


The Seaborne Threat: Why the Emerging Hantavirus in Ships Should Worry Travel Medicine

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Introduction

The maritime industry, which plays a vital role in global trade and passenger transport, has long been recognized as a potential vector for infectious diseases. Historical evidence from quarantine measures, which were introduced in response to the spread of diseases such as plague, as well as the more recent experience during the COVID-19 pandemic, shows that ships are capable not only of carrying infections but also of spreading them ¹. At present, there is a new risk: transmission of a novel or emerging Hantavirus strain via ships. In this editorial, we will assess the current situation and modes of transmission for the virus at sea, as well as clinical management and preventive measures available onboard ships under various scenarios that could occur at sea.

The European Centre for Disease Prevention and Control (ECDC) reported as of 6 May 2026 that there have been eight confirmed cases overall, two of which resulted in death ². This highlights the potential severity of this particular strain and underscores the urgent need for practical solutions from the travel/global health community. Based on initial findings, there appears to be a cluster of acute febrile disease with renal or pulmonary complications affecting crews and passengers aboard cargo and passenger ships sailing on major shipping routes worldwide. Hantaviruses have always been considered airborne pathogens spread via inhalation of aerosols from the urine and feces of rodents in rural environments ³. This new finding, however, may point to a different epidemiology because the pathogen seems to exist in rodent populations that have developed synanthropic habitats within ships' cargo compartments, storage facilities, and ducts. Initial genomic analysis suggests a reassortant or mutated version that exhibits increased resistance in humid spaces. Therefore, its status may be characterized as that of a proto-pandemic pathogen.

When Hantavirus spreads on ships, the process is quite different from that on land. One key factor is that a ship's air system can greatly amplify the usual route— inhalation of aerosol from rodent droppings —by dispersing infectious particles throughout cabins and shared areas. In addition, there are other ship-specific routes ⁴. For example, fomite-mediated transmission may occur through shared surfaces like railings and kitchen counters; the virus might stay active longer there because ships are often cool and humid. There is also a small but proven risk of rodents contaminating freshwater tanks. Furthermore, a troubling hypothesis suggests that crew members with subclinical infection could shed virus for a long time, potentially blurring the line between zoonotic and human-to-human spread in these closed environments.

Experts in travel medicine and port health should always consider Hantavirus in a patient presenting with unexplained fever, thrombocytopenia, acute kidney injury (hemorrhagic fever with renal syndrome, HFRS-like), or rapid respiratory deterioration (Hantavirus pulmonary syndrome, HPS-like), especially if the patient had shipboard exposure two to six weeks earlier. Cases originating from ships may show mixed symptoms, further complicating diagnosis. Rapid molecular testing (RT-PCR) for Hantavirus RNA coupled with serology (IgM/IgG) should be performed first. However, point-of-care assays are urgently needed for onboard or port-side use. Supportive care remains the mainstay: fluid therapy, vasopressors for shock, and, for critically ill HPS patients, extracorporeal membrane oxygenation (ECMO). Ribavirin's effectiveness has been inconsistent; it should be used early in HFRS forms, preferably within seven days after symptom onset ⁵.

Prevention of maritime Hantavirus transmission requires a layered strategy (One Health approach) combining travel medicine, veterinary public health, and

ship engineering. On a ship, this integrated approach is essential to break the chain of transmission before the next port. Traditional rodent fumigation is inadequate because rodents reinfest quickly. Thus, continuous electronic monitoring, tamper-resistant bait stations, and strict waste management are recommended. Experimental approaches such as contraceptive baits are still under investigation. Ventilation improvements—including HEPA filtration with UVC treatment and negative-pressure isolation cabins on passenger vessels—can reduce airborne viral load. For personal protection, high-risk individuals should wear N95 masks in storage areas and avoid direct contact with rodent droppings, preferring soap and water or hypochlorite solutions over alcohol-based sanitizers. Although no licensed Hantavirus vaccine is available for travelers, candidates such as Hantavax® and DNA vaccines are in trials. For now, post-exposure monitoring and early antiviral therapy are the mainstays, not pre-exposure prophylaxis⁶.

The detection of ship-borne Hantavirus is not an isolated event but a stress test for our globalized health-security system. We urge the International Maritime Organization (IMO), World Health Organization (WHO), and national port health authorities to create a Maritime Sentinel Surveillance Network—a platform for real-time data-sharing on rodent-borne pathogens on vessels. Travel medicine practitioners should always include maritime exposure history in pre-travel assessments, particularly when a person will be aboard a ship for a long time. Research should focus on Hantavirus persistence in marine aerosols, the effectiveness of modified ventilation systems, and accelerating vaccine development for mobile populations. Ignoring this threat is like sailing a ship without a rudder; it is time to chart a new course.

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