

## Hantavirus Outbreak on Cruiseship

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A hantavirus cluster aboard the Dutch-flagged cruise ship MV Hondius has resulted in eleven cases (eight laboratory-confirmed, three suspected) among 147 passengers and crew, including three fatalities. The vessel, which departed from Ushuaia, Argentina on April 1st 2026, towards an Atlantic tour, was quarantined off Cape Verde and subsequently docked in Tenerife (Spain), where passengers were evacuated and the situation is moving into an international phase of contact tracing and surveillance. Andes hantavirus has been reported to be the causal agent of confirmed cases. Hantaviruses are primarily rodent-borne zoonoses transmitted through aerosolized excreta. In the Americas, they cause HCPS with case fatality rates of 20-40%. Andes virus is the only species of hantavirus in which person-to-person transmission has been reported.

There is an ongoing epidemiological investigation to determine the location and source of infection of the index case, who boarded the cruise ship in Ushuaia on April 1, 2026, along with his wife after traveling for a month to various destinations in Argentina, Chile, and Uruguay. *Andes virus*, which is present in Chile and South Argentina, is unique among hantaviruses in its capacity for person-to-person transmission among close contacts. This has been documented in Chile and Argentina since 1996, and although uncommon, the largest reported outbreak involved 34 individuals, 11 deaths and control measures involved a whole town on quarantine for weeks. Andes virus person-to person transmission usually requires close, or intimate contact with an infected person, particularly during the incubation or early febrile/prodromal phase, when viral replication may occur before the immune response is fully developed. Sexual partners and caregivers are at higher risk, likely because they have more frequent close contact and potential exposure to contaminated body fluids.

For Andes virus specifically, prior studies have estimated incubation periods around 7–39 days, with a median of 18 days. Therefore, exposed contacts should avoid close contact with others during the observation period, immediately report fever or gastrointestinal symptoms, and be close to a health center with intensive care and the ability to perform veno-arterial ECMO.

The initial symptoms of hantavirus infection are nonspecific and difficult to distinguish from other infections. It is important that the infection is diagnosed early as this allows to anticipate the complications that it entails. We generally suspect hantavirus infection in people who live or have visited rural areas in endemic regions with potential exposure to wild rodents or who have had contact with a case of hantavirus and who experience fever, headache, muscular pain, abdominal pain, nausea and vomiting. Symptoms characteristic of respiratory infections such as nasal congestion, earache, odynophagia are not present, with the exception of cough.

The most useful blood test early in suspected hantavirus infection is a complete blood count (CBC), as patients show a decrease in platelet count early on. The specific diagnosis is made by measuring IgM and IgG antibodies against hantavirus; for this there are some rapid tests available, but the most reliable are the tests carried out in reference laboratories with the ELISA technique. More recently, a

molecular diagnostic test capable of directly detecting the virus, called RT-PCR, has been developed. This test detects the virus's genes, is performed on a blood sample, and has the advantage of detecting the virus even 15 days before symptoms begin. It remains positive throughout the acute phase of the disease, and the amount of virus present can be measured. This test can be very useful for people who have been exposed to rodents or have been in contact with a case. However, this test is not always available in health centers.

The initial symptoms are followed by a rapid development, within hours, of respiratory failure, manifesting as cough, shortness of breath, and a feeling of breathlessness with any physical exertion. Cardiovascular shock then develops. This rapid deterioration is the basis for the recommendation that patients be near a center with intensive care capacity and ECMO (extracorporeal membrane oxygenation). Thirty-five to forty percent of patients progress with mild respiratory failure, requiring only supplemental oxygen. Sixty - sixtyfive percent of patients develop severe respiratory failure and eventually cardiovascular shock, requiring mechanical ventilation and vasopressor support. Patients who do not respond to these measures are placed on ECMO. Overall, the infection has a 30-40% fatality rate. Currently, there is no specific antiviral treatment available.

For exposed individuals, including those who have been exposed to rodents or to a patient with Andes hantavirus, guidelines have not yet been developed on how to monitor for infection, nor are there preventive interventions with medications or biological products to control a potential infection. In areas where person-to-person transmission has occurred, isolation of infected individuals and quarantine of contacts have been recommended. Healthcare personnel caring for cases or contacts should observe respiratory precautions, using N95 masks and eye protection. Contact tracing and rapid medical evacuation of suspected cases to high-complexity centers with intensive care and ECMO capabilities are crucial.

In the outbreak related to the cruise ship MV Hondius that we are discussing, 10 cases of confirmed infection have been reported so far, with three fatalities. This outbreak should not be expected to become uncontrolled and appropriate epidemiological measures for control have been progressively implemented. The risk to the general public is currently assessed by WHO as very low. The main risk these days is for passengers and crew with close contact exposure. Person-to-person transmission of Andes virus is real but infrequent, generally estimated at a small proportion of cases, although superspreading events have been documented, including the Epuén outbreak in Argentina. The genomic sequence of the virus infecting some cruise ship patients has been obtained; the analysis of these genomes confirms that it is the Andes hantavirus and its sequence is very similar to that of the viruses circulating in the southern cone of America, it is not a new variant and there is no evidence that it has mutations that make it more easily transmitted between humans or that it has greater severity.

This outbreak has caused a high impact and surprise due to the surrounding circumstances: the occurrence of a cluster of cases of a serious illness in travelers in a closed environment with limited knowledge of passenger itineraries, limited diagnostic capacity, and little timely access to highly complex healthcare centers. The most important thing is not to generate unnecessary alarm in the population and to focus on the main priorities, which are providing adequate care to patients who present symptoms, rapid recognition of prodromal illness, strict monitoring of contacts (including those who disembarked before the characteristics of this outbreak were known) and quarantine

according to local guidelines in each country, early RT-PCR testing in blood when available and transfer of suspected cases to centers with ECMO capacity.

References:

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