Hantaviruses can cause several types of diseases. Those of most concern to travelers are hemorrhagic fever with renal syndrome (HFRS) and hantavirus pulmonary syndrome (HPS), an acute cardiopulmonary illness with a high mortality rate that occurs in the Americas.

More than 21 hantaviruses have been identified worldwide, some associated with local epidemics. In the Americas, a number of new hantaviruses have emerged since 1993, when an outbreak occurred among Native Americans in the Four Corners region (the point where Colorado, New Mexico, Arizona, and Utah meet).

The most common means of transmission in humans seems to be through inhalation of aerosols of contaminated rodent urine (and possibly feces). A few instances of transmission through rodent bites have been reported, usually in enclosed spaces such as grain silos. Person-to-person transmission appears to be rare.

Hantaviruses are found worldwide.

- Since 1993, more than 2,000 cases of HPS have occurred in the Americas, including 585 cases from the U.S. by the end of 2012. In the Americas, Brazil has the highest annual hantavirus incidence.
- Worldwide, China bears the highest annual incidence of hantavirus disease. Up to 20,000 HFRS cases are reported every year in China, and thousands more cases may occur in Russia.
- In Europe, more than 35,000 total cases of HFRS were reported by the end of 2006, predominantly from Finland, but also Sweden, Belgium, France, Germany, and Norway.

The main risk factor is exposure to rodents and their excreta.

- Activities associated with heavier exposure include agricultural work, camping, trekking, sleeping on the ground, staying in rodent-infested cabins, and military exercises.
- Indoor exposure also occurs, particularly during times of high rodent populations with declining food availability, when rodents invade human dwellings more often.
- Many HPS cases have been associated with spring cleaning of holiday cabins contaminated with mouse droppings over the winter months.

Although adventure travelers can sometimes find themselves in any of the above situations, the risk for these persons seems to be small.

- Cases have occurred in visitors to Yosemite National Park, California.
- Rare cases of imported HPS and HFRS have been reported in travelers, with exposures in Bolivia and Cuba.
After an incubation period of 4-30 days, **HPS** usually begins with a sudden onset of fever, headache, muscle aches, nausea, and vomiting. Cough, shortness of breath, and rapid breathing may develop, resulting in respiratory failure and shock.

**HFRS** begins like HPS, although sometimes a rash and flushing of the face and torso can occur. As the disease progresses, it can cause renal failure.

**PREVENTION**

Avoid contact with rodents in the wild and, when appropriate, taking measures to eradicate domestic rodent populations from human habitations.

When visiting endemic countries, it may be useful to check for local hantavirus activity at the destination; if active infection is being reported, it may be wise to limit outdoor activities and avoid staying in substandard facilities.

**NEED FOR MEDICAL ASSISTANCE**

Individuals with severe forms of HPS should seek immediate medical care. Even persons with mild symptoms who suspect they have been exposed to hantavirus should seek prompt medical attention, since the illness can deteriorate very rapidly.

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