



Vancouver Island West School District 84
OCCUPATIONAL HEALTH & SAFETY PROGRAM

SECTION H

**HANTAVIRUS EXPOSURE CONTROL PROGRAM
MICE AND OTHER RODENTS**

INTRODUCTION

Mice and rats can be serious pests in School District 84 buildings. Reports of rodent sightings are most common during the winter and spring months when the animals are moving inside the buildings in search of warmth and food, and then nesting in the spring. Mice usually hide from people, and they can harbour pests such as fleas and Hantavirus, can leave unsanitary debris and can frighten people.

Purpose and Responsibilities

This Exposure Control Program has been prepared to help minimize employee exposure to Hantavirus, and is developed in accordance with Section 5.54 and Section 6.34 of the WSBC OH&S Regulations. It will be reviewed and updated as necessary by the employer, in consultation with the OH&S Committees/Safety Representatives.

Hantavirus Pulmonary Syndrome

This rare disease begins as a flu-like illness and in early stages, a worker may experience fever, sore muscles, headaches, nausea, vomiting, abdominal pain, and shortness of breath. As the disease progresses, fluid builds up in the lungs, making it difficult to breathe and severe respiratory failure, resulting in death, can occur within a few days of the early-stage symptoms. Symptoms may appear from 5-45 days (the average is 14-30 days) after exposure to the virus. To date, only deer mice have been systematically tested and found to carry the virus in BC; however, other rodents should not be ruled out as potential carriers.

Education and Training

Education and training will be provided to all custodians, maintenance staff and school administrators. All employees will be informed of the content of this program during staff meetings and/or OH&S meetings. All employees will have access to an electronic copy of the Exposure Control Program and Safe Work Procedures, as well as related information from WSBC. Hard copies will be posted in custodians' cupboards and in the maintenance shops. Employees will have the opportunity to request additional information and training, whenever necessary.

Risk Identification, Assessment and Control

a. Potential Hazards and Risks:

- Any employee who is working in an area where there is evidence of rodent activity could be at risk of exposure to mouse feces.
- If unknowingly, any open wounds could become infected.
- Disturbing the feces too much can cause particulate to be airborne.
- Equipment and personal protective equipment can become contaminated.
- Plastic bags with contaminated material could be punctured, spilling contents.

b. Identification of Employee Positions that Carry Out Tasks and Procedures Where There is Risk of Exposure:

- Any employee who has exposure to particles of infected saliva, urine and feces through inhalation, which can occur through direct contact with the rodent or from breathing airborne dust particles that are generated when rodent excreta is disturbed, could be at risk.
- There is increased risk of exposure present for any employees assigned to clean up rodent contaminated materials and/or rodent droppings.

c. Identification of Controls:

- vigilance for signs of rodent activity (i.e. droppings, rodent odours, urine stains, tracks, gnawing damage, burrows, runways, rodent sounds) and identifying, if possible, whether mice, voles or rats;
- reporting to the Operations Department at first signs of rodent activity;
- cleaning up rodent contaminated materials, feces and carcasses in accordance with written Safe Work Procedures;
- ensuring no food sources available to rodents; i.e. no open food left overnight, food is stored in rodent-proof containers, and no food stored in desks, cupboards or sinks overnight;
- no classroom animal food sources available (i.e. seeds);
- garbage taken out every night and containers stored away from the buildings;
- no classroom composters, and any composters stored away from buildings;
- weeds and long grass kept trimmed near buildings and no dense vegetation around the building foundation;
- openings larger than ¼ inch (around water pipes, air condition, vents, etc.) screened and/or sealed with steel wool, sheet metal or mortar;
- adequate door sweeps on exterior doors;
- exterior doors kept closed when not in use;
- any soft furnishings (fabric/stuffed couches or chairs) regularly inspected and any with signs of rodent activity discarded;
- snap traps installed, set and inspected daily until trap catches become infrequent;
- pesticide installed in bait stations by a commercial certified applicator, with prior notification given to Principal or designate;
- employees educated and/or refreshed on universal precautions.

Identification

1. House Mouse or Domestic House Mouse (Mus Musculus)

This is the most common mouse species to live inside buildings. The body shape is small and slender, 5-7.5 cm long, with a tail 7.5 to 10 cm long. It can survive a long time on food scraps, grains and little water. Droppings are rod-shaped. Home range is 3-10 meters. Mice prefer to travel along edges and usually avoid crossing open spaces.

2. Deer Mouse or White-Footed Deer Mouse (Peromyscus Maniculatus)

It is common in barns, cabins and outbuildings but is seldom seen inside of schools. It can carry the Hantavirus, which can cause a serious pulmonary ailment in humans. The body colour is dark on top but a distinctive white on the underside. The tail has fur (the house mouse has no fur on its tail) and is light-coloured underside. Deer mice tails are shorter than their body length.

3. Norway Rat

The Norway rat, also known as the brown, house, barn, sewer, or wharf rat, is a common rat species on Vancouver Island. It is dull brown in colour and measures, from nose to tail, about 325 mm to 450 mm (12 ½" to 17"), with small, close-set ears, blunt muzzles and very sharp teeth. It is a burrowing rat that will tend to run along buildings or fences.

4. Roof Rat or Black Rat (Rattus Rattus)

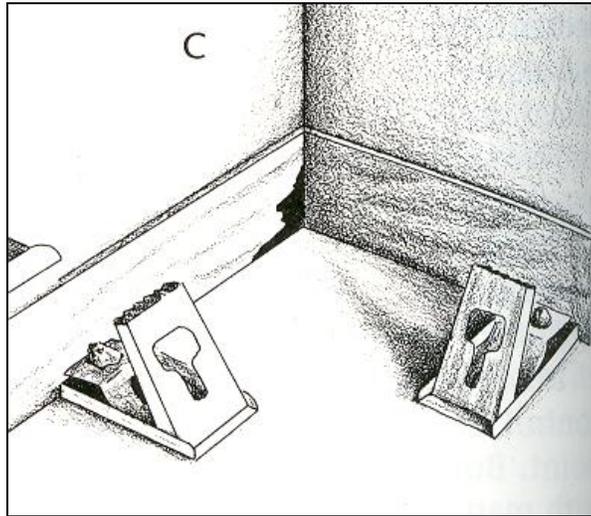
The roof rat is smaller than the Norway rat and is an excellent climber that usually nests in ceilings and attics. The body shape is sleek and graceful, 15-20 cm long, with a tail 15-25 cm long. Droppings are spindle-shaped. Home range is 30-50 meters. Rats feed on fresh plant material such as nuts and seeds, and require free water.



Above: House mouse – Note the pointed nose and overall grey colour.

Below: Deer mouse - Note the white underside with the distinct line between dark top and white bottom.

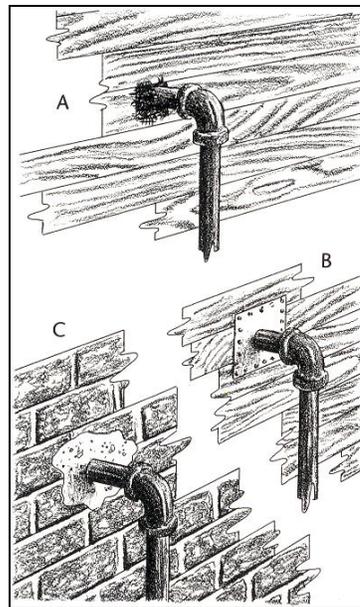
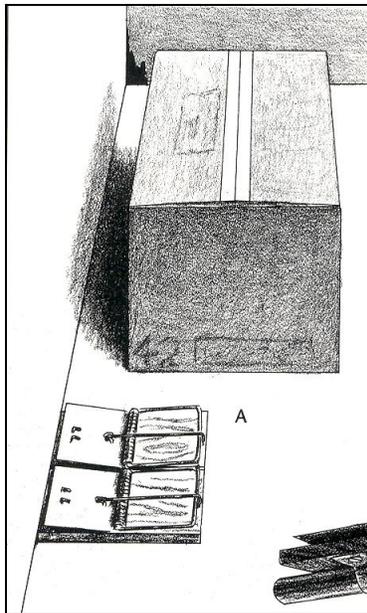




Above: Proper placement for trapping of mice. Handle with disposable gloves, bait with non-peanut butter or a dried raisin; use non-peanut butter to anchor. More than one trap per room, placed at a right angle with the wall, bait against the wall.

Below, Left: Proper placement for trapping of rats.

Below, Right: Exclusion practice to prevent entry of rodents into the building. Seal holes around pipes with coarse steel wool, sheet metal, or mortar.



All drawings from "Common Sense Pest Control", Pages 290 and 636.

For further information:

- British Columbia Publication for Persons Working in Structural Pest Control;
- BC Ministry of Environment, 1966 "Integrated Pest Management Manual for Structural Pests in British Columbia". Chapter 8 is on rodents. Available at <http://wlapwww.gov.bc.ca/epd/docs/tablcont.html>;
- Manual from the US Environmental Protection Agency for Pest Problems Near Schools: US Environmental Protection Agency, 1977 "Integrated Pest Management for Schools: A How-to Manual". Chapter 12 is on mice, available at the website <http://www.epa.gov/pesticides/ipm/schoolipm/>;
- Book on Least-Toxic Solutions for Pest Problems from a California Non-Profit Organization: Olkowski W., S. Daar, H. Olkowsky, 1991. "Common-Sense Pest Control" The Taunton Press, Newtown CT. Chapter 16 is on mice. Available at most libraries or on the website at <http://www.birc.org/pubrep.htm>.
- WorkSafe BC – A Hantavirus Exposure Control Program for Employers and Workers.
- Work Safe Alberta – Workplace Health and Safety Bulletin – Hantavirus: Information for Employers and Employees.

Vancouver Island West School District 84
OCCUPATIONAL HEALTH AND SAFETY PROGRAM

**SAFE WORK PROCEDURES FOR
CLEAN-UP OF MOUSE FECES, URINE AND CARCASSES**

How to Clean Up Small Quantities of Rodent-Contaminated Areas:

1. **Review this procedure** and gather all necessary supplies and personal protective equipment together.
2. Clear all unnecessary workers and public from the area.
3. **Do not vacuum**, as vacuuming could result in contaminants becoming airborne.
4. Cover any broken skin that may be exposed to infection, with an antibacterial solution such as Polysporin and a bandage.
5. Put on your disposable N95 respirator and your disposable gloves.
6. Ventilate the area by opening windows and doors leading to the outside, if possible.
7. Mix a disinfecting solution, as recommended by the manufacturer, for decontaminating and disinfecting the area – or a 10% bleach solution (one part bleach to 100 parts water).
8. Remove the carcasses from the snap traps and set snap traps aside.
9. Gently apply the solution to the rodent-infected material and surfaces, excreta, nesting materials, and carcasses to **dampen** (avoid using a stream of liquid as this may create aerosols) – and leave to somewhat dry.
10. Scoop up the material and dispose all contaminated material in double plastic bags, being careful to not puncture the bags. Seal the bags and label them to identify the contents. Dispose of them with the regular garbage.
11. Wipe or mop surfaces with a solution of disinfectant and detergent – using a mop and bucket that is specifically for the Hantavirus Control Program (i.e. not used for every day cleaning).
12. Sanitize all reusable equipment and return to tool kit.
13. Re-set the snap traps as required (non-peanut butter provided – will be in fridge if already opened).
14. Remove disposable respirator (face mask) and gloves and place in plastic bag, seal, label, and dispose in garbage.
15. Wash any exposed skin and wash hands.
16. Report signs of rodent activity to your Supervisor or the Operations Department.

How to Clean Up Where There is Evidence of Significant Rodent Activity:

1. **Review this procedure** and gather all necessary supplies and personal protective equipment together.
2. Inform your Supervisor and the Operations Department before cleaning up large amounts of rodent droppings or when handling materials significantly contaminated with rodent droppings.
3. Clear all unnecessary workers and public from the area, and isolate area (using ribbon or signs, etc.).
4. **Do not vacuum**, as vacuuming could result in contaminants becoming airborne.
5. Cover any broken skin that may be exposed to infection, with an antibacterial solution such as polysporin and a bandage.
6. Ventilate the area by opening windows and doors leading to the outside, if possible.
7. Put on a half-mask air-purifying respirator equipped with P100 filters or a powered air-purifying respirator (PAPR) with P100 filters.
8. Put on disposable gloves.
9. Put on disposable coveralls that are made of a material that will resist the penetration of dust particles and ensure a snug fit at the wrists and ankles.
10. Put on rubber boots or disposable shoe covers when footwear contamination is likely.
11. Put on eye or face protection (goggles without vent holes) to prevent aerosols from coming into contact with the mucous membranes of the eyes.
12. Mix a disinfecting solution, as recommended by the manufacturer, for decontaminating and disinfecting the area – or a 10% bleach solution (one part bleach to 100 parts water).
13. Remove the carcasses from the snap traps and set snap traps aside.
14. Gently apply the disinfectant solution to **dampen** the rodent-infected material and surfaces, excreta, nesting materials, and soak carcasses (avoid using a stream of liquid as this may create aerosols). Use the same disinfectant solution to decontaminate your boots.
15. Vacuum with a vacuum cleaner equipped with a High Efficiency Particulate Air (HEPA) filter.
16. If the material is soaked through to the point of run-off, use a scoop or shovel to carefully move the material into a plastic disposal bag. Double bag and seal the bags. Label them to identify the contents and handle the bag in a manner that will avoid punctures – and then dispose with regular garbage.
17. Wipe or mop surfaces with a solution of disinfectant and detergent – using a mop and bucket that is specifically for the Hantavirus Control Program (i.e. not used for every day cleaning).
18. Re-set snap traps, as required (non-peanut butter provided – will be in fridge if already opened).
19. Decontaminate and remove personal protective equipment and clothing in accordance with the decontamination procedure. Return any reusable equipment to the tool kit.
20. Wash any exposed skin and wash hands.