



Hantavirus Health Effects & Protection Guideline

CAGC INFORMATION ALERT

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Canadian Association of Geophysical Contractors
1045, 1015 - 4th Street SW Phone: 403 265 0045
Calgary, Alberta Fax: 403 265 0025
T2R 1J4 E-mail: info@cagc.ca

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The following guideline has been prepared for CAPP to provide employers and workers with information concerning risk of Hantavirus infection and recommended safe work practices.

What is Hantavirus

Hantavirus has existed for years, but has only recently been recognized in North America. Various species of rodents carry Hantavirus, but the primary carrier is the deer mouse (*peromyscus maniculatus*) or white-footed mouse. Deer mice are larger than other mice, pale grey or reddish brown in colour, have white feet and underbelly, and big ears and eyes. Other rodents such as field mice, moles, squirrels and rats may also harbor the virus, although this is much less common.

Hantavirus infection is rarely transmitted to humans but when it is, the virus can cause a serious lung disease known as Hantavirus Pulmonary Syndrome (HPS). The disease has a high fatality rate in the range of 40-77%.

Who is at Risk?

Risk of occupational exposure to Hantavirus can occur in any season, at any worksite, in rural and semirural locations and in any enclosed structure (e.g., sheds, farms, outbuildings, warehouses, field offices and other commercial buildings). The risk is high when numbers of mice increase and in areas where mice have lived during the winter. Outdoor workers, remote field workers and workers who may have incidental contact with mice or their droppings are at risk for exposure, as well as farmers, grain handlers, campers and hikers. Urban locations cannot be excluded.

Accumulations of mouse-droppings may occur in:

- Rubbish piles & garbage storage areas;
- Woodpiles and sawmill;
- Infrequently used equipment;
- Vacant buildings, inside walls or floor subspaces;
- Weeds and long grass

- Food storage containers;
- Nooks and crannies

How is Hantavirus Spread?

Not all deer mice are Hantavirus carriers but all carriers shed the virus in their saliva, urine and droppings. Since Hantavirus does not appear to cause any visible signs of illness in mice and since it is difficult to identify different types of mice, it is best to assume that all mice and their saliva and droppings are infectious.

Breathing in airborne dust particles or aerosolized droplets from infected rodent urine, feces or saliva is the most common way the virus is transmitted to humans. Workers who handle rodents may also become infected from bites or where the virus enters through broken skin or the membrane linings of the nose, eye or mouth. It may also be possible to acquire hantavirus infection if you eat food or drink water contaminated by rodents.

Be safe and treat all rodents with caution.

The virus can survive in dried saliva or excretions but it is not known how long it can survive in the environment. There is no evidence to suggest that Hantavirus can be spread from person to person, from cats and dogs or from insects and ticks, even if they are exposed.

What are the Symptoms of HPS?

Humans infected with Hantavirus have an initial flu-like illness, which may rapidly develop into a serious lung condition and acute respiratory distress. Early symptoms begin 1-6 weeks following exposure and may include fever, muscle aches (especially large muscle groups), cough, headaches, nausea, vomiting, diarrhea, or severe abdominal pain. As the disease progresses, fluid collects in the lungs and breathing becomes difficult.

Anyone who develops flu-like symptoms with shortness of breath and has recently been in an area contaminated by rodents should seek immediate medical attention.

There is no vaccine to prevent Hantavirus and no specific cure. However, supportive treatment in intensive care generally reduces the risk of death. Early recognition of the symptoms and hospital treatment is critical.

Prevention is the Key

Preventative measures are based on minimizing contact with rodents and adopting good hygiene practices. E.g.:

- Do not handle live rodents (especially in outdoor settings);
- Do not touch or disturb mouse nests or burrows;
- Do not vacuum, dry sweep or use an air hose to clean areas where droppings are present, until disinfected;

- Do not occupy rodent infested buildings until cleaned;
- Do not drink untreated surface water;
- Do not sleep in uncleaned cabins.

Develop a Worksite Control Program that may include:

- Building inspections to look for signs of rodents;
- Notice to workers regarding the risk of exposure;
- Elimination of rodent harborage & populations;
- Use of appropriate removal and clean-up methods;
- Use of appropriate personal protective equipment (PPE) around high-risk environments.

The following recommendations apply to worksites:

- Store food and water in sealed containers;
- Mouse-proof buildings to prevent entry. Seal holes larger than ¼ inch in diameter (e.g. steel wool, screens, or cement);
- Mouse-proof garbage cans with tight-fitting lids;
- Avoid creating dust and disinfect contaminated material before clean up to reduce chance that virus will get into the air;
 - Open doors and windows and vacate building for a minimum of 30 minutes;
 - Mix bleach and water (1:10) solution immediately prior to use (do not use bleach in the presence of oil);
 - Carefully wet down area with bleach solution;
 - Carefully wipe or wet-mop all surfaces with bleach solution
- Dispose of rodents and droppings in sealed bag and incinerate or place in garbage;
- Consider a pest exterminator for heavily infested areas;
- Procedure for clean-up includes:
 - Cover any areas of broken skin;
 - Wear rubber gloves, coveralls, goggles and rubber boots;
 - Wear a respirator with a high efficiency particulate filter (i.e. P100, N100 or R100);
 - Disinfect non-disposable clothes and gloves before removal;
 - Wash hands and face thoroughly with soap and water.