

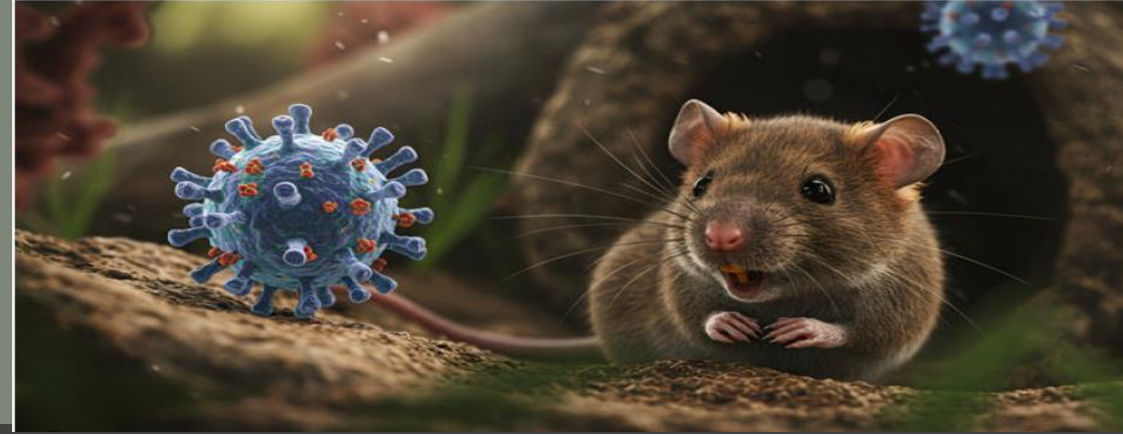
Hanta Viruses



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Hanta Viruses



Treatment and clinical management

Prevention and control



Treatment and clinical management

There is currently **no** universally licensed **specific antiviral** treatment for hantavirus disease . Management remains primarily **supportive** .



Key components include:

- early recognition and referral
- oxygen therapy
- hemodynamic monitoring
- mechanical ventilation where necessary
- renal replacement therapy for severe HFRS
- intensive care management for severe HCPS





Some studies have evaluated **intravenous ribavirin** for HFRS caused by Hantaan virus, with evidence suggesting potential **benefit** when administered early .

However, **evidence** for effectiveness in HCPS remains **limited** and inconsistent .

Early intensive supportive care substantially improves survival outcomes, particularly for HCPS patients .

Vaccines and vaccine development

At present, there is **no** WHO-prequalified or globally licensed **hantavirus vaccine** for widespread international use . However, several countries have developed region-specific vaccines.

Existing vaccines

China and the Republic of **Korea** have used inactivated vaccines against Hantaan and Seoul viruses

for several decades, particularly among **military personnel** and **high-risk populations** .

Evidence suggests these vaccines have contributed to **reductions in disease incidence** in endemic

regions, although **long-term effectiveness** and **duration of immunity** vary .



Vaccines and vaccine development



Vaccine research pipeline

Research efforts are ongoing for [recombinant protein vaccines](#), [DNA vaccines](#), [viral vector vaccines](#), and [mRNA-based vaccine](#) platforms .

Several vaccine candidates targeting both Old World and New World hantaviruses are under development, though none have yet achieved broad regulatory approval for global deployment .

Challenges to vaccine development

Major barriers include [geographic diversity of hantavirus strains](#), limited commercial market

[incentives](#), [sporadic outbreak patterns](#), [insufficient clinical trial data](#), and [biosafety constraints in research settings](#) .

Transmission

Transmission to humans occurs primarily through **inhalation of aerosolized particles contaminated with rodent excreta**. Infection may also occur through **direct contact with contaminated materials**, rodent **bites**, or **contamination of mucous membranes**.

High-risk exposures include:

- **cleaning rodent-infested enclosed spaces**
- **farming** and **grain storage** activities
- **forestry** and **military activities**
- **occupational exposure** in rural settings
- **poor housing** and **sanitation conditions**
- **sleeping in rodent-infested dwellings** .

Human-to-human transmission has only been conclusively documented for **Andes virus** and appears to require **prolonged close contact**, particularly during the prodromal phase of illness



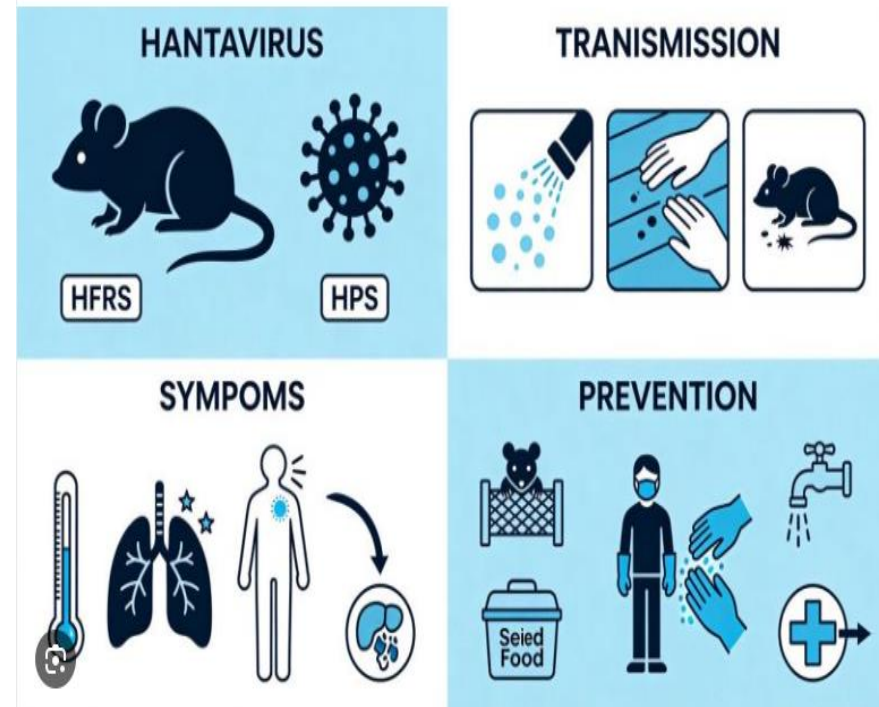
Prevention and control

Prevention measures should also cover **occupational risks** and those related to **ecotourism**. Almost **all classic tourist activities** carry **little** or **no risk** of **exposure of travelers to rodents or their excreta**



However, people who engage in **outdoor activities**, such as **campers** or **hikers**, should take precautions to reduce the chance of exposure to potentially infectious materials.

In this sense, it is important that the authorities inform the people who will carry out these activities about the risks and prevention measures



IPC guidance for the cruise ship

In the current situation, **passengers and crew** should practice usual enhanced **precautions** and vigilant **symptom monitoring**.

-**Frequent handwashing**: Handwashing is particularly important **after contact** with people or shared surfaces, before and after handling food, and **after toileting**. **Alcohol-based hand rub (>70% ethanol or isopropanol)** can be used, but **soap and water should be used if hands are visibly soiled**.

-**Respiratory etiquette**: Cover the mouth and nose when coughing or sneezing, avoid coughing or sneezing directly into hands, dispose of tissues immediately after use, and wash hands afterwards



- **Routine masking:** **Passengers** and **crew** should be encouraged to **wear facemasks** when **outside of their rooms/sleeping** quarters. If available, type IIR medical/surgical facemasks should be used, and instructions for proper facemask fitting and wearing practices should be shared

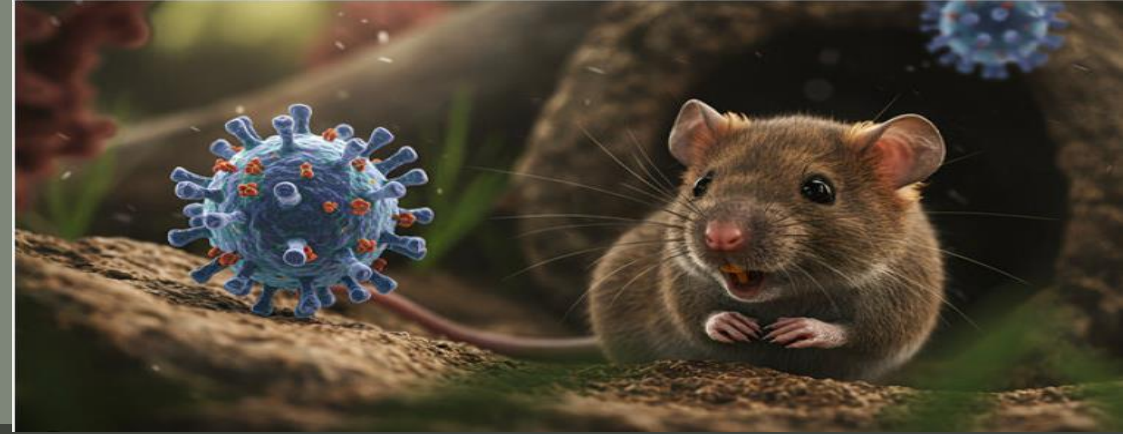


- **Physical distancing:** **Passengers** and **crew** should aim to maintain distances of **1–2 metres between each** other when possible

-**Symptom monitoring:** If **respiratory**, **gastrointestinal**, or **flu-like symptoms** develop, immediately **self-isolate** away from others and seek **medical care**. Symptoms to watch for include **headache**, **cough**, **abdominal pain** or **nausea**, **fever**, **chills**, **muscle aches**, or **chest tightness**.



Environmental cleaning and disinfection



Areas frequented by passengers and staff, and in particular frequently **touched surfaces** such as **door handles, screens and railing**, should be **cleaned regularly**.

Hantaviruses are readily **inactivated** by household and healthcare disinfectants including **bleach (0.5% sodium hypochlorite), 70% ethanol or isopropanol, or 2% glutaraldehyde**.

Direct exposure to **UV light (sunlight)** is also a strong **inactivator** of hantavirus

- Consider **opening windows** as feasible, allowing for **natural ventilation**.
- **Avoid dry sweeping** to limit spread of potentially infectious particles.
- Use disposable **gloves** when cleaning.
- Ensure **surfaces are visibly wet with disinfectant** for the entire 'wet time' as recommended on the cleaning product label before wiping.



IPC guidance for healthcare settings caring for symptomatic individuals associated with the cruise ship:

Patient placement:

Single rooms should be used for **each patient** if possible.

If single rooms are **not possible**, patients should be **separated by a barrier**.

If **multiple patients** are diagnosed with the same infectious pathogen, they can be **cohorted to the same area**. The door does not need to be closed

Personal protective equipment during medical care:



Use **droplet precautions** in addition to **standard precautions**, due to the potential for human-to-human transmission for ANDV.

- **Standard precautions**: hand hygiene before/during/after care, gloves for contact with body fluids, gown if contact with secretions is anticipated, and eye protection if splashing/sprays are anticipated.

- **Droplet precautions**: **surgical/medical mask** in the patient's room, **masking the patient during transport** if feasible.

- **For medical procedures that could potentially aerosolise respiratory droplets**, consideration should be given to using enhanced **airborne and contact precautions**, or elements thereof: **an FFP2 respirator**, **eye protection**, **gloves** and a **long-sleeved gown**.



Environmental cleaning and disinfection

of patient areas should follow the cleaning guidance for general ship areas above. **Body fluids should be considered potentially infectious** and **require at least five minutes of wet time.**

- **Limit transport of the patient to essential purposes only.** If possible, the **patient** should **wear a surgical mask during transport.**
- Vigilant **symptom monitoring** should be conducted for the **health professionals** involved in the care of these patients.

Thank you

