risks accounted for in the sector.

**Figure 1: Goods Loaded Worldwide - Seaborne Trade**



Source: Maritime Transport - World Seaborne Trade<sup>5</sup>

While the maritime sphere is important for the economy, states have also accorded importance to the sea traditionally and their ability to traverse it decided the course of expansion and domain of influence. Thus, the maritime sector has developed as an interconnected sphere through the convergence of economic, political,

## Maritime and Health Security Nexus

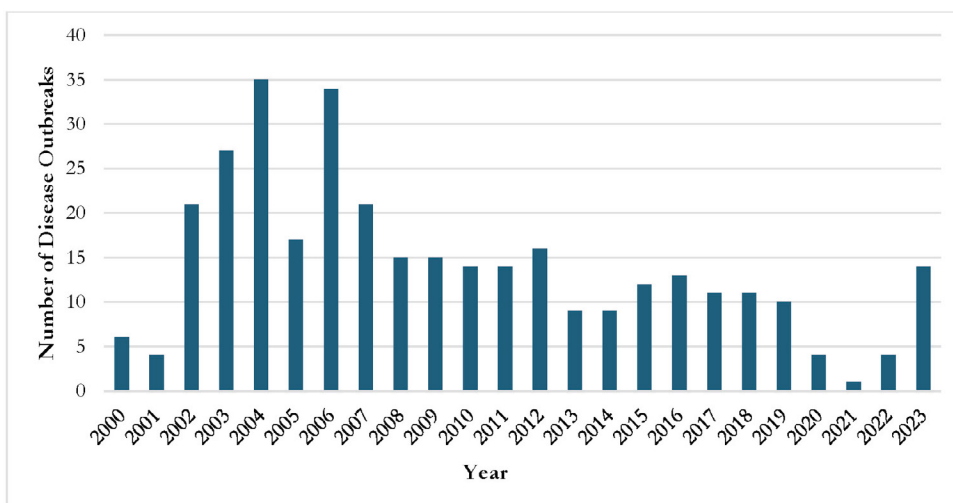
The transmission of infectious diseases via maritime transports, on board vessels, and to multiple communities has been a major public health risk throughout history, where ships have played a devastating role.<sup>8</sup> For instance, when the Marseille Plague broke out in the

15<sup>th</sup> century quarantines were introduced to avoid its spread.<sup>9</sup> The relationship between the two domains was also evident during the Atlantic Slave trade of millions of Africans to the Americas that resulted in the spread of malaria and novel pathogens, the death of 2 million sailors between the 16<sup>th</sup> and 18<sup>th</sup> centuries due to scurvy, the spread of Spanish influenza due to overcrowded ships carrying troops during the First World War.<sup>10</sup> Additionally, the Minamata disease in Japan spread through the consumption of contaminated fish and shellfish due to wastewater discharge from a chemical plant, the outbreak of Legionnaires’ disease in US cruise ships in 1994, and the case of Australian passengers on a cruise ship in New York affected by acute respiratory illness, which was later attributed to the reversed or opposite flu seasons in the 1990s, highlight the nexus of the domains.<sup>11</sup> Figure 2 depicts the number of disease outbreaks on cruise ships from 2000-2023 reported in the U.S. Even during the recent COVID-19 pandemic, its transmission via vessels and ships posed a threat and was seen as a potential carrier of the virus due to being anchored and docked in multiple ports. The case of Diamond Princess made headlines when the cruise ship reported more than 700 cases and 14 deaths among the crew and passengers.<sup>12</sup> Such cases of transmission of diseases on maritime routes are estimated to incur an annual cost of USD 750 million for medical treatment and evacuation of seafarers.<sup>13</sup>

A potential public health risk associated with ships and the maritime sector is related to the ballast water, which is carried by ships to remain stable in the water. However, the discharging of these in a controlled manner is a challenging task to ensure the safety of the vessels as well as the crew on board. A key concern is the discharging of ballast waters from one region of the globe elsewhere, which potentially leads to the introduction of emerging and reemerging species. While the matter is primarily an environmental concern, it also impacts health security. The 1991 cholera outbreak in Peru is an example of the suspected introduction of the disease due to unaccounted ballast water disposal.<sup>15</sup> The incident marked the return of cholera into Latin America after almost a century and according to the Pan-American Health Organization (PAHO), resulted in a steep economic burden, mainly due to bans and embargoes by trading partners as a precaution to avoid cholera in their territories.<sup>16</sup> Such incidents call for considering health as a factor in maritime security by highlighting the link between them.

While the effect of the maritime industry on global health is discussed, it is also imperative to examine the effects of global health events on the maritime industry. The COVID-19 pandemic induced a polycrisis situation, with border closures impacting trade. The maritime industry had to bounce back from the

**Figure 2: Number of Disease Outbreaks on Cruise Ships in the U.S. (2000-2023)**



Source: Vessel Sanitation Program, Centers for Disease Control and Prevention (CDC)<sup>14</sup>

pandemic restrictions as depicted in Figure 1. However, since 2021 there have been multiple geopolitical and geo-economic tensions worldwide that have led to the seizure of ports, blockage of routes, and destruction of ships. Figure 2 also suggests that while there has been a decrease in disease outbreaks since 2020 due to the travel restrictions imposed on cruise ships on account of the COVID-19 pandemic, the rise in the numbers in 2023 needs to be addressed. Thus, there is a need to push for better preparedness, detailed management plans to minimize transmission, and increased accountability to ensure the safety of seafarers and the larger population. Additionally, the role of maritime trade in the transport of pharmaceuticals and medical devices is steadily increasing due to the adoption and integration of cold chain technologies required for these biologically sensitive goods. Up to 3.5 million tons of these products are carried by sea freight as compared to 0.5 million tons through air.<sup>17</sup> Further, the comparative carbon footprint of air freight is higher than that of sea,

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making it imperative for companies to shift to the ocean to reduce their share of carbon emissions.<sup>18</sup>

## Existing Mechanisms

The increased global travel and transport of marine fleets have been associated with the spread of diseases into new territories, which led to international agreements on sanitation and regular health checkups for the crew. As part of the International Health Regulations, there is a mandate obliging the ship operators to undergo sanitation drills every six months. Similarly, the Maritime Declaration of Health is a tool helpful in the early detection of public health concerns as it contains the details and status of the health of the crew aboard a ship while entering or leaving a port.<sup>19</sup> Similarly, the Maritime Labour Convention (MLC) of 2006, a landmark convention concerning the rights and welfare of seafarers, covers preventive measures to protect them from diseases.<sup>20</sup>

The U.S. Centre for Disease Control and Prevention (CDC) was one of the first to establish a sanitation program for vessels after the widespread outbreaks of gastrointestinal diseases on cruise ships.<sup>21</sup> A cooperative mechanism, the comprehensive sanitation program helped establish higher standards of hygiene on board vessels. Similarly, in 2006, the European Union formulated the SHIPSAN project that aimed to address public health risks arising from ships and other vessels by establishing a standardized syndromic surveillance for influenza-like illness. It also included guidelines for port and ship authorities to manage outbreaks.<sup>22</sup>

In response to the cholera outbreak due to ballast water, the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM) was initiated.<sup>23</sup> Similarly, the MLC has precautionary measures to prevent the spread of chlamydia from seafarers. However, such frameworks are yet to be effectively implemented as there are multiple barriers to these multilateral and cooperative efforts. For instance, shipping companies register their vessels in states with relatively lower and less stringent labor laws.<sup>24</sup> Another barrier is the mechanism of Flags

of Convenience (FOC), which allows vessels to be registered in a different country than that of the owner of the shipping company.<sup>25</sup> The FOC arrangement has grown to become an important revenue source for the issuing states, but the negative impacts have raised questions on accountability and grown into a means to evade responsibility. Both the United Nations Conventions on the Law of Sea (1982) and the Convention on High Seas (1958) require the flag state to maintain a genuine link with the vessel owner; however, the term is not defined legally.<sup>26</sup> Using such legal loopholes, these companies are reported to employ crew members from lower-income countries with lower pay, and bad working conditions which has an impact on health.<sup>27</sup>

## Way Forward

The health risks associated with the maritime sector along with their occupational and societal challenges need to be considered. Research into the area could help in the effective formulation of precautionary and preventive measures to ensure the safety of seafarers as well as the threat of dissemination. While international organizations such as the IMO, MLC, and WHO have attempted to address the concern, lack of coordination among the multiple stakeholders has resulted in stalling effective implementation. In this regard, the incremental model of decision-making developed by Charles E. Lindblom could be used as a roadmap for influencing policy decisions in a step-by-step approach.<sup>28</sup> The model promotes modifying existing and established mechanisms over the development of completely new strategies.<sup>29</sup>

Adopting the incremental decision-making model, policy concerning the nexus of health and maritime security can bring in small changes and additions to the existing frameworks to make them efficient and effective. In this regard increasing the training and education among maritime students to enhance the understanding of themes such as maritime health services, safety, risk management, and regulation.<sup>30</sup> The use of technology is another incremental step towards preparing seafarers and aiding them in identifying and preventing disease

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spread. The use of artificial intelligence and telemedicine among other technological advances can be used in the effective detection and diagnosis of existing illnesses. This data can be further relayed for processing a database which could help in early diagnosis among seafarers as well as port authorities and family members.

Ships or vessels that are potential carriers of diseases anchor in ports, making them the most susceptible to an outbreak and further transmission. Thus, securing these points of entry (PoEs) by enhancing their core capabilities is key to addressing public health emergencies. Critical infrastructures should therefore be able to provide appropriate medical service along with adequate staff and equipment. When encountering a potential global health concern, the PoEs should be able to detect and initiate preliminary responses. Further, specified areas should be established for assessing travelers and crew with ill health.<sup>31</sup> This was a major drawback during the COVID-19 pandemic when the cruise ship Ruby Princess was found to have disembarked passengers without proper quarantine.<sup>32</sup>

Another important measure is enhancing cooperative mechanisms by viewing such disease outbreaks as a public health emergency. In general, the responsibility of a disease outbreak onboard a vessel should be dealt with by the flag state. However, due to the existing loopholes in these mechanisms, the current flag state may not be capable of dealing with such health risks. In such a scenario, there is a need for collaborative action by the state to which the shipping company belongs, the states whose citizens are onboard along with international organizations. Actions such as rescuing crew and passengers, addressing their health concerns, pre-emptive tests, and repatriating them require coordinated efforts from different countries and sectors. Cooperative mechanisms such as the Regional Maritime Security Initiative (RMSI) and multilateral initiatives by India, China, and Japan in the larger Indo-Pacific region to fight piracy are important examples of the importance of sea trade and the need to safeguard it.<sup>33</sup> Taking these instances of unusual collaboration as an imperative, there is a need to include health factors in developing a comprehensive maritime security strategy.

The idea of maritime security has been a key foreign policy concern in the recent past. However, in the modern era, the concept has expanded to include the role of multiple stakeholders and multiple issues beyond security. Multilateral cooperation and mechanisms are an avenue to broaden the area, to bring interdisciplinary perspectives of human, health, and environmental security to address contemporary challenges.

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