



Hantavirus Pulmonary Syndrome

What do you need to know to prevent the disease



The Center for Disease Control recently issued an alert to the public about hantavirus pulmonary syndrome. Activities by some Air Quality employees who visit ambient monitoring sites may place themselves in situations for possible exposure to the hantavirus. Below is a brief that describes hantavirus and precautions to take.

What is Hantavirus Pulmonary Syndrome (HPS)

Small but deadly, Hantavirus Pulmonary Syndrome, or HPS, has been recognized as a disease only recently. So far, it's also fairly uncommon and the chances of becoming infected are low. However, HPS is potentially deadly and immediate intensive care is essential once symptoms appear. To date there has been only one hantavirus case reported in the state of North Carolina.

Hantaviruses that cause HPS are carried by rodents. You can become infected by exposure to their droppings, and the first signs of sickness (especially fever and muscle aches) appear 1 to 5 weeks later, followed by shortness of breath and coughing. Once this phase begins, the disease progresses rapidly, necessitating hospitalization and often ventilation within 24 hours. HPS is not contagious from person to person.

What Are the Symptoms of Hantavirus Pulmonary Syndrome

Early symptoms include fatigue, fever and muscle aches, especially the large muscle groups thighs, hips, back, sometimes shoulders. These symptoms are universal. There may also be headaches, dizziness, chills and/or abdominal problems, such as nausea, vomiting, diarrhea and abdominal pain. About half of all HPS patients experience these symptoms.

How long could it be between the time you get the virus, and the time you start showing these symptoms? Because there have been so few cases of HPS, it isn't quite clear what this "incubation time" is. However, on the basis of limited information, it appears that symptoms may develop between 1 and 5 weeks after exposure to potentially infected rodents and their droppings.

How is Hantavirus Transmitted

It all starts with rodents, like the deer mouse and cotton rat, which carry hantaviruses. Some rodents are infected with a type of hantavirus that causes HPS. Deer mice (also cotton rats and rice rats in the southeastern states and the white-footed mouse in the Northeast) are the rodents carrying hantaviruses that cause hantavirus pulmonary syndrome. These rodents shed the virus in their urine, droppings and saliva. The virus is mainly transmitted to people when they breathe in air contaminated with the virus. This happens when fresh rodent urine, droppings or nesting materials are stirred up. Employees who visit ambient monitoring sites and perform work activities may have potential for exposure to rodent droppings.

There are several other ways rodents may spread hantavirus to people:

- If a rodent with the virus bites someone, the virus may be spread to that person but this is very rare.
- If you touch something that has been contaminated with rodent urine, droppings or saliva, and then touch your nose or mouth.
- If virus-infected rodent urine, droppings or saliva contaminates food that you eat, you could also become sick.

These possibilities demonstrate why disinfecting rodent-infested areas is so important in preventing transmission of the virus.

Transmission can happen any place that infected rodents have infested. (Remember, by "carrier rodent" we mean deer mice plus cotton rats and rice rats in the Southeast, and the white-footed mouse in the Northeast. Common house mice do not carry hantavirus.) This could be barns or sheds or other outbuildings, warehouses or summer cottages closed up for the season.

What Kind of Activities Are Risky

Anything that puts you in contact with rodent droppings, urine or nesting materials can place you at risk for infection. These include such activities as opening up cabins and sheds or cleaning outbuildings that have been closed during the winter such as barns, garages or storage facilities for farm and construction equipment. Both activities mean you may directly touch rodents or their droppings and/or "stir up the dust," and when you touch or inhale them, you're at risk for infection. Some ambient monitoring sites may present similar conditions as described above.

Overall, the chance of being exposed to hantavirus is greatest when people work, play or live in closed spaces where rodents are actively living. However, recent research results show that many people who have become ill with HPS got the disease after having been in frequent contact with rodents and/or their droppings for some time. In addition, many people who have become ill reported that they had not seen rodents or their droppings at all. Therefore, if you live in an area where the carrier rodents such as the deer mouse are known to live, take sensible precautions before you do activities like those described above even if you don't see any rodents or their droppings.

What is the Treatment for Hantavirus Pulmonary Syndrome

So far, there is no specific medicine or treatment available that will cure the hantavirus pulmonary syndrome, but the best treatment has been early detection and hospital care. The Center for Disease Control recommends specific rodent prevention precautions in order to minimize your chances of getting the disease.

What are the Safety Precautions

The most sensible way to avoid contact with rodents is to prevent rodents from infesting the places where you live and work, and to follow safety precautions if you do stumble into a rodent-infested area. Safe disposal of rodents and proper cleaning and disinfection of rodent-inhabited areas are keys to minimizing exposure to the hantavirus.

The Center for Disease Control specifically recommends following these steps for safe disposal and clean-up of dead rodents and/or rodent dropping:

- Wear rubber gloves.
- Thoroughly spray dead rodents, traps, droppings, and contaminated areas with a general household disinfectant. Also, if you find mouse droppings inside, DO NOT sweep or vacuum them until you have wet the affected areas with disinfectant, since these activities might put virus-laden dust into the air.
- Place disinfectant-soaked rodents into a plastic bag and seal it. Then place it into a second plastic bag and seal. If possible, burn or bury the bag or contact your local or state health department about other appropriate disposal methods.
- Disinfect floors, countertops and other surfaces with a general household disinfectant.
- Before removing the gloves, wash gloved hands in disinfectant, and then in soap and water. Thoroughly wash hands with soap and water after removing the gloves.
- Disinfect all used traps, and then set them again or replace them.
- Eliminate possible rodent nesting sites such as junk cars, old tires and trash piles. Do not leave animal food and water in feeding dishes overnight, and keep all food in rodent-proof containers. Cut grass, brush and dense shrubbery within the immediate area of buildings.

Remember to keep an eye out for signs of rodents and to use the precaution measures listed above.

Resources: <http://www.cdc.gov/ncidod/diseases/hanta/hps/index.htm>