

ILLINOIS DEPARTMENT OF PUBLIC HEALTH



HANTAVIRUSES

What are hantaviruses?

Hantaviruses are a group of viruses found in wild rodents. While they do not produce disease in these rodent hosts, hantaviruses can cause illness in humans. The viruses are so named because they were first isolated in the laboratory from striped field mice captured near Korea's Hantaan River. For many years, hantaviruses have been known to cause illnesses in other areas of the world (Europe and Asia). In 1993, a previously unknown species of the virus, which causes an illness different from other known hantavirus infections, was identified in the southwestern United States. Since that outbreak, the virus has been identified in more than half the states in the U. S. One case and death due to hantavirus was reported in Illinois 1996 and another case reported in 2005 survived.

How is a person infected with a hantavirus?

Humans contract a hantavirus infection by breathing dust contaminated by the urine, saliva or feces of an infected rodent. Infection also may occur if contaminated material or dust gets into broken skin or a mucous membrane, such as the eye. Ingesting food or water tainted by an infected rodent may cause illness, too. Hantaviruses also can be transmitted by the bite of an infected rodent. Person-to-person transmission has not been demonstrated in the United States.

What are the symptoms?

The most recently identified hantavirus can affect the lungs, so the illness has been named hantavirus pulmonary syndrome, or HPS. Some types of pneumonia and common respiratory viruses (like [influenza virus](#)) can mimic the early symptoms of this hantavirus but, fortunately, HPS is rare. Symptoms, which may develop between five and 42 days after exposure to the virus, include fever, headache, stomach pain, muscle aches, cough, and nausea and/or vomiting. If a person experiences flu-like symptoms followed by shortness of breath, he or she should contact a physician.

Who is most likely to get HPS?

Cases are most likely to occur in rural areas where the deer mouse, which appears to be the main source of the virus in the United States, primarily lives. Buildings, barns, garages, areas where rubbish or wood piles exist, or similar locations can serve as potential settings of hantavirus infection if such sites are inhabited by infected rodents and conditions favorable for transmission (dry, dusty areas contaminated with

rodent excreta) exist. Keeping [homes](#) and buildings rodent-free is a primary prevention measure against this group of viruses.

One death due to hantavirus was reported in Illinois in 1996.

Is there a treatment for HPS?

HPS can be a serious, life-threatening illness. Treatment with ribavirin, a drug used with other hantaviruses, is being studied but presently it has not been proven to be effective. Supportive care for patients with HPS is given in an intensive care unit where fluids and blood pressure are maintained and mechanical ventilation with oxygen may be necessary.

What can I do to prevent rodent infestation in a home or building?

To keep rodents out of a building, you must create an environment that does not attract them. Deny rodents food, water, nesting sites and entry to the building:

Reduce the availability of food and water. Keep your kitchen clean. Store human and pet food in tightly closed containers. Keep food scraps and garbage in rodent-proof metal or thick [plastic containers](#) with tight-fitting lids. Store bulk animal food at least 100 feet from the home in containers with tight-fitting lids. Do not allow pet or animal food to sit out. Repair leaky faucets that may provide water to rodents.

Eliminate nesting sites near the building. Keep your lawn mowed; tall grass and weeds make an excellent habitat for rodents. When possible, follow the "100 foot rule": plant gardens and place wood piles, compost heaps, feed bins and trash cans at least 100 feet from the home. Wood piles should be at least 12 inches off the ground. Haul away trash, abandoned vehicles, discarded tires and other items that could serve as rodent nesting sites. Place 3 inches of gravel under the base of mobile homes to discourage burrowing by rodents.

Seal the building. Identify all possible sites of rodent entry. A mouse can fit through a hole slightly larger than 1/4 inch. Use steel screen, sheet metal, galvanized hardware cloth, caulk or weather stripping to seal holes or gaps along the edges of windows and entry doors and garage doors. Check places where pipes and electrical wiring enter the house and seal openings with steel wool.

If I have a rodent problem in my home, what can I do to eliminate the infestation?

Should I set out traps?

First, remove the three things required for survival: food, water and places to hide and nest. Second, if rodents are present, set out snap-traps, not cage traps, and be sure to follow the manufacturer's recommendations. (Peanut butter mixed with oats is an excellent bait.) Continue trapping for at least two days after the last rodent is trapped. Third, maintain a rodent-free building by correcting conditions that attract rodents. **Trapping is useless if the procedures to prevent reinfestation are not followed.**

"Building-out" rodents and trapping are the most effective control methods.

Rodenticides should be used **only** to supplement these methods. If one chooses to use a commercially available rodenticide, make sure it is registered with the U.S. Environmental Protection Agency and always follow instructions for product use. If the rodenticide is to be used indoors, be sure it is labeled specifically for interior use. All rodenticides carry warnings that they be placed in tamper-proof bait boxes or in locations not accessible to children, pets and other domestic animals and wildlife. Fleas or mites, which can be a problem if there is a large infestation of rodents, are best controlled with an insecticide appropriately labeled for flea or mite control. If a structure is heavily infested with rodents, however, consult your local or state health department before attempting to control them.

What should I do if I find a trapped, poisoned or dead rodent in my house or barn?

Always wear intact rubber or plastic gloves when removing dead rodents and when cleaning or disinfecting items or areas contaminated by rodents. Soak or spray dead rodents with a disinfecting solution (see disinfecting information that follows) until thoroughly wet and place in a plastic bag. The bag should then be placed in a second bag and tightly sealed. Dispose of rodents in trash containers with tight-fitting lids or by incineration. After handling rodents, resetting traps and cleaning contaminated objects or areas, thoroughly wash gloved hands in a general household disinfectant or in soap and hot water. Then remove gloves and thoroughly wash your hands with soap and warm water.

What type of disinfectant should I use?

The hantavirus is destroyed by detergents and readily available disinfectants such as diluted household bleach or products containing phenol (e.g., Lysol®). Choose an agent that is compatible with the item, object or area to be cleaned and disinfected.

- For disinfecting surfaces that are relatively clean and free of organic debris: A bleach/water solution (at least 3 tablespoons household bleach per gallon of water) destroys the virus when the item, object or area is thoroughly wetted with the solution during cleaning. For disinfecting dead rodents and areas contaminated with rodent droppings, urine and/or organic debris: Use a solution of 1.5 cups of bleach per gallon of water.
- Products containing phenol destroy the virus when the item, object or area is thoroughly wet or is saturated with the solution during cleaning and disinfection. If using a product containing phenol, be sure to follow label directions for use and recommended amounts.
- Detergent/water solutions destroy the virus when the item, object or area is thoroughly wet or is saturated **and** allowed a minimum of 5 to 10 minutes contact time with the solution. Follow label directions for product use and recommended amounts of laundry and dishwashing detergents. Detergent/water solutions may be helpful when the item, object or area requires removal of dirt.

Do not vacuum or sweep rodent-contaminated areas before cleaning, mopping or spraying with a disinfectant. This could cause virus particles in the dust to be spread into the air.

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