

## **Hantavirus Fact Sheet**

1. **What is Hantavirus pulmonary syndrome (HPS)?** - Hantavirus pulmonary syndrome (HPS) is a severe, often fatal respiratory disease caused by Hantaviruses. Rodents harbor the virus, which is shed in their urine, droppings, or saliva. Humans can contract the disease if they breathe in the virus, or if they are bitten by an infected rodent. HPS has a mortality rate of 38%.

2. **Who is at risk of contracting HPS?** - Anyone who comes into contact with infected rodents or their contaminated excreta is at risk of acquiring HPS. Rodent infestation in and around the home remains the primary risk for Hantavirus exposure. Even healthy individuals are at risk for HPS infection if exposed to the virus.

3. **Which rodents are known to be carriers of Hantavirus that cause HPS in humans?** - In the United States, deer mice, cotton and rice rats (in the Southeast), and the white-footed mouse (in the Northeast), are the known rodent carriers of Hantaviruses causing HPS. Most HPS has occurred in the western states where the deer mouse is common.

**How is HPS transmitted?** - Hantavirus is transmitted by infected rodents through urine, droppings, or saliva. Individuals are exposed to the virus by breathing air borne urine, droppings, saliva, or nesting materials. Transmission can also occur when these materials are directly introduced into broken skin, the nose or the mouth. Researchers suspect people can become sick if they eat food that is contaminated with urine, droppings, or saliva from infected rodents. If a rodent with the virus bites someone, the virus may be spread to that person, but this type of transmission is rare.

4. **Can you contract HPS from another person?** - HPS in the United States has not been shown to be transmitted from one person to another. You cannot get the virus from touching or kissing a person who has HPS or from a health care worker who has treated someone with the disease.

5. **Can you contract HPS from other animals?** - Hantaviruses that cause HPS in the United States are only known to be transmitted by certain species of rodents. HPS is not known to be transmitted by farm animals, dogs, or cats or from rodents purchased from a pet store. Please be aware that while these pets are not known to carry hantaviruses, dogs and cats may bring captured infected rodents into the home or yard.

**6. What are the symptoms of HPS?** – The incubation period for HPS can vary from a few days to several weeks. Early symptoms include fever, fatigue, and muscle aches, particularly large muscle aches in the thighs, hips, back and even the shoulder. Other manifestations of HPS can include headache, dizziness, chills and gastro-intestinal problems like nausea, vomiting, diarrhea, and abdominal pain. A dry cough can also occur. After this early phase, patients become severely short of breath because their lungs fill with fluid. The heart is also affected. This condition is known as Acute Respiratory Distress Syndrome (ARDS) and often requires mechanical ventilation. It can also lead to multi-organ failure, including the kidneys, and is associated with high mortality. However, if the patient can be successfully supported through this phase, recovery can be quite rapid with no long-term consequences.

**7. Can HPS be treated?** – There is no specific treatment for HPS other than supportive care. Individuals who contract HPS and experience respiratory distress may benefit from intubation and oxygen therapy. Early recognition and treatment produce the best patient outcomes.

**8. How long can Hantavirus remain infectious in the environment?** - The length of time Hantaviruses can remain infectious in the environment is variable and depends on conditions, such as temperature and humidity, whether the virus is indoors or outdoors or exposed to the sun, and even on the rodent's diet (which would affect the chemistry of its urine). Survival of the virus for 2 or 3 days has been shown at normal room temperature. Exposure to sunlight will decrease the time of viability, and freezing temperatures will actually increase the time that the virus survives. Since the survival of infectious virus is measured in terms of hours or days, only active infestations of infected rodents result in conditions that are likely to lead to human Hantavirus infection.

**9. How do I prevent HPS?**

- a. Ventilate the space by opening windows and doors for at least 30 minutes before starting cleanup to allow fresh air to enter the space.
- b. Seal up rodent entry holes or gaps with steel wool, lath metal, or caulk.
- c. Trap rats and mice around the home and out-buildings by using an appropriate snap trap.
- d. Clean up rodent food sources and nesting sites and take precautions when cleaning rodent-infested areas.

**10. What are the recommendations for cleaning a rodent-infested area?**

- a. Put on rubber, latex, vinyl or nitrile gloves.
- b. Do not stir up dust by vacuuming, sweeping, or any other means.

- c. Thoroughly wet contaminated areas with a bleach solution or household disinfectant. (Hypochlorite (bleach) solution: Mix 1 and ½ cups of household bleach in 1 gallon of water.) (CDC recommends 1 part bleach to 10 parts water).
- d. Once everything is wet, take up contaminated materials with damp towel and then mop or sponge the area with bleach solution or household disinfectant.
- e. Spray dead rodents with disinfectant and then double-bag along with all cleaning materials. Bury, burn, or throw out rodent in appropriate waste disposal system.
- f. Disinfect gloves with disinfectant or soap and water before taking them off.
- g. After taking off the clean gloves, thoroughly wash hands with soap and water (or use a waterless alcohol-based hand rub when soap is not available).

**11. Can I use a vacuum with HEPA filter to clean up rodent-contaminated areas?** HEPA vacuums are not recommended since they blow air around and may create aerosols.

**12. How do I clean papers, books, and delicate items?** - Books, papers, and other items that cannot be cleaned with a liquid disinfectant or thrown away should be left outdoors in the sunlight for several hours or in an indoor area free of rodents for approximately 1 week before final cleaning. After that time, the virus should no longer be infectious. Wear rubber, latex, or vinyl gloves and wipe the items with a cloth moistened with disinfectant.

**13. I do not want to bleach my clothes or stuffed animals; is there anything else I can do?** - Wash clothing or stuffed animals in the washing machine using hot water and regular detergent. Laundry detergent can break down the virus's fatty envelope, rendering it harmless. Machine dry laundry on a high setting or hang it to air dry in the sun. It is not recommended to simply run the clothing through the dryer without washing first.

**14. How do I clean rugs, carpets and upholstered furniture?** - Disinfect carpets and upholstered furniture with a disinfectant or with a commercial-grade steam cleaner or shampoo.

**15. What precautions should I take if I think I have been exposed to Hantavirus?** - If you have been exposed to rodents or rodent infestations and have symptoms of fever, deep muscle aches, and severe shortness of breath, see your doctor immediately. Inform your doctor of possible rodent exposure so that he/she is alerted to the possibility of rodent-borne diseases, such as HPS.

**16. For more information about Hantavirus:**

<http://www.cdc.gov/hantavirus/hps/>

This fact sheet provides general information. Please contact your physician and/or veterinarian for specific clinical information related to you or your animal.

February 4, 2013