

Hantavirus Outbreak Associated with Cruise Ship Travel in 2026: A Brief Insight into an Emerging Multi Country Zoonotic Threat

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On 2 May 2026, the WHO was notified by the UK's International Health Regulations Focal Point about a cluster of severe acute respiratory illness (SARI) on a Dutch cruise ship, M/V Hondius. Death of two passengers and one person was critically ill was reported. Laboratory tests in South Africa confirmed the presence of hantavirus in the critically ill patient, with hantavirus pulmonary syndrome (HPS). As of May 15, the WHO has reported 10 cases (8 cases were confirmed by laboratory testing) and 3 fatalities. The vessel, carrying 147 passengers and crew members of multiple nationalities, departed from Ushuaia, Argentina, on 1 April and travelled across the South Atlantic, making several stops in remote and ecologically diverse locations. [1] The first Health Advisory (CDCHAN-00528) was issued by the CDC on May 8, 2026, to make the public aware.

Hantaviruses of Western Hemisphere origin, referred to as New World hantaviruses (e.g., Sin Nombre virus), can cause HPS, also known as hantavirus cardiopulmonary syndrome (HCPS). The New World hantaviruses spreads HPS in North America, while Orthohantavirus andesense is dominant in South America. Except for HPS, hantaviruses can cause other clinically significant illnesses such as haemorrhagic fever with renal syndrome (HFRS), which targets the excretory system. HFRS-causative hantaviruses, commonly referred to as 'Old World hantaviruses', are prevalent in Europe and Asia. [2] The occurrence of HPS in cruise ship passengers underscores the global relevance of hantaviruses and the importance of understanding their epidemiology and disease spectrum. The occurrence of hantavirus infection among passengers on an international cruise ship illustrates how globalization and expanding travel have reshaped the epidemiology of zoonotic diseases. Cruise itineraries increasingly travel across remote ecosystems [3] where travellers may encounter wildlife reservoirs and vectors that are uncommon in their home countries. Although hantavirus transmission remains primarily associated with exposure to infected rodent excrement rather than person-to-person spread [1-4], infected travellers can present with symptoms long after leaving endemic areas, posing diagnostic challenges for clinicians unfamiliar with the disease. This event highlights the importance of international surveillance, timely information sharing under the International Health Regulations, and heightened clinical awareness to facilitate early recognition and appropriate

management of emerging infectious diseases.

Hantaviruses are enveloped viruses with a negative-sense, single-stranded RNA genome and are classified within the family Hantaviridae. They survive in nature through the recurrent infection of rodent, shrew, mole, and bat hosts without causing significant disease. Humans become accidental hosts when exposed to hantavirus-infected animal urine, saliva, or faeces through inhalation of contaminated aerosols [1, 2, 4]

Globally, hantavirus is an important rodent-borne viral pathogen with seven genera and 53 species. Old World hantaviruses, including Hantaan, Seoul, Dobrava-Belgrade, and Puumala viruses, predominantly cause hemorrhagic fever with renal syndrome (HFRS), whereas New World hantaviruses such as Sin Nombre and Andes viruses cause HCPS, a disease associated with mortality rates of <1–15% in Asia and Europe and approaching 50% in the Americas.

The hantavirus genome consists of three RNA segments designated small (S), medium (M), and large (L), encoding the nucleocapsid protein, envelope glycoproteins (Gn and Gc), and RNA-dependent RNA polymerase, respectively. [5, 6] Viral attachment to endothelial cells occurs primarily through $\beta 3$ integrins, followed by receptor-mediated endocytosis. Unlike many viral infections, hantaviruses cause minimal direct cytopathic damage. Instead, disease severity results largely from an exaggerated host immune response characterized by activation of cytotoxic T lymphocytes, macrophages, and pro-inflammatory cytokines, leading to increased vascular permeability. Consequently, capillary leakage is the hallmark pathological feature responsible for hypotension, pulmonary edema, and renal dysfunction. [6]

Clinical manifestations vary depending on the infecting species. HFRS typically progresses through febrile, hypotensive, oliguric, diuretic, and convalescent phases. Patients commonly present with fever, headache, thrombocytopenia, proteinuria, and acute kidney injury. In contrast, HPS begins with nonspecific flu-like symptoms which rapidly progress to pulmonary edema, respiratory failure, and cardiogenic shock. Laboratory abnormalities include thrombocytopenia, elevated hematocrit, leukocytosis, and increased serum lactate levels.

Early diagnosis remains challenging because initial symptoms resemble influenza, leptospirosis, dengue, and coronavirus infections. Laboratory confirmation relies on serological detection of virus-specific IgM and IgG antibodies using enzyme-linked immunosorbent assay (ELISA), while reverse transcription polymerase chain reaction (RT-PCR) allows detection of viral RNA during the acute phase. Recent advances in next-generation sequencing have enhanced surveillance and facilitated identification of novel hantavirus strains circulating among wildlife reservoirs. [1]

Currently, no universally accepted specific antiviral therapy exists for hantavirus infection. Treatment is

primarily supportive and includes aggressive fluid management, correction of electrolyte imbalance, renal replacement therapy when indicated, and intensive respiratory support for severe HCPS cases. [7] Ribavirin has shown clinical benefit in some patients with HFRS when administered early, although evidence supporting its efficacy in HCPS remains limited. [8] Extracorporeal membrane oxygenation has improved survival in critically ill patients with severe cardiopulmonary involvement. [9]

Conclusion

The 2026 cruise hantavirus outbreak is an early warning which shows the challenge to combat with the zoonotic infections where increasing international travel is common. A coordinated cross-border surveillance with early detection can help to curb disease transmission. Constant monitoring wildlife reservoirs, advancing research and diagnosis on antivirals and vaccines may reduce the risk and spread of hantavirus outbreaks. The current event is a reminder to respond early for preventing and responding to emerging zoonotic threats.

Regards,

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Keywords

Cruise, disease, Hantavirus, infection, travel

Abbreviations

Enzyme-linked immunosorbent assay (ELISA), Hantavirus cardiopulmonary syndrome (HCPS), Hemorrhagic fever with renal syndrome (HFRS), reverse transcription polymerase chain reaction (RT-PCR), severe acute respiratory illness (SARI)

Competing interests

None declared.

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