

11 hantavirus deaths in Argentina were a warning

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About a year before the covid-19 pandemic, in the small village of Epuyén in southern Argentina, the challenges of stopping a deadly [virus outbreak](#) were clear.

A [68-year-old man](#) who had a fever attended a birthday party on Nov. 3, 2018, with around 100 guests. Five people who sat close to the man reported feeling sick roughly two to three weeks later. One of those five died 16 days after his symptoms appeared, infecting six others in the process. His wife, who had signs of a fever, attended his wake. Ten other people who were in close contact with the widow at the service became ill.

Health officials confirmed that the Andes hantavirus, which can transmit between people and causes a potentially fatal syndrome that attacks the heart and lungs, was responsible for the outbreak. The 68-year-old man was patient No. 1; in all, there were 34 confirmed infections and 11 deaths in Argentina's Chubut province over the next few months.

The more recent [Andes hantavirus outbreak](#) on the Hondius cruise ship has seized international attention after three passengers died, and multiple human cases were reported within days.

The Andes hantavirus is difficult to contain. In addition to spreading between people by direct contact, it can transmit via droplets or aerosols, which can lead to superspreading as seen in the 2018 outbreak. Additionally, the virus typically does not cause symptoms for multiple weeks after exposure. Once symptoms emerge, they are

not unusual enough to point toward a specific virus. The passenger with the first case of hantavirus on the Hondius developed [a fever, headache and mild diarrhea](#) on April 6 and died of respiratory failure five days later. This is a dangerous window when the virus can circulate — symptoms are mild enough that someone could move around and socialize without realizing what they have. Many passengers left the ship before the outbreak was detected and have since traveled to their home countries, meaning there will be varying degrees of disease monitoring by public health authorities.

The Hondius is a warning sign of where the world's pandemic prevention system still has weaknesses. Though there is no way to avoid outbreaks, proactive approaches could reduce risk.

Disease prevention systems for travel such as cruises rely on symptom screening before boarding. Passengers are asked if they have any fever, chills, diarrhea or cough. The first Hondius case involved a man who may have contracted the disease before the cruise while [traveling through parts of Argentina](#) that have had outbreaks of the Andes hantavirus. He did not have symptoms when he boarded the ship.

This was also true in 2014, when the United States had its first Ebola virus case, illustrating how passenger health screening can be insufficient. Thomas Eric Duncan [had no symptoms](#) when he boarded a flight from Liberia. He also did not disclose exposure to Ebola. He was initially misdiagnosed at a hospital in Dallas, where [he eventually died](#) after exposing and [infecting two nurses](#), one of whom [boarded a commercial flight](#) and unknowingly exposed many more people.

Hantavirus is transmitted through the feces or urine of rodents — the [long-tailed pygmy rice rat](#) in the case of Andes virus. [In Yosemite National Park in 2012](#), three campers died after probably inhaling aerosolized virus particles from rodent droppings insulated inside the walls of a cabin.

More detailed predeparture screening could help shipboard doctors diagnose sick patients better. If authorities knew that the first person who brought the virus onto the Hondius had not only traveled in Argentina, but had visited rural areas known to have hantavirus, then a diagnosis of the Andes virus could have been made more quickly.

However, this approach is only as foolproof as the people who are reporting their exposures. Sometimes they may not know they were exposed, or they may not disclose it. Certain travelers should have more targeted screening, including tourists, researchers or others participating in activities with close animal contact.

Other solutions include employing broader diagnostics more quickly, such as metagenomic sequencing, which can identify a pathogen without any prior information, or polymerase chain reaction (PCR) tests that can screen passengers for multiple pathogens at once on cruise ships. Still, with rare infections such as hantavirus, the cost of having an on-site diagnostic may be prohibitive for widespread use. For many of these deadly viruses, testing needs to be done in biosafety conditions that are not present on ships. Rapid antigen tests, such as those used for covid, could be helpful, but they are not particularly accurate for many infections and don't exist for others. Increasing federal and private investment in developing accurate point-of-care diagnostics for faster detection of pandemic-prone pathogens can help curtail outbreaks such as this one.

We may need to accept that pathogens will occasionally slip through borders and boarding gates. Though every outbreak cannot be prevented, the systems designed to prevent the spread of destructive viruses should be improved.