

# The Food Safety Connection

Food Safety for Community  
and Catering Groups



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## Introduction

Manitoba Agriculture, Food and Rural Development has an important role in providing information and increasing public awareness of food safety issues. Manitobans enjoy a food supply that is varied, safe, high quality and economically priced.

From the farmer who produces the raw ingredients, to the processor, retailer and food handler – everyone is a link in the food safety chain.

This manual provides a guide for volunteers and catering groups in preparing and serving food safely to large groups such as fall suppers, weddings, family reunions, fundraising events, etc.

Food that is mishandled can cause very serious consequences for all, especially young children, pregnant women, the elderly and people with weakened immune systems.

**It is recommended that at least one person in your group take a Food Safe 1 certificate course to ensure proper handling practices and temperature checks are made during the event.**

All aspects of food handling need to be considered. Everyone who works with preparing food for others is responsible for food safety.

For additional information, and to ensure that all provincial regulations and recommendations for food preparation and service are followed, please contact your local environmental or public health inspector. (p. 34-36)

This manual has been adapted with permission from the United States Department of Agriculture and developed in partnership with Manitoba Health.

# **Foodborne Illness:**

## **What You Need To Know**

### **What Is Foodborne Illness?**

One of the causes of foodborne illness is eating food that contains harmful bacteria. With the right conditions, dangerous bacteria will multiply and grow to numbers that can be harmful. Bacteria are usually odourless and tasteless, therefore they cannot be detected by smelling and tasting the food.

Foodborne illnesses often have symptoms similar to the flu. The most common symptoms may include stomach cramps, nausea, vomiting, diarrhea and fever or any combination of these. These symptoms can occur several hours or several days after eating contaminated foods. Symptoms will vary from individual to individual, according to the type and amount of bacteria present in the food. (Foodborne Illness – Causes, Symptoms and Prevention – p. 37) Some people may become ill after ingesting only a few harmful bacteria while others remain symptom-free after ingesting thousands.

Millions of cases of foodborne illness occur each year. Most cases of foodborne illness can be prevented with proper cooking and handling of food. While it is often thought of as an inconvenience, foodborne illness can cause more serious long-term effects such as kidney damage, arthritis, stillborn births and even death.

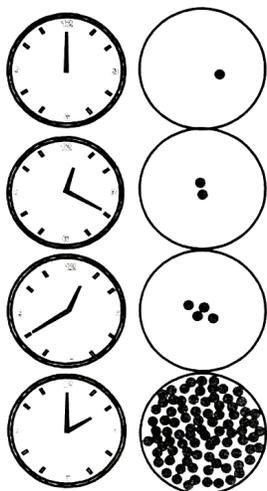
## Beware of Bacteria

Bacteria are everywhere; in the air, soil and sometimes water. Humans carry bacteria in their mouth, nasal passages and intestinal tracts, as well as on their faces, hands, hair and clothes. Raw meat, poultry, seafood and eggs may contain harmful bacteria. Fruit and vegetables may also carry harmful bacteria from soil or poor personal hygiene of a food handler.

All foods, including those that are ready-to-eat, can become cross-contaminated with bacteria transferred from raw products, meat juices, contaminated products, or from food handlers with poor personal hygiene.

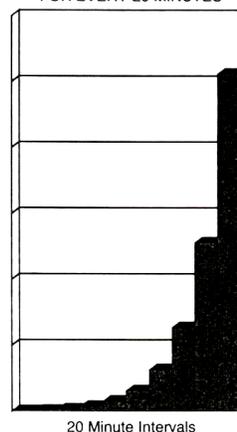
When our food comes in contact with these bacteria and we eat it, we are at risk of getting a foodborne illness. With the right conditions, bacteria will double in number every 20 minutes at room temperature.

## Bacteria Growth Pattern



Bacteria multiply by dividing in two. When conditions are right bacteria will divide in two every 20 minutes. Starting with just one bacteria and letting it multiply at this rate for nine hours, it would produce more new bacteria than there are people in Canada.

NUMBER OF BACTERIA  
FOR EVERY 20 MINUTES



## Your Role in Preventing Foodborne Illness

There are three components in food safety and prevention of foodborne illness:

- ◆ people – good personal hygiene of foodservice staff
- ◆ food – food temperature control and proper food handling – especially in preparation, storage, transport and service of food
- ◆ facilities – adequate cleaning and sanitizing of equipment, utensils and work area

### Personal Hygiene

A good standard of personal hygiene plays an important part in preventing the spread of infection through food, from the food handler to the individual who eats the food.

Always wash your hands with soap and water before starting to work with food. Wash for 20 seconds to loosen the germs, and rinse thoroughly. Dry hands on disposable paper towels or a clean towel.

Remember to wash your hands after:

- ◆ cutting/handling of raw meat, poultry or handling fresh produce
- ◆ smothering a sneeze or cough
- ◆ using the toilet or changing a diaper
- ◆ touching your hair or your face
- ◆ handling dirty items or equipment
- ◆ cleaning equipment or work surfaces
- ◆ handling garbage or using the telephone
- ◆ coffee and/or smoke break

Keep your fingernails short and clean, as they have bacteria under them. Limit the amount of jewelry (ex: rings with stones), as they trap bacteria and dirt, which can be spread to the food. Other forms of jewelry may drop in the food and carry bacteria as well.

Don't allow anyone with an infectious disease (flu/diarrhea/cold) or an infected cut to work with food. If you cut yourself, cover with a bandage and wear a rubber glove over it to protect the food. Do not smoke in food preparation or service areas.

Anyone working with food should have clean hands, fingernails, hair and clothing. Long hair should be tied back and hair should be further restrained with a hair net, hat or cloth scarf, as bacteria on the hair may come in contact with food.

## In Case of Suspected Foodborne Illness

Follow these general guidelines:

- ◆ Preserve the suspected food. If a portion of the suspected food is available, wrap it securely, mark **danger**, refrigerate it immediately and contact the public health inspector. Save all the packaging materials, such as cans or cartons. Write down the food type, the date, other identifying marks on the package, the time consumed and when the onset of symptoms occurred. Save any identical unopened products.
- ◆ Seek treatment as necessary. If the victim is in an **at risk** group, seek medical care immediately. Likewise, if symptoms persist or are severe (such as bloody diarrhea, excessive nausea and vomiting, or high temperature), call your doctor.
- ◆ Call the local environmental health officer or public health inspector (p. 34-36) if the suspect food was served at a large gathering, from a restaurant or other food-service facility, or if it is a commercial product.

### Special Note:

The reason for holding and capturing the suspect food for the public health inspector is:

1. to limit additional exposure so that the food is not served to others
2. to prevent future exposure by determining the source and cause
3. to enable a recall if appropriate and assist in the foodborne illness investigation
4. to assist in educating so that it does not reoccur

## Fight BAC!™

By following four simple steps, you have the power to Fight BAC!  
™ bacteria and keep food safe.

### Clean

Wash hands and surfaces often.

### Separate

Don't cross-contaminate.

### Cook

Cook to proper temperatures.

### Chill

Refrigerate promptly.



Fight BAC!™ is a consumer educational campaign sponsored by the Canadian Partnership for Consumer Food Safety Education. The partnership is a public-private partnership of industry, government and consumer groups created to educate the public about safe food handling to help reduce foodborne illness.

You can find more information about Fight BAC!™ by visiting their website at [www.canfightbac.org](http://www.canfightbac.org).

## When You Plan Your Event

Select a reliable person to be in charge. The person-in-charge should:

1. Contact the local public health inspector (p. 33) for information about the rules and regulations governing the preparation and serving of food for groups.
2. Provide instructions to the volunteers, answer questions and oversee the preparation, service, and cleanup of the event.
3. Passed a **Food Safe 1** course.

For all events, make sure you have a safe water source. If none is available at the site, bring adequate water and heat for cleaning of hands, utensils and food thermometers.

Make sure you have sufficient equipment for holding food hot and cold, cutting boards, utensils, cookware, food thermometers, soap, sanitizer, a supply of clean towels and aprons, and a supply of shallow containers for storage.

Develop a plan for holding food at a proper temperature until it is ready to be served. Ensure that there will be adequate storage space in the refrigerator and freezer for your event.

## When You Shop

All meat, eggs and dairy products for your event should be from government approved sources. Fluid milk and fluid milk products may not be served or used in food preparation unless they have been pasteurized.

Do not purchase canned goods that are dented, cracked or bulging. These are the warning signs that dangerous bacteria may be growing in the can.

Separate raw meat, poultry, and seafood from other food in your grocery shopping cart and in your refrigerator. This will prevent cross-contamination of juices that may contain harmful bacteria from coming in contact with ready-to-eat foods.

Buy cold foods last. If the destination is farther away than 30 minutes, bring a cooler with ice or freezer gel pack from home. Place perishables in it.

## When You Store Food

Make sure to set the refrigerator temperature to 4C (40°F) and the freezer to -18C (0°F). Check these temperatures with a thermometer.



Refrigerate or freeze perishables, prepared foods and leftovers immediately after shopping or preparing. Place raw meat, poultry and seafood in containers in the refrigerator, to prevent their juices from dripping on other foods. Store on shelves below ready-to-eat foods. Raw meat juices may contain harmful bacteria. Refer to the cold storage chart (p. 27) for recommended storage times in the refrigerator or freezer.

## When You Prepare Food

Wash hands and surfaces often with hot, soapy water. Bacteria can be spread throughout the kitchen and get onto cutting boards, utensils and counter tops. To prevent this:

- ◆ Wash hands with soap and hot water for 20 seconds before and after handling food, after using the bathroom or telephone, handling money, coughing, touching your hair, handling raw meat, handling fresh produce, etc.
- ◆ Always clean food preparation surfaces including counter tops, cutting boards, dishes, utensils, sinks, fridge and equipment handles with hot soapy water.
- ◆ Always sanitize food preparation surfaces after washing to ensure any bacteria on the surface are killed. This procedure of washing and sanitizing should be followed before and after each food item is prepared.

### Sanitizing Solution:

15 millilitres (1 tablespoon) of unscented chlorine bleach in  
4.5 litres (1 gallon) of water

If placed in a spray bottle, this solution should be changed daily or more often if no odour of chlorine can be smelled.

- ◆ If countertops are cracked or in poor repair, find other clean areas for food preparation.



**When cutting boards are used:**

- ◆ Always use a clean cutting board that is in good condition with no cracks or grooves.
- ◆ Use a separate cutting board for raw meat, poultry and seafood. Use another for ready-to-eat foods, vegetables, and fruit to help prevent cross contamination. Have different colors or have them marked to distinguish them. Wash them in hot soapy water and sanitize after each use.
- ◆ Excessively worn or hard to clean cutting boards should be replaced.
- ◆ Wooden boards and polyurethane are accepted material for cutting boards (no plywood allowed).

**Sanitizing Solution:**

15 millilitres (1 tablespoon) of unscented chlorine bleach in 4.5 litres (1 gallon) of water

The solution should be replaced frequently. Inexpensive testing strips can be used to ensure that the solution has adequate strength.

**Defrosting Food**

- ◆ Never defrost food at room temperature.
- ◆ Thaw food in the refrigerator 26 to 33 hours per kg or 12 to 15 hours for every lb. of chicken or beef. To defrost turkeys allow 10 hours per kg or five hours for every lb. Thawing can be done in the microwave if you cook the food immediately after thawing.
- ◆ Food may also be thawed in cold water. Be sure that the sink or container that holds food is clean before submerging food.
- ◆ Completely submerge airtight wrapped package of food. Change water every 30 minutes.

Marinades may be used to tenderize or add flavor to food. When using marinades:

- ◆ Always marinate food in the refrigerator, not on the counter.
- ◆ Use food-grade plastic, stainless steel or glass containers to marinate food.
- ◆ Sauce that is used to marinate raw meat, poultry, fish or seafood **should not be used on cooked foods**, unless it is boiled before applying.
- ◆ Never reuse marinades for other foods.

Discard any leftover batter or breading, after it has come in contact with raw food.

Prepare stuffing and place in poultry cavity or in pockets of thick sliced meat or poultry just before roasting. Always sanitize any surfaces including sinks that have been in contact with raw meat or poultry. Sanitizing solution: 15 millilitres (1 tablespoon) unscented chlorine bleach with 4.5 litres (1 gallon) of water.

Wash fruits and vegetables with cool running water before use. Thick-skinned produce (ex: melons, potatoes) should be scrubbed with a brush. Do not use soap.

Food should not be tasted until it reaches a safe internal temperature. Refer to internal cooking temperature chart (p. 18) for the recommended safe temperatures.

- ◆ Each time food is tasted, use a clean utensil.
- ◆ Prepare dense foods in smaller containers.

## When You Cook

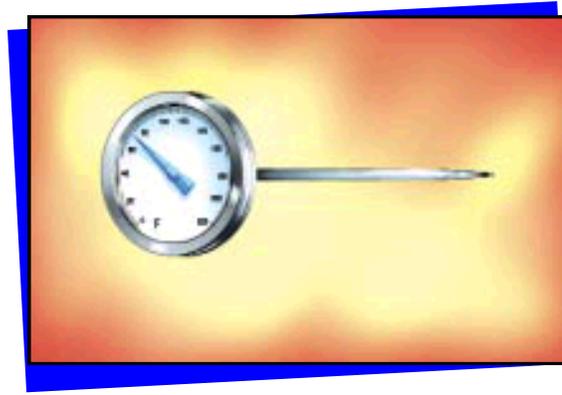
Use a food thermometer to check the internal temperature of meat, poultry, casseroles and other food. Check the temperature (refer to p. 18) in several places to be sure the food is evenly heated. Wash the thermometer with hot, soapy water after each use.

Several types of thermometers are available, including:

- ◆ Oven-safe – insert five to six centimetres (2 to 2 1/2 inches) deep in the thickest part of the food, at the beginning of the cooking time. It remains there throughout cooking and is not appropriate for thin food.



- ◆ Dial instant-read – not designed to stay in the food during cooking. Insert probe the full length of the sensing area, usually five to seven centimetres (2 to 2 1/2 inches). If measuring the temperature of a thin food, such as a hamburger patty or boneless chicken breast, insert probe sideways with the sensing device in the center. About 15 to 20 seconds are required for the temperature to be accurately displayed.



- ◆ Digital instant-read – not designed to stay in food during cooking. The heat sensing device is in the tip of the probe. Place the tip of the probe in the center of the thickest part of the food, at least one centimetre (1/2 inch) deep. About 10 seconds are required for the temperature to be accurately displayed.



Never partially cook food for finishing later because you increase the risk of bacterial growth on the food (ex: rolled roast or turkey). Bacteria are killed when foods reach a safe internal temperature (refer to p. 18).

In recipes where eggs remain raw or partially cooked, substitute pasteurized eggs\* for raw eggs. In cooked dishes, use eggs immediately after breaking.

When preparing food for the oven, preheat the oven to at least 162 C (325°F). Cook food to the recommended safe temperature. Check internal temperature in several places with a food thermometer.

- \* Special note: Consult your local grocery for availability of pasteurized eggs in liquid or frozen form.





A microwave oven can be used to prepare food, but care must be taken to make sure food reaches a safe temperature throughout.

- ◆ Stir or rotate food midway through the microwaving time to eliminate cold spots, and for more even cooking. Cover food.
- ◆ Partial cooking may be done in the microwave only if the food is to finish cooking immediately, either on the range, grill, or in a conventional oven.
- ◆ Use a food thermometer or the oven's temperature probe to be sure the food has reached a safe temperature. Check temperature in several places.
- ◆ Observe standing times given in recipes so cooking is completed.
- ◆ Check manufacturer's instructions.
- ◆ Clean and sanitize microwave with 15 millilitres (1 tablespoon) of unscented chlorine bleach with 4.5 litres (1 gallon) of water.

For information on cooking times for large quantities of food, check with your local library or bookstore for books on quantity cooking in the microwave.

## Recommended Internal Cooking Temperatures

Product	C	°F
<b>Ground Meat</b>		
Beef, pork, veal	71	160
Chicken, turkey	80	176
<b>Beef, Veal, Lamb – Steaks and Roasts</b>		
Rare	60	140
Medium	71	160
Well done	77	170
Rolled beef roasts or steaks	71	160
Beef minute steak	71	160
<b>Pork</b>		
Pork chops, roasts, cured ham	71	160
Cooked ham (to reheat)	60	140
<b>Poultry</b>		
Chicken, turkey – whole, stuffed	82	180
Chicken – whole, unstuffed	82	180
Turkey – whole, unstuffed	77	170
Chicken, turkey – pieces	77	170
<b>Stuffing</b>		
Cooked alone	74	165
<b>Eggs and Egg Dishes</b>		
Egg casseroles, sauces, custards	71	160
<b>Leftovers – reheated, casseroles</b>	74	165
<b>Soups and Gravies</b>	100	212

## When You Chill Food

- ◆ Keep food cold in the refrigerator, in coolers, or on the buffet table on ice.
- ◆ Don't overfill the refrigerator. Cool air must circulate to keep food safe.
- ◆ Divide food and place in shallow containers. Slice roast beef or ham and layer in containers in portions for service.
- ◆ Divide turkey into smaller portions or slices and refrigerate. Remove stuffing from cavity before refrigeration.
- ◆ Place soups or stew in shallow containers. To cool quickly, place in ice water bath and stir.
- ◆ Cover and label cooked foods. Include the preparation date on the label.
- ◆ Always check the refrigerator thermometer to make sure it is at 4 C (40°F). Each refrigerator must have a temperature gauge. (These can be purchased at local hardware stores).



## When You Reheat Food

Heat cooked, commercially vacuum-sealed, ready-to-eat foods, such as hams and roasts, to 60 C (140°F).

Foods that have been cooked ahead and cooled should be reheated quickly to at least 74 C (165°F).

Reheat leftovers thoroughly to at least 74 C (165°F). Reheat sauces, soups, and gravies to a boil, 100 C (212°F).

On stove top – place food in pan and heat thoroughly. The food should reach at least 74 C (165°F) on a food thermometer when done.

In oven – place food in oven set no lower than 150 C (300°F). Use a food thermometer to check the internal temperature of the food.

In microwave – stir, cover, and rotate fully cooked food for even heating to make sure there are no cold spots in food where bacteria can survive. Heat food until it reaches at least 74 C (165°F) throughout.

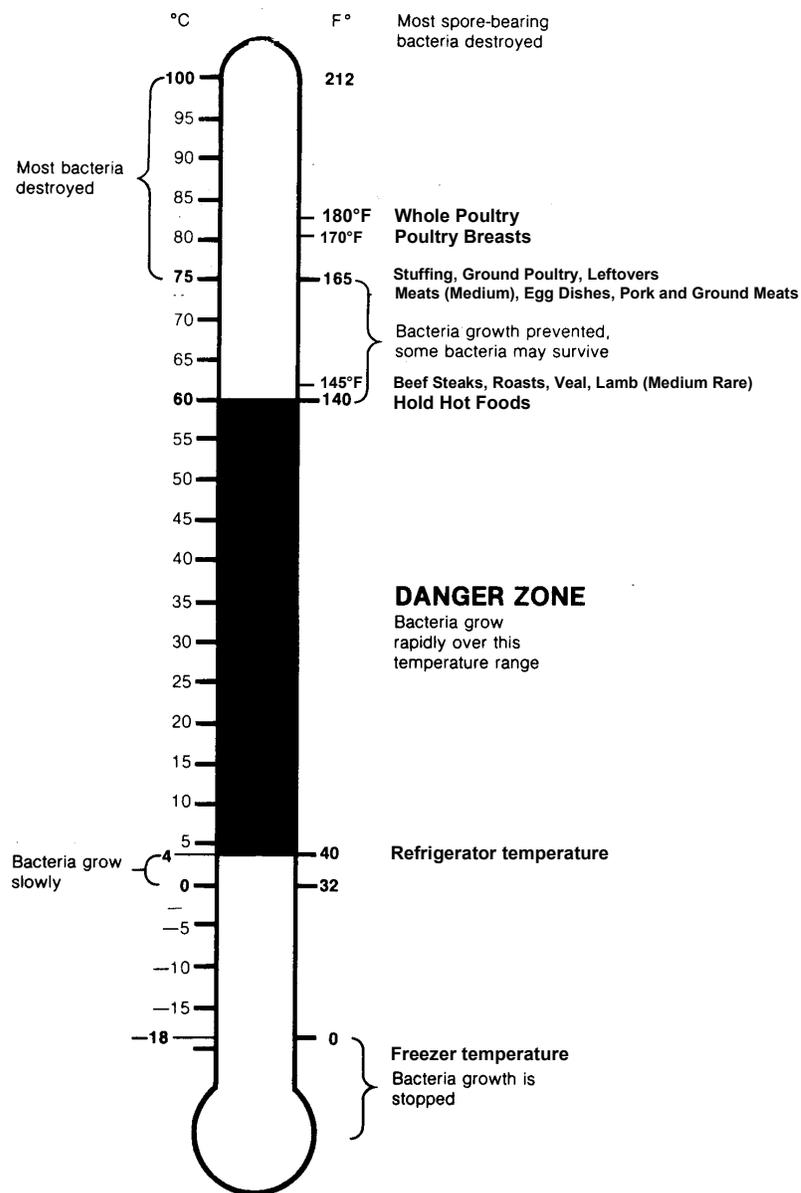
### Slow Cookers, Steam Tables or Chafing Dishes

Slow cookers, steam tables or chafing dishes are **not allowed** to reheat food. They may be used to keep food hot. Reheating leftovers in this type of equipment is **not allowed** because foods may stay in the **danger zone**, between 4 C and 60C (40°F and 140°F), too long. Bacteria multiply rapidly at these temperatures.

## Time and Temperature Abuse

Bacteria grow rapidly between 4 C and 60 C (40°F and 140°F). To keep food out of this **danger zone**, keep cold food cold and hot food hot. Never leave food in the **danger zone** over two hours. This two hours includes preparation and sitting time. If room temperatures are above 35 C (90°F) the time frame drops to one hour including preparation and sitting time.

### TEMPERATURE DANGER ZONE FOR FOOD



## When You Keep Food Hot

Once food is cooked or reheated, it should be held hot, at or above 60 C (140°F). Food may be held in the oven or on buffet table in heated chafing dishes, or on preheated steam tables, warming trays, insulated containers or slow cookers. Always keep hot food hot.



Photo courtesy of CAMBRO Manufacturing Company

## When You Keep Food Cold

Store food in the refrigerator set at 4 C (40°F). If there is not enough room in the refrigerator, place food in coolers with ice, or in insulated containers. Place in smaller, shallow containers as food will chill more quickly. Always keep cold food cold.



### The day before:

- ◆ If possible, store some food in the refrigerator the day before so the refrigerator is not overloaded and overworked on event day.
- ◆ Ensure refrigerators are working by measuring with a thermometer the day before. This allows for planning alternative methods of refrigeration.
- ◆ Remember that small quantities chill more rapidly.
- ◆ Remember that shallow containers are 10 cm (4 inches) deep or less.

## When You Transport Food



Keep cold food cold. Place cold food in coolers with a cold source such as ice or commercial freezing gels. Cold food should be held at or below 4 C (40°F).

Hot food should be kept hot, at or above 60 C (140°F). Wrap well and place in an insulated container.

## When You Serve Food

Use clean containers and utensils to store and serve food.

When a dish is empty or nearly empty, replace with a fresh container of food. Do not add food to existing containers.

### Keep It Cold

Place cold food in small, shallow containers on ice. Hold cold foods at or below 4 C (40°F).

If ice is unavailable, place cold food in small serving containers and remove from refrigeration just prior to serving on a buffet table.

Individual serving dishes can also be set out just prior to the buffet starting and restocked as required.

### Keep It Hot

Once food is thoroughly heated on the stovetop, in the oven or in the microwave oven, keep food hot by using a heat source. Place food in chafing dishes, preheated steam tables, warming trays, or slow cookers.

Check the temperature frequently to be sure food stays at or above 60 C (140°F).



## When You Finish Up

- ◆ Discard any food left out at room temperature for more than two hours. **If in doubt, throw it out!**
- ◆ Refrigerate or freeze leftovers in shallow containers to allow for rapid cooling.
- ◆ Shallow containers are only 10 centimetres (4 inches) deep or less.

## Dishwashing and Storage

When it is time to clean up at the end of the event, the following steps need to be followed.

- ◆ All dishes, pots and pans should be scraped, washed in hot soapy water, rinsed, and then sanitized. The sink used for sanitizing should have 15 millilitres (1 tbsp) of unscented bleach for every four litres (1 gallon) water.
- ◆ Air dry your dishes.
- ◆ Store dishes in a manner to reduce contact with dust or dirt. Plates can be wrapped; pots, bowls, and cups can be stored upside down. Cutlery bins can be wrapped. Utensils should be stored in sealed containers.

The information provided in this publication was developed as a guide for consumers who are preparing food for large groups. For additional information and to ensure that all provincial regulations and recommendations for food preparation and service are followed, please contact your local environmental health officer or public health inspector (p. 34-36).

Food service personnel should contact their local environmental health officers or public health inspectors for information on the rules and regulations governing the preparation of food in retail or institutional settings.

## Storage Chart for Refrigerators and Freezers

Note: These short but safe time limits will help keep refrigerated foods from spoiling or becoming dangerous to eat.

Because freezing prevents bacterial growth, recommended storage times are for quality only.

Product	Refrigerator 4 C (40°F)	Freezer -18 C (0°F)
<b>Fresh Meat</b>		
Beef – steaks, roasts	2-4 days	10-12 months
Pork – chops, roasts	2-4 days	8-12 months
Lamp – chops, roasts	2-4 days	8-12 months
Veal roasts	3-4 days	8-12 months
Ground meat	1-2 days	2-3 months
<b>Fresh Poultry</b>		
Chicken, turkey – whole	2-3 days	1 year
Chicken, turkey – pieces	2-3 days	6 months
<b>Fresh Fish</b>		
Lean fish (ex: cod, flounder)	3-4 days	6 months
Fatty fish (ex: salmon)	3-4 days	2 months
Shellfish (clams, crab, lobster)	12-24 hours	2-4 months
Scallops, shrimp, cooked shellfish	1-2 days	2-4 months
<b>Ham</b>		
Canned ham	6-9 months	Don't freeze
Ham, fully cooked (half and slices)	3-4 days	2-3 months
<b>Bacon &amp; Sausage</b>		
Bacon	1 week	1 month
Sausage, raw (pork, beef, turkey)	1-2 days	1-2 months
Pre-cooked, smoked links or patties	1 week	1-2 months

Product	Refrigerator 4 C (40°F)	Freezer -18 C (0°F)
<b>Leftovers</b>		
Cooked meat, stews, egg or vegetable dishes	3-4 days	2-3 months
Gravy & meat broth	1-2 days	2-3 months
Cooked poultry and fish	3-4 days	4-6 months
Soups	2-3 days	4 months
<b>Hot Dogs and Lunch Meats</b>		
Hotdogs	2 weeks	1-2 months
opened	1 week	
Lunch meats	2 weeks	1-2 months
opened	3-5 days	1-2 months
<b>Deli Foods</b>		
Deli meats	3-4 days	2-3 months
Store-prepared or homemade salads	3-5 days	Don't freeze
<b>TV Dinners / Frozen Casseroles</b>		
Keep frozen until ready to use		3-4 months
<b>Eggs</b>		
Fresh – in shell	3-4 weeks	Don't freeze
out of shell	2-4 days	4 months
Hard cooked	1 week	Doesn't freeze well
Egg substitutes	10 days	Don't freeze
opened	3 days	1 year

Product	Refrigerator 4 C (40°F)	Freezer -18 C (0°F)
<b>Dairy Products</b>		
Milk	Check best before date	6 weeks
opened	3 days	
Cottage cheese	Check best before date	Doesn't freeze well
opened	3 days	
Yogurt	Check best before date	1-2 months
opened	3 days	
<b>Cheese</b>		
soft	1 week	Doesn't freeze well
semi-soft	2-3 weeks	8 weeks
firm	5 weeks	3 months
hard	10 months	Up to a year
processed	Several months	3 months
opened	3-4 weeks	Don't freeze
Butter	8 weeks	Salted – 1 year
		Unsalted – 3 months
opened	3 weeks	Don't freeze
<b>Commercial mayonnaise</b> (refrigerate after opening)	2 months	Don't freeze
<b>Vegetables</b>		
Beans, green or waxed	5 days	8 months
Carrots	2 weeks	10-12 months
Celery	2 weeks	10-12 months
Lettuce, leaf	3-7 days	Don't freeze
Lettuce, iceberg	1-2 weeks	Don't freeze
Spinach	2-4 days	10-12 months
Squash, summer	1 week	10-12 months
Squash, winter	2 weeks	10-12 months
Tomatoes	Not recommended	2 months

## Shelf Stable Food Chart \*

Shelf-Stable Foods	Unopened in Pantry	In Refrigerator after Opening
<b>Canned Goods, Low Acid</b>		
Such as meat, poultry, fish, gravy, stew, soups, beans, carrots, corn, pasta, peas, potatoes, spinach	1 year	3 to 4 days
<b>Canned Goods, High Acid</b>		
Such as juices, fruit, pickles, sauerkraut, tomato soup, and foods in vinegar-based sauce	1 year	5 to 7 days

\*Source: *Buying and Storing Canadian Foods*, Agriculture Canada

### Special Note

- ◆ Store unopened dry foods, canned goods and high acid items (like ketchup, mustard, vinegar) in a clean, dry place where the temperature is neither too hot (above 38 C or 100°F) or too cold.
- ◆ Durable life is the amount of time that an unopened product will retain all of its wholesomeness, taste, nutritional value, and any other qualities claimed by the manufacturer, when stored under **appropriate conditions** (Canadian Food Inspection Agency, September 2010).
- ◆ Durable life information is not a guarantee of product safety. Always inspect cans carefully.

## When You Have Pest Infestation

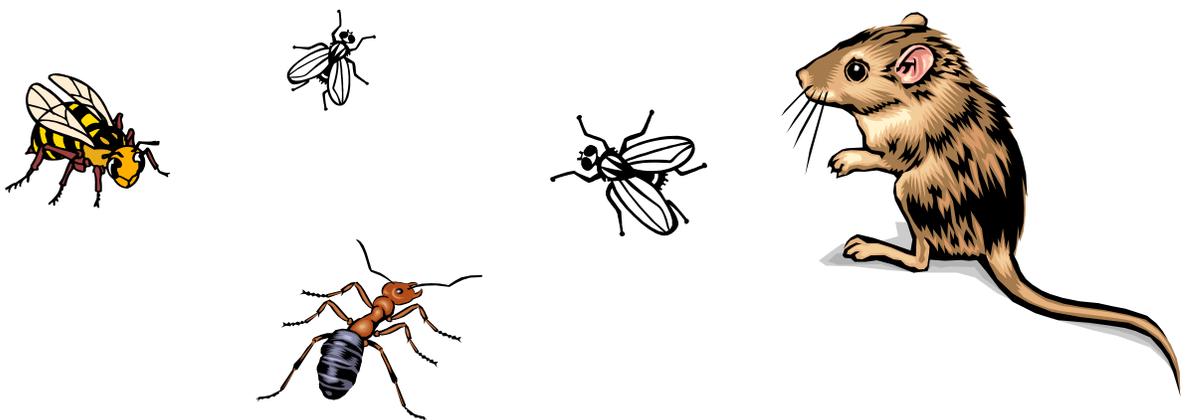
Insect and rodents may cause serious food contamination. Managers and caretakers of the building should have a prevention program in place to avoid pest infestations. The building should be checked regularly for any signs of pests. In the event that there is a pest infestation, it may be necessary to have an insecticide or rodenticide applied by an experienced person or a professional exterminator. Consult with your public health inspector.

Managers or caretakers are responsible for clean up of pests and the insecticide and/or rodenticide residues, as well as safe storage of products used.

Check the fact sheet *Hantavirus Infection* (Appendix 1) for cleaning up areas/equipment contaminated by rodents (even one mouse can cause a major problem). Check the website [www.manitoba.ca/health](http://www.manitoba.ca/health) for other fact sheets.

Insects (flies, ants, roaches, etc.) may also contaminate food, so every effort should be made to prevent them from contacting food.

Halls and community centres must have a permit to operate a food handling establishment and should be inspected annually by a public health inspector.



## When You Are Uncertain of the Water Supply

The water supply should be tested on a regular basis by the manager or caretaker of the building, to ensure the water is safe to use. (Information is available from your environmental health officer, public health inspector and Manitoba Agriculture, Food and Rural Development GO Offices). This is especially important during times of high precipitation or during spring run-off.

If the water supply is questionable, water should be transported in sanitary containers for use. Clean hot water is necessary for washing hands, surfaces and utensils. Disposable plastic gloves can be used and thrown away between preparing food items. Dishes and portable equipment can be cleaned off-site (p. 26).

Wash all fruit and vegetables, including those you peel or cut (ex: melons, oranges or cucumbers) off-site in sanitary conditions. Use a vegetable brush for grooved or root vegetables (p. 13).



## **Food Safety Information is also available on the following websites:**

### **Canadian**

Manitoba Agriculture, Food and Rural Development  
[www.manitoba.ca/agriculture/foodsafety](http://www.manitoba.ca/agriculture/foodsafety)

Manitoba Health  
[www.manitoba.ca/health/publichealth/environmentalhealth/protection](http://www.manitoba.ca/health/publichealth/environmentalhealth/protection)

Canadian Food Inspection Agency  
[www.inspection.gc.ca](http://www.inspection.gc.ca)

Food Safety Network  
[www.foodsafetynetwork.ca](http://www.foodsafetynetwork.ca)

Health Canada  
[www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)

Canadian Partnership for Consumer Food Safety Education  
[www.canfightbac.org](http://www.canfightbac.org)

### **United States**

Food Safety and Inspection Service  
[www.fsis.usda.gov](http://www.fsis.usda.gov)

Government Food Safety Information  
[www.foodsafety.gov](http://www.foodsafety.gov)

Food Reflections Monthly Newsletter  
<http://food.uni.edu/web/safety/home>

Glo Germ  
[www.glogerm.com](http://www.glogerm.com)

## **TRIBAL COUNCIL ENVIRONMENTAL HEALTH OFFICERS MANITOBA REGION**

### **Cree Nation Tribal Health Centre James Dean – 204-627-1515 Crystal Bull – 204-627-1533**

- Chemawawin Cree Nation (Easterville)
- Mathias Colomb Cree Nation (Pukatawagan)
- Misipawistik Cree Nation (Grand Rapids)
- Mosakahiken Cree Nation (Moose Lake)
- Opaskwayak Cree Nation OCN (The Pas)
- Sapotawayak Cree Nation (Shoal River)
- Wuskwi Sipiik First Nation (Indian Birch)

### **West Region Tribal Health Centre Peter Skobel – 204-622-9400 (Ext #2225)**

- O-Chi-Chak-Ko-Sipi First Nation (Crane River)
- Ebb & Flow First Nation
- Gambler First Nation
- Keeseekoowenin First Nation
- Pine Creek First Nation
- Rolling River First Nation
- Skownan First Nation (Waterhen)

### **Southeast Resource Development Council Mike Fontaine – 204-956-7500 (Ext #119)**

- Buffalo Point First Nation
- Little Grand Rapids First Nation
- Pauingassi First Nation
- Hollow Water First Nation
- Poplar River First Nation

### **Southeast Resource Development Council Shaun Miles – 204-956-7500 (Ext #115)**

- Berens River First Nation
- Bloodvein First Nation
- Brokenhead Ojibway Nation
- Black River First Nation

### **Keewatin Tribal Council VACANT – 1-800-665-6212**

## HEALTH CANADA ENVIRONMENTAL HEALTH OFFICERS MANITOBA REGION

### **Andy Mormul – 204-984-1992**

- Fisher River Cree Nation
- Peguis Indian Band
- Kinonjeoshtegon First Nation (Jackhead)
- Marcel Colomb First Nation (Black Sturgeon)
- Red Sucker Lake First Nation

### **Bob Reed – 204-983-1612**

- Dauphin River First Nation
- Lake St. Martin First Nation
- Little Saskatchewan First Nation
- Pinaymootang (Fairford)
- O-Pipon-Na-Piwin First Nation (South Indian Lake)

### **Brad Carr – 204-984-1337**

- Bunibonibee First Nation (Oxford House)
- Garden Hill First Nation
- Nisichawayasihk Cree Nation (Nelson House)
- St. Theresa Point
- Wasagamack

### **Chris Bergeron – 204-984-8347**

- God's Lake First Nation
- Northlands Dene First Nation (Lac Brochet)
- Sayisi Dene First Nation (Tadoule Lake)
- Shamattawa First Nation

### **Jennifer Hughes – 204-984-2047**

- Fort Alexander First Nation (Sagkeeng)
- Lake Manitoba First Nation
- Norway House and Norway House Hospital
- Roseau River Anishinabe First Nation

### **Marvin Robert – 204-983-0886**

- Dakota Plains First Nation
- Dakota Tipi First Nation
- Long Plain First Nation
- Swan Lake First Nation
- Swan Lake First Nation (Carberry Area)

### **Monique Nguyen – 204-983-3457**

- Barren Lands First Nation (Brochet)
- Fox Lake First Nation (Gillam)
- Sandy Bay Ojibway First Nation
- War Lake First Nation (Ilford)

### **Nicole Lunsted – 1-204-638-7447**

- Birdtail Sioux First Nation
- Canupawakpa Dakota First Nation (Oak Lake)
- Sioux Valley First Nation
- Tootinaowaziibeeng Treaty Reserve (Valley River)
- Waywayseecappo First Nation

### **Rafael Barros – 204-984-2110**

- Cross Lake First Nation
- Manto Sipi Cree Nation (God's River)
- Tataskweyak Cree Nation (Split Lake)
- York Factory First Nation (York Landing)
- Whiskey Jack Treatment Centre

**EHO (VACANT)**

## Public Health Inspection Offices in Manitoba

### Manitoba Health/Health Protection Unit: (public health inspector numbers)

Brandon.....	204-726-6601
Dauphin.....	204-622-2126
Killarney .....	204-523-5285
Lac du Bonnet.....	204-345-1447
Morden.....	204-822-2850
Portage la Prairie.....	204-239-3187
Selkirk.....	204-785-5209
Steinbach.....	204-326-9229
The Pas.....	204-627-8307
Thompson .....	204-677-6472
Winnipeg.....	204-945-4204

**Website:** [www.gov.mb.ca/health/publichealth/environmentalhealth/protection](http://www.gov.mb.ca/health/publichealth/environmentalhealth/protection)

## Manitoba Agriculture, Food and Rural Development

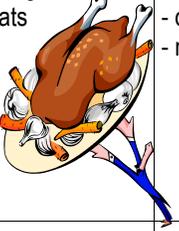
Urban and Northern GO Team—Food Safe Information:

Patti Eilers, Registered Dietitian  
 Rural Leadership Specialist  
 27-2nd Ave SW  
 Dauphin, Manitoba  
 R7N 3E5  
 Phone: 204-572-5501  
 Email: [Patti.Eilers@gov.mb.ca](mailto:Patti.Eilers@gov.mb.ca)

**Website:** [www.manitoba.ca/agriculture/foodsafety](http://www.manitoba.ca/agriculture/foodsafety)

# Foodborne Illness

## – Causes, Symptoms and Prevention

	Foods associated with	Symptoms	Onset	Duration	Prevention
<b>Bacillus cereus</b>	<ul style="list-style-type: none"> <li>- rice</li> <li>- grain products</li> <li>- sauces</li> <li>- casseroles</li> <li>- soups</li> <li>- puddings</li> </ul>	<ul style="list-style-type: none"> <li>- cramps</li> <li>- nausea</li> <li>- vomiting</li> <li>- watery diarrhea</li> </ul>	6 hours to 15 hours after eating	24 hours	Keep hot foods above 60 C and cold foods below 4 C
					
<b>Campylobacter</b>	<ul style="list-style-type: none"> <li>- raw / undercooked poultry and meat</li> <li>- raw, unpasteurized dairy products</li> </ul>	<ul style="list-style-type: none"> <li>- diarrhea</li> <li>- fever</li> <li>- headache</li> <li>- nausea</li> <li>- pain</li> </ul>	2 to 5 days after eating	7 to 10 days	Heat above 60 C, avoid cross-contamination
					
<b>Clostridium botulinum</b>	<ul style="list-style-type: none"> <li>- improperly processed canned food</li> <li>- garlic-in-oil products</li> </ul>	<ul style="list-style-type: none"> <li>- dizziness</li> <li>- double vision</li> <li>- muscle weakness</li> <li>- respiratory failure</li> </ul>	12 hours to 36 hours after eating	Several days to a year	Heat above 60 C, do not eat foods from swollen, leaking cans, refrigerate under 4 C after opening. Use a pressure canner for home canned low acid vegetables.
					
<b>Clostridium perfringens</b>	<ul style="list-style-type: none"> <li>- improper cooling</li> <li>- reheated meats</li> <li>- poultry</li> <li>- casseroles</li> <li>- gravy</li> </ul>	<ul style="list-style-type: none"> <li>- abdominal pain</li> <li>- diarrhea</li> <li>- nausea</li> </ul>	8 hours to 24 hours after eating	Approx. 1 day	Keep hot foods hot above 60 C, refrigerate under 4 C
					
<b>Escherichia coli 0157:H7</b>	<ul style="list-style-type: none"> <li>- raw milk</li> <li>- undercooked hamburger</li> <li>- raw meats and poultry</li> <li>- unpasteurized juices</li> </ul>	<ul style="list-style-type: none"> <li>- diarrhea which is first watery then bloody</li> <li>- severe cramping</li> <li>- vomiting</li> </ul>	2 to 10 days after eating	Approx. 8 days	Thoroughly cook, avoid cross contamination, do not drink unpasteurized milk or juices
					

# Foodborne Illness

## – Causes, Symptoms and Prevention

	Foods associated with	Symptoms	Onset	Duration	Prevention
<b>Listeria monocytogenes</b>	<ul style="list-style-type: none"> <li>- soft cheeses</li> <li>- lunchmeats</li> <li>- hot dogs</li> <li>- unpasteurized milk</li> </ul>	<ul style="list-style-type: none"> <li>- fever</li> <li>- headache</li> <li>- nausea</li> <li>- vomiting</li> </ul>	1 day to 3 weeks	Short but may be long-term for people with weakened immune systems	Use pasteurized dairy products. Avoid soft cheeses if you are at high risk.
<b>Salmonella</b>	<ul style="list-style-type: none"> <li>- eggs</li> <li>- raw or uncooked poultry</li> <li>- dairy products</li> <li>- cantaloupe</li> <li>- alfalfa sprouts</li> </ul>	<ul style="list-style-type: none"> <li>- abdominal cramps</li> <li>- diarrhea</li> <li>- fever</li> <li>- headache</li> <li>- vomiting</li> </ul>	7 hours to 72 hours after eating	4 to 7 days	Thoroughly cook meat and poultry, wash fruits and vegetables thoroughly, avoid cross contamination
<b>Shigella</b>	<ul style="list-style-type: none"> <li>- salads</li> <li>- raw produce</li> <li>- milk and dairy products</li> </ul>	<ul style="list-style-type: none"> <li>- abdominal cramps</li> <li>- diarrhea</li> <li>- fever</li> <li>- vomiting</li> </ul>	12 hours to 48 hours after eating	Approx. 5 to 7 days, but may have symptoms for months	Wash fruits and vegetables thoroughly, always wash hands well
<b>Staphylococcus aureus</b>	<ul style="list-style-type: none"> <li>- meat</li> <li>- poultry</li> <li>- dairy products</li> <li>- tuna</li> <li>- salads</li> <li>- cream filled pastries</li> </ul>	<ul style="list-style-type: none"> <li>- abdominal cramps</li> <li>- diarrhea</li> <li>- nausea</li> <li>- vomiting</li> </ul>	1 to 8 hours after eating	1 to 3 days	Heat above 60 C, keep foods refrigerated, always wash hands well
<b>Yersinia</b>	<ul style="list-style-type: none"> <li>- meats</li> <li>- oysters</li> <li>- fish</li> <li>- raw milk</li> </ul>	<ul style="list-style-type: none"> <li>- abdominal pain, may mimic appendicitis</li> <li>- diarrhea</li> <li>- headache</li> </ul>	1 to 3 days after eating	2 to 3 weeks	Heat above 60 C, avoid eating raw milk or raw Oysters

## Checklist for Facility Inspection:

When renting a facility for your function please use this checklist to assist you in safely planning your event.

1. Has the facility been inspected by a health inspector? (They should have a permit and the facility should be re-inspected annually) Yes / No

Last Inspection Date: \_\_\_\_\_

2. Is there any problem with pest infestation? (ex: flies, ants, mice, etc) Yes / No  
If so, what is being done to eliminate the problem?

\_\_\_\_\_  
\_\_\_\_\_

3. Is there a safe Water Supply? Yes / No

Water Test Date: \_\_\_\_\_ Water Test Results: \_\_\_\_\_

4. Quantity of Counter Space?  
Are they cracked/chipped?  
Cleanable surface?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. Number of Stoves?  
Are they in good working order?  
Are they clean?  
Do they have an oven thermometer?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. Number of Refrigerators\*/Freezers?  
Good working order?  
Checked seals?  
Do they have a thermometers?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. Quantity of Dishes  
Are they cracked/chipped?  
Use of disposable dishware required?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*\* Special Note:*

- Check to make sure fridge is working the day before.
- Put some food in the refrigerator the day before so the fridge is not overworked and/or opened for long periods of time.
- Plan a safer menu if cooling facilities are insufficient. Use coolers and plenty of ice to compensate for lack of sufficient refrigeration.

# Hantavirus Infection

## COMMUNICABLE DISEASE CONTROL

### What is hantavirus infection?

Hantavirus infection is a rare but serious illness. Typical symptoms are flu-like and include fever, headache, nausea, vomiting, muscle aches, diarrhea, abdominal pain and shortness of breath. These symptoms can occur any time between three days to six weeks (usually occurring around 14 days) after exposure. Infection without symptoms is rare. Disease due to infection with North American hantaviruses is called Hantavirus Pulmonary Syndrome (HPS).

Although not believed to be caused by a new virus, the condition was first described in the southern United States in 1993. Hantavirus Pulmonary Syndrome is rare in Canada. Laboratory-confirmed cases of HPS have been reported in Canada since active surveillance began in 1994. As of May 2002, 38 cases of HPS are confirmed to have been contracted in Canada. All of these cases have been in western Canada (two in Manitoba). There have been 15 deaths. Many of these cases were caused by exposure to the virus in or around the home, or during ranch or farm work, with all cases occurring in rural settings.

### How is hantavirus infection spread?

The usual host of this virus is the deer mouse, although other rodent species have been shown to be infected. The deer mouse can be pale gray to reddish brown, and has white fur on its belly, feet and underside of the tail. It is found widely throughout the United States and Canada. The deer mouse lives primarily in rural and semi-rural areas, but can also reside in urban centres. Although deer mouse numbers may vary with habitat and location, a recent survey in southern Manitoba found that deer mice were the dominant species representing over 95% of the mice caught. Deer mice frequently invade homes, old buildings or barns, and sometimes cars, riding mowers and grain augers. Surveys in Manitoba have shown that about 11% of deer mice have been infected with the virus, and that infected deer mice are found in many places in the province.

Hantaviruses are rarely, if ever, spread from person to person and this has never been documented in North America.

Hantaviruses are not spread from pets or livestock. However, cats and dogs may bring infected deer mice into contact with humans.

The virus spreads to people when they:

- breathe air contaminated by deer mouse saliva, urine or feces containing infectious hantaviruses; or

- accidentally rub eyes, mouth or broken skin with hantavirus-infected deer mouse saliva, urine or feces.

In theory, transmission might also occur by:

- eating food contaminated by infected deer mouse saliva, urine or feces; or
- being bitten by an infected deer mouse.

### What safety measures can be taken?

Groups that are likely at an increased risk because of routine activities include:

- homeowners,
- cottagers,
- campers,
- farmers,
- ranchers, and
- hunters.

Specific risk factors that have been associated with contracting HPS in Canada include:

- sweeping or vacuuming areas contaminated with deer mice feces, urine or rodent nests (for example, cleaning cabins, barns, graincribs);
- abandoned vehicles;
- handling firewood.

The following precautions are recommended:

1. Points of entry into buildings, such as cracks in the foundation or holes, should be sealed using steel wool, metal roof flashing or cement. Mice can squeeze through cracks as small as a dime.
2. Discourage rodents from living in buildings and homes by using rodent-proof storage containers for food, pet and animal food, grain and garbage. Clean up spilled/dropped food in eating areas. Other measures include:
  - keeping grass short and yards clear;
  - placing wood piles 100 feet or more from the home;
  - removing abandoned vehicles, discarded tires and old, unused buildings that may serve as nesting sites;
  - securing garbage with tight-fitting lids;



- using snap-traps to remove mice from homes; and
  - the use of poison. Poisons can be dangerous and should be used with caution and on a short-term basis while other measures take effect. If poison is used, it should be placed out of reach of children, pets or livestock.
3. Handle dead rodents (or nests) while wearing plastic or rubber gloves. Wet carcasses (or nesting materials) with bleach disinfectant (one part household bleach plus nine parts water, e.g., 100 ml bleach plus 900 ml water); allow 10 minutes for disinfectant to act, and place in doubled plastic bags. Burning is another option as is deep burial (two feet). Clean all traps, wash plastic or rubber gloves with disinfectant before taking them off and wash hands with soap and water after handling carcasses or traps. Testing rodents for the presence of hantavirus is not recommended.
  4. When cleaning up areas/objects contaminated by rodent urine, feces or nests:
    - open windows and doors for 30 minutes before and after disinfecting;
    - dampen areas contaminated with rodent droppings with bleach disinfectant (see 3 above); however, if area is carpeted use a mixture of water, detergent and commercially available disinfectant such as Lysol. Commercial-grade steam cleaning or steamponing is also an alternative for carpets;
    - remove droppings by damp mopping (i.e., wiping area with a mop or cloth dampened with disinfectant), preferably twice. **NEVER REMOVE DROPPINGS BY SWEEPING OR VACUUMING;**
    - wear plastic or rubber gloves, as well as full-length clothing during clean-up to minimize contact with skin;
    - use gloves to handle soiled clothes and wash laundry with hot water and detergent, or soak it in hot, soapy water until it can be washed. Put in dryer on high-heat, or allow to dry in the sun;
    - if dust cannot be avoided in an area that has to be cleaned, respirator equipment with N-100 filters should be used as a minimum (available from safety equipment stores). For extremely dusty and lengthy exposures, other options are available (check with safety equipment stores or Workplace Safety and Health, 945-6848). The use of goggles in these situations is also advised;
    - respirators are not considered protective if facial hair interferes with the face seal, since proper fit cannot be assured. Fit testing is available where respirators are sold; and
    - thoroughly wash hands and face after cleaning any area or objects (e.g., clothing, dishes, etc.) contaminated by rodent droppings.
  5. Camping or outdoor activities can expose people to rodents and their droppings. Avoid playing on hands and knees or camping in grass or other areas where there is evidence of rodents such as tunnels, nests, dead mice, feces, etc. Do not

stay in cabins that have obvious signs of rodent activity (e.g., droppings or chewing damage) unless they are properly cleaned (See 4 above). Store food in rodent-proof containers. Handle firewood with care since deer mice frequently live in or around woodpiles.

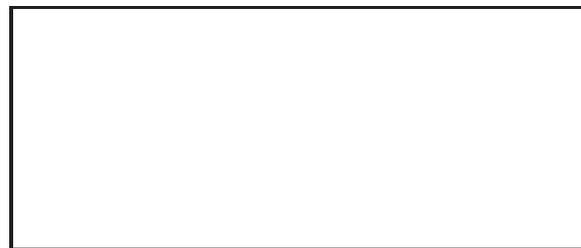
6. Store-bought pets such as gerbils, mice, rats and others are safe. Parents should warn children not to play with wild (live or dead) rodents, or their nests.
7. If you have flu-like symptoms three days to six weeks following an exposure to rodents, you should contact a doctor immediately. Advise your doctor of the possible exposure. The diagnosis of hantavirus infection is made on the basis of symptoms and blood tests.

*For more information:*

*Contact your local public health office in your Regional Health Authority. If you do not know your Regional Health Authority contact Health Links at 788-8200 or 1-888-315-9257. For work-related issues contact Workplace Safety and Health at 945-6848.  
Web site: <http://www.gov.mb.ca/health/publichealth/>*



COURTESY OF THE PRO-VIVAL MUSEUM OF ALBERTA, EDMONTON, ALBERTA



May 2002

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