

The REPORTER

Division of Food and Drugs Food Protection Program
and Division of Community Sanitation
Massachusetts Department of Public Health
USA

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The Reporter is published by the Massachusetts Department of Public Health, Division of Food and Drugs, Food Protection Program and the Division of Community Sanitation. For further information on these and other topics, Food Protection Program staff may be reached by calling 617-983-6712 and Division of Community Sanitation staff may be reached by calling 617-983-6762.

This publication is sent to all Boards of Health in the Commonwealth. It is requested that a copy be circulated to all board members and interested employees. Other interested individuals and agencies may request a copy by contacting the Editor.

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Letter from the Directors

**Paul Tierney, Division of Food and Drugs, Food Protection Program
Steven F. Hughes, Acting Director, Division of Community Sanitation**

Since the Autumn 2003 edition of THE REPORTER, there have been major organizational changes in the Massachusetts Department of Public Health (MDPH). Notably, the Food Protection Program (FPP) and the Division of Community Sanitation (DCS) are now located in the Center for Environmental Health led by Associate Commissioner, Suzanne K. Condon.

In the Division of Community Sanitation, Steven F. Hughes has been named Acting Director and Paul Halfmann named Assistant Director. Steven joins the DCS after five years in the Bureau of Environmental Health Assessment, Emergency Response and Indoor Air Quality Program as an industrial hygienist specializing in indoor air quality. During his tenure at the Bureau, he was instrumental in implementing, monitoring, and enforcement of 105 CMR 675.000 *Requirements to Maintain Air Quality in Indoor Skating Rinks* (State Sanitary Code, Chapter XI). Prior to employment with the MDPH, Steve worked in the private sector as an environmental consultant. He specialized in indoor air quality investigations and remediation in hospitals, schools, commercial buildings and homes, as well as being licensed as an asbestos project monitor, inspector, and management planner.

In response to Steve's expertise in the field of ice skating rink air quality, we are including a copy of the Model Massachusetts Ice Skating Rink Air Quality Record Keeping Log. This document, along with the Board of Health Ice Rink Inspection Sheet, 105 CMR 675.000 *Requirements to Maintain Air Quality in Indoor Skating Rinks*, and the Indoor Ice Skating Rink Certification/Renewal Application are available at: <http://www.mass.gov/dph/beha/iaq/icerinks/ice.htm>. Steve can be contacted at 617-624-5757.

After ten years in the Childhood Lead Poisoning Prevention Program as a Senior Inspector, and with extensive training as an inspector and a broad regulator background, Paul Halfmann has joined the DCS anchoring himself in the Department of Public Health's West Boylston office. He may be contacted at: 508-792-7880 Extension 2340.

In addition to offering general support to local health departments, Paul is expanding his scope of expertise to include Chapter II of the State Sanitary Code, recreational camps for children, DYS facilities, correctional institutions, and lock-up facilities.

In March 2004, after 11 years at the Massachusetts Department of Public Health, including 4 years as the Assistant Director of the DCS, Jennifer Murphy was appointed Director of the Winchester Health Department. At DCS, Jennifer was instrumental in the revision of regulation and policy related to a wide variety of issues including recreational camps for children, swimming pools and beach testing. Her expertise in the interpretation and enforcement of the state's housing regulation will be missed.

Personnel changes also have affected the Food Protection Program. Priscilla Neves has been named Assistant Director for Food Safety and Security. Diane Bernazzani has re-joined the FPP. Diane began her career in the FPP in 1986, and for 11 years was a Senior Inspector, assigned to Food Processing and Retail Food. In her new role, Diane will be focusing on retail food and foodborne illness investigations and control. Kim Foley, who has been the bottle water licensing coordinator, is now employed full time, expanding her role to include retail food and foodborne illness investigations and control.

In February, after 5 years with the FPP, Erica Berl, DVM joined the Division of Epidemiology and Immunization as an epidemiologist. Also in February, Roy Sanderson, the food bio-security coordinator, left the FPP and is now organizing boxes and books as he plans a move to Maryland.

In our attempt to keep you informed about food safety and sanitation issues, we are including some noteworthy articles in this edition of the REPORTER:

- Injuries to Young Restaurant Workers - an insightful piece of research from the Department of Public Health's Occupational Health Surveillance Program
- How to Report Problems with Products Regulated by the FDA - a concise step-by-step guideline to the process.
- Guideline for the Safe Handling of Beverages (including Water), Ice and Dispensers - a newly-released guideline for the proper cleaning and filling of water/ice/beverage coolers/dispensers, especially when used in non-kitchen locations, such as golf course and athletic fields.
- Three other timely articles are also included: Preventing Listeria Contamination in Foods, Seniors Need Wisdom on Food Safety (USDA), and Reptile-Associate Salmonellosis Selected States, 1998--2002 (Centers for Disease Control and Prevention - CDC).

The FPP continues to strive to fulfill its mission of inspecting facilities, responding to

consumer issues, and updating regulatory requirements. In the last six months more than 60 new Food Processing licenses have been approved. The types of products to be processed range from lollipops to clam chowder, and the types of facilities range from residential kitchens to warehouses, including a 1.5 million square totally automated, computer-controlled inventory food warehouse facility. Other recent highlights include:

- During Winter 2004, the FPP began adding to its web page unofficial copies of the regulations under its aegis. These regulations can be accessed and downloaded from <http://www.state.ma.us/dph/fpp/regs.htm>
 - The FPP offered two additional two-day foodborne illness sessions focusing on the training of local health agents, now totaling 14 classes since May 2002
 - The licensing of the first goat milk ice cream plant in the Commonwealth, and two goat milk processing plants were completed.
 - The Dairy Plant Inspection Unit staff was the lead regulatory arm involved in an inter-agency operation that resulted in the closure of an unlicensed and unapproved cheese processor. Also closed at this site was the selling of raw (unpasteurized) milk.
 - During Autumn 2003 and Winter 2004, the Seafood and Shellfish Unit, in conjunction with FPP Retail Food Safety Unit and foodborne illness staff, investigated events that had resulted in serious illness and hospitalizations of Massachusetts residents. In each case, the investigation expanded to include the cooperation of other state agencies, local agencies, national and international agencies. In one case, more that \$250,000 worth of seafood was seized and destroyed in New York State, and in another case, 22 criminal charges have been filed.
 - Priscilla Neves of the Retail Food Safety Unit was a delegate to the Conference for Food Protection, an assembly of government officials, industry representatives and consumer groups that reviews emerging retail food safety issues and makes recommendations to the U.S. Food and Drug Administration.
 - In June, the FPP will conduct a one-day forum for a broad-based discussion of food safety and security in Massachusetts. This event is possible through funding from the U.S. FDA.
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Injuries to Young Restaurant Workers

Beatriz Pazos, MPH

Occupational Health Surveillance Program
Massachusetts Department of Public Health

Work is part of everyday life for millions of teens in the United States. National studies have found that eighty percent of youth have held jobs by the time they finish high school. Work can provide important benefits for youth; however it may also pose health and safety risks. Each year in the U.S., 200,000 young workers are injured on the job, 65,000 seriously enough to seek emergency medical care, and 70 are killed at work.

The Massachusetts Department of Public Health's *Teens at Work Injury Surveillance Prevention Project (TAW)* collects data on work-related injuries to teens less than 18 years of age in Massachusetts. Between 1993 and 2000, more than 4,400 cases of work-related injuries have been identified by this surveillance system using a variety of data sources (primarily workers' compensation records for injuries resulting in five or more lost workdays and records from a sample of twelve hospital emergency departments).

Follow-up interviews are conducted with injured teens to learn more about teen work experiences and the circumstances surrounding their injuries. Data are used to target intervention and prevention activities in the Commonwealth. Findings have been used to develop recommendations for changes in equipment and job design in specific workplaces.

More Massachusetts teens work in restaurants than in any other single industry. In 2000, approximately 35% of all employed 15-, 16- and 17-year-olds - more than 26,400 teens - worked in this industry (which includes full service restaurants, fast food, cafeterias, and caterers). Also, more Massachusetts teens are injured while working in restaurants than in any other industry. Of the 4,475 cases identified by the *TAW Project* from 1993-2000, 27% were injuries to teens working in restaurants (Figure 1). Although young males and females are employed in nearly equal proportions, nearly 2/3 of all injuries to young restaurant workers occurred among males. This finding is similar to that for injuries to young workers in all industries combined and is likely explained, at least in part, by the assignment of young males to more hazardous tasks.

Cuts and lacerations were the most common injuries, followed by heat burns and scalds. Of all heat burns and scalds, grease and hot oil were the most commonly identified causes (followed by hot water and steam). Of 145 injured young restaurant workers interviewed during 1993 – 2000, 51% reported having received no health and safety training or instruction from their employers. Prevention strategies should begin with identifying and eliminating cut and burn hazards wherever possible. Employee health and safety training could help reduce these common injuries.

For more detailed information on injuries to young workers in restaurants and in other industries, visit our Web site at www.state.ma.us/dph/bhsre/ohsp/ohsp.htm.

Color copies of these posters, printed on 8.5 X 14 inch card-stock are available by contacting:

**James Laing, Occupational Health Surveillance Program, Massachusetts
Department of Public Health, 2 Boylston Street—6th floor, Boston, MA 02116
617-988-3341**

james.laing@state.ma.us

By Summer 2004, copies of this poster will be available in Portuguese.

How to Report Problems With Products Regulated by FDA

U.S. Food and Drug Administration

Department of Health and Human Services

<http://www.fda.gov/opacom/backgrounders/problem.html#problems>
Accessed: April 1, 2004

What products does FDA regulate?

Consumers can play an important public health role by reporting to FDA any adverse reactions or other problems with products the agency regulates. FDA is responsible for ensuring that foods are safe, wholesome, and correctly labeled. It also oversees medicines, medical devices (from bandages to artificial hearts), blood products, vaccines, cosmetics, veterinary drugs, animal feed, and electronic products that emit radiation (such as microwave ovens and video monitors), ensuring that these products are safe and effective.

Why should I report?

The testing that helps to establish the safety of products, such as drugs and medical devices, is typically conducted on small groups before FDA approves the products for sale. Some problems can remain unknown, only to be discovered when a product is used by a large number of people. When problems with FDA-regulated products occur, the agency wants to know about them and has several ways for the public to make reports. Timely reporting by consumers, health professionals, and FDA-regulated companies allows the agency to take prompt action. The agency evaluates each report to determine how serious the problem is, and, if necessary, may request additional information from the person who filed the report before taking action.

How do I report an emergency?

If the situation is an emergency that requires immediate action, such as a case of food-borne illness or a drug product that has been tampered with, call the agency's main emergency number, staffed 24 hours a day, 301-443-1240.

You also can report emergencies, as well as non-emergencies, to the FDA consumer complaint coordinator in your geographic area (<http://www.fda.gov/opacom/backgrounders/complain.html>).

Situations that do not require immediate action--such as a non-emergency adverse reaction to a food product or an over-the-counter medical device that doesn't work as advertised--can be reported either to the appropriate consumer complaint coordinator or to the FDA office that handles the product.

How do I report non-emergencies about food?

To report problems, including adverse reactions, related to any food except meat and poultry, contact the district office consumer complaint coordinator for your geographic area (<http://www.fda.gov/opacom/backgrounders/complain.html>).

If the problem involves meat or poultry, which are regulated by the U.S. Department of Agriculture, call the USDA hotline at 1-800-535-4555.

How do I report non-emergencies about medical products: medicines, medical devices, blood products, biologics, special nutritionals?

FDA's MedWatch program allows healthcare professionals and consumers to voluntarily report serious problems that they suspect are associated with the drugs and medical devices they prescribe, dispense, or use. These problems include serious adverse reactions, product quality problems, and medical errors. Reporting can be done online (<https://www.accessdata.fda.gov/scripts/medwatch/>), by phone, or by submitting the MedWatch 3500 form by mail or fax. Visit the MedWatch site (<http://www.fda.gov/medwatch/index.html>) for more details.

How do I report non-emergencies about vaccines?

Adverse reactions and other problems related to vaccines should be reported to the Vaccine Adverse Event Reporting System, which is maintained by FDA and the Centers for Disease Control and Prevention. For a copy of the vaccine reporting form, call 1-800-822-7967 or get a copy of the form from the FDA Website (<http://www.fda.gov/cber/vaers/vaers.htm>).

How do I report non-emergencies about blood transfusions and donations?

You can make initial notifications of transfusion-related fatalities and donation-related deaths to FDA's Center for Biologics Evaluation and Research (<http://www.fda.gov/cber/transfusion.htm>).

How do I report non-emergencies about veterinary products?

Report any problems with veterinary drugs and animal feed to FDA's Center for Veterinary Medicine at 1-888-FDA-VETS (1-888-332-8387). You can also find the reporting form on the center's Website (<http://www.fda.gov/cvm/index/ade/adetoc.htm>).

How do I report non-emergencies about cosmetics?

Send reports about adverse reactions to cosmetics, as well as problems such as filth, decomposition, or spoilage, to: FDA, Office of Cosmetics and Colors (HFS-106), 5100 Paint Branch Parkway, College Park, MD 20740-3835.

How do I report non-emergencies about products sold online?

If you find a Website you think is illegally selling human drugs, animal drugs, medical devices, biological products, foods, dietary supplements, or cosmetics over the Web, you may report it to FDA using the form on this Website (<http://www.fda.gov/oc/buyonline/buyonlineform.htm>).

What should I include in my report?

Report what happened as soon as possible. Give names, addresses and phone numbers of persons affected. Include your name, address and phone number, as well as that of the doctor or hospital if emergency treatment was provided.

State the problem clearly. Describe the product as completely as possible, including any codes or identifying marks on the label or container. Give the name and address of the store where the product was purchased and the date of purchase.

You also should report the problem to the manufacturer or distributor shown on the label and to the store where you purchased the product.

What kinds of problems *doesn't* FDA handle and where can I report them?

Reports and complaints about the following should be made to the agencies listed. Phone numbers can be found in your local phone directory:

- Restaurant food and sanitation--Local or state health departments

- Unsolicited products in the mail--U.S. Postal Service
- Accidental poisonings--Poison control centers or hospitals
- Pesticides or air and water pollution--U.S. Environmental Protection Agency
- Hazardous household products (including toys, appliances, and chemicals)--Consumer Product Safety Commission, 1-800-638-2772
- Alcoholic beverages--Department of Treasury's Bureau of Alcohol, Tobacco and Firearms
- Drug abuse and controlled substances--Department of Justice's Drug Enforcement Administration
- Hazardous chemicals in the workplace--Department of Labor's Occupational Safety and Health Administration
- Warranties--Federal Trade Commission
- Dispensing and sales practices of pharmacies--State board of pharmacy
- Medical practice--State certification board

How can I get information about the products FDA regulates?

If you have a general question about an FDA-regulated product, call toll-free 1-888-INFO-FDA (1-888-463-6332). But please don't report problem products or adverse reactions to this number. Instead, contact FDA's consumer complaint coordinators.

Guidelines for the Safe Handling of Beverages (including Water), Ice and Dispensers

***From: FDA-Division of Federal-State Relations
April 2004***

At the recent Conference for Food Protection, an issue was raised concerning the use of water “coolers” or “portable dispensers” at locations such as golf courses, baseball parks, hiking trails and other public use facilities, and the waterborne illnesses that have occurred as a result of improper storage, use and refilling of these dispensers. The attached guidelines have been adapted from a state program and are available for your use and distribution.

If you’re using manual beverage dispensers to dispense beverages in remote locations (i.e., golf courses), follow these guidelines to minimize the transmission of communicable illnesses:

Water and Ice

- * Water and ice must be from a public distribution system or an approved water supply that is tested to ensure conformity with applicable regulations.
- * The location of ice machines must be in an approved area.

Beverage Dispensers

- * The dispenser should be certified or classified for sanitation by an ANSI accredited certification program.
- * The spigot should be of a gravity flow design to prevent contamination during use.
- * The dispensers should be cleaned and sanitized at least once every 24 hours. Use wash-rinse-sanitize method for sanitizing dispenser. The compartments of the sink should be of sufficient size to allow immersion of the container.
- * For containers too large to be immersed in the three-compartment sink, a clean and sanitize in-place procedure can be used. This includes use of a clean bucket and wash cloth for the detergent cleaning step, followed by rinsing the container at least three times with water, and finally, spraying the inside of the container and spigot with a sanitizer solution.
- * Provide an area to allow proper air-drying of dispensers.
- * Containers shall not be stored on the floor at any time.
- * Pay special attention to cleaning and sanitizing the dispenser nozzle.

Dispenser Filling

- * The dispenser should be filled in an area free of environmental contaminants such as dust and insects.
 - * The dispenser should not be placed on the floor while filling.
 - * The dispenser should be filled in a room with smooth, dry, easily cleanable floors, walls, and ceilings. The dispenser should be kept away from chemical storage or other contaminants.
 - * The water hose used to fill the dispenser should be certified or classified for sanitation by an ANSI accredited certification program (garden hoses are not approved) and not stored on the ground or capable of being submerged into a drain.
 - * Hoses should be used exclusively for drinking water dispenser filling and not to fill other equipment or tanks (such as pesticide, herbicide, battery containers or used to clean other things).
 - * Plumbing code must be met to protect the water supply.
(Cross connections must not be present and backflow devices are required).
 - * Wash hands with soap and water prior to handling water and ice.
 - * Ice must be dispensed with an ice scoop (without coming in direct human contact).
 - * To prevent direct hand contact with the ice, it is recommended that employees wear disposable gloves.
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What You Need to Know About Mercury in Fish and Shellfish

2004 EPA and FDA Advice for: Women who May Become Pregnant Woman who are Pregnant, Nursing Mothers and Young Children

March 2004

US Dept of Health and Human Services and US Environmental Health Agency
EPA-823-R-04-00

<http://www.cfsan.fda.gov/~dms/admehg3.html>
Accessed April 4, 2004

Fish and shellfish are an important part of a healthy diet. Fish and shellfish contain high-quality protein and other essential nutrients, are low in saturated fat, and contain omega-3 fatty acids. A well-balanced diet that includes a variety of fish and shellfish can contribute to heart health and children's proper growth and development. So, women and young children in particular should include fish or shellfish in their diets due to the many nutritional benefits.

However, nearly all fish and shellfish contain traces of mercury. For most people, the risk from mercury by eating fish and shellfish is not a health concern. Yet, some fish and shellfish contain higher levels of mercury that may harm an unborn baby or young child's developing nervous system. The risks from mercury in fish and shellfish depend on the amount of fish and shellfish eaten and the levels of mercury in the fish and shellfish. Therefore, the Food and Drug Administration (FDA) and the Environmental Protection Agency (EPA) are advising women who may become pregnant, pregnant women, nursing mothers, and young children to avoid some types of fish and eat fish and shellfish that are lower in mercury.

By following these three recommendations for selecting and eating fish or shellfish, women and young children will receive the benefits of eating fish and shellfish and be confident that they have reduced their exposure to the harmful effects of mercury.

1. Do not eat Shark, Swordfish, King Mackerel, or Tilefish because they contain high levels of mercury.
2. Eat up to 12 ounces (2 average meals) a week of a variety of fish and shellfish that are lower in mercury.
 - Five of the most commonly eaten fish that are low in mercury are shrimp, canned light tuna, salmon, pollock, and catfish.
 - Another commonly eaten fish, albacore ("white") tuna has more mercury than canned light tuna. So, when choosing your two meals of fish and shellfish, you may eat up to 6 ounces (one average meal) of albacore tuna per week.
3. Check local advisories about the safety of fish caught by family and friends in your local lakes, rivers, and coastal areas. If no advice is available, eat up to 6 ounces (one average meal) per week of fish you catch from local waters, but don't consume any other fish during that week.

Follow these same recommendations when feeding fish and shellfish to your young child, but serve smaller portions.

Frequently Asked Questions about Mercury in Fish and Shellfish:

1. *What is mercury and methylmercury?*

Mercury occurs naturally in the environment and can also be released into the air through industrial pollution. Mercury falls from the air and can accumulate in streams and oceans and is turned into methylmercury in the water. It is this type of mercury that can be harmful to your unborn baby and young child. Fish absorb the methylmercury as they feed in these waters and so it builds up in them. It builds up more in some types of fish and shellfish than others, depending on what the fish eat, which is why the levels vary.

2. *I'm a woman who could have children but I'm not pregnant - so why should I be concerned about methylmercury?*

If you regularly eat types of fish that are high in methylmercury, it can accumulate in your blood stream over time. Methylmercury is removed from the body naturally, but it may take over a year for the levels to drop significantly. Thus, it may be present in a woman even before she becomes pregnant. This is the reason why women who are trying to become pregnant should also avoid eating certain types of fish.

3. *Is there methylmercury in all fish and shellfish?*

Nearly all fish and shellfish contain traces of methylmercury. However, larger fish that have lived longer have the highest levels of methylmercury because they've had more time to accumulate it. These large fish (swordfish, shark, king mackerel and tilefish) pose the greatest risk. Other types of fish and shellfish may be eaten in the amounts recommended by FDA and EPA.

4. *I don't see the fish I eat in the advisory. What should I do?*

If you want more information about the levels in the various types of fish you eat, see the FDA food safety website www.cfsan.fda.gov/~frf/sea-mehg.html or the EPA website at www.epa.gov/ost/fish.

5. *What about fish sticks and fast food sandwiches?*

Fish sticks and "fast-food" sandwiches are commonly made from fish that are low in mercury.

6. *The advice about canned tuna is in the advisory, but what's the advice about tuna steaks?*

Because tuna steak generally contains higher levels of mercury than canned light tuna, when choosing your two meals of fish and shellfish, you may eat up to 6 ounces (one average meal) of tuna steak per week.

7. *What if I eat more than the recommended amount of fish and shellfish in a week?*

One week's consumption of fish does not change the level of methylmercury in the body much at all. If you eat a lot of fish one week, you can cut back for the next week or two. Just make sure you average the recommended amount per week.

8. *Where do I get information about the safety of fish caught recreationally by family or friends?*

Before you go fishing, check your Fishing Regulations Booklet for information about recreationally caught fish. You can also contact your local health department for information about local advisories. You need to check local advisories because some kinds of fish and shellfish caught in your local waters may have higher or much lower than average levels of mercury. This depends on the levels of mercury in the water in which the fish are caught.

Those fish with much lower levels may be eaten more frequently and in larger amounts.

For further information about the risks of mercury in fish and shellfish call the U.S. Food and Drug Administration's food information line toll-free at 1-888-SAFEFOOD or visit FDA's Food Safety website www.cfsan.fda.gov/seafood1.html

For further information about the safety of locally caught fish and shellfish, visit the Environmental Protection Agency's Fish Advisory website www.epa.gov/ost/fish or contact your State or Local Health Department. A list of state or local health department contacts is available at www.epa.gov/ost/fish. Click on Federal, State, and Tribal Contacts. For information on EPA's actions to control mercury, visit EPA's mercury website at www.epa.gov/mercury.

Preventing Listeria Contamination in Foods

Carol Rados

U.S. Food and Drug Administration
Department of Health and Human Services

FDA Consumer Magazine

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http://www.fda.gov/fdac/features/2004/104_bac.html

Keeping ready-to-eat foods cold is key to reducing listeriosis, a serious infection in humans. That's one of the conclusions of a recent Food and Drug Administration risk assessment on the relationship between foodborne listeriosis and human health.

Listeriosis is an illness caused by eating foods contaminated with *Listeria monocytogenes*, bacteria found in soil and water. Food-producing animals can carry these bacteria in their intestines. As a result, the disease-causing bacteria may be spread to meat and dairy products. Ready-to-eat foods also can become contaminated within the processing plant, after processing, or along the route from plant to plate.

Listeriosis has been recognized as an important public health problem in the United States. Scientific information from the FDA's risk assessment outlines measures that industry, retailers and consumers can take to dramatically reduce the risk of this potentially fatal infection.

Listeriosis causes flu-like symptoms, such as fever and chills. Sometimes people have an upset stomach. If the infection spreads to the nervous system, symptoms such as headache, stiff neck, confusion, loss of balance, or convulsions can occur.

Babies can be born with listeriosis if their mothers eat contaminated food during pregnancy. Although healthy people may consume contaminated foods without becoming ill, those at increased risk for infection--people over 60, newborns, and people with weakened immune systems--are more likely to get listeriosis after eating food contaminated with even a few bacteria. People at risk can prevent the infection by avoiding certain high-risk foods and by handling food properly.

- Outbreaks of listeriosis are associated with ready-to-eat foods such as hot dogs, luncheon meats, cold cuts, soft cheeses, deli-style meats, and poultry. Although listeria bacteria are killed with thorough cooking or by other heating methods, such as pasteurization, these tough bugs can grow in the refrigerator and survive in the freezer. The FDA and the Centers for Disease Control and Prevention (CDC) advise that the most
- Store ready-to-eat foods at 40°F or lower--use a refrigerator thermometer to check the temperature.
- Use perishable and ready-to-eat foods as soon as possible.
- Clean the refrigerator regularly.

Although listeriosis is potentially life-threatening, the CDC's FoodNet program has recorded over a 40% decrease in its incidence during the past five years. The results of the risk assessment reinforce past studies that found that, even though foodborne

listeriosis is rare and declining, it remains a public health concern. The CDC estimates that in the United States, 2,500 people become seriously ill with listeriosis each year, and of these, 500 die.

The following advice is provided for pregnant women, older adults, and people with weakened immune systems who are at higher risk for listeriosis:

- Do not eat hot dogs and luncheon meats, unless they are reheated until steaming hot.
- Do not eat soft cheese such as feta, brie, and Camembert, blue-veined cheeses, queso blanco, queso fresco, and Panela, unless it is labeled as made with pasteurized milk.
- Do not eat refrigerated pâtés or meat spreads. Canned or shelf-stable pâtés and meat spreads may be eaten.
- Do not eat refrigerated smoked seafood, unless it is contained in a cooked dish, such as a casserole. Refrigerated smoked seafood, such as salmon, trout, whitefish, cod, tuna, or mackerel, is most often labeled as "nova-style," "lox," "kippered," "smoked," or "jerky." These fish are found in the refrigerated section or sold at deli counters of grocery stores and delicatessens. Canned or shelf-stable smoked seafood may be eaten.
- Do not drink unpasteurized milk or eat foods that contain unpasteurized milk.

How to Prevent Listeriosis and Other Foodborne Illnesses

Follow these four basic steps to food safety promoted by the food safety education program called Fight BAC!

- **Clean:** Wash hands and surfaces often with hot, soapy water. Always wash hands, cutting boards, dishes, and utensils with hot, soapy water after they come in contact with raw food.
- **Separate:** Don't cross-contaminate. Keep uncooked foods separate from vegetables, fruits, breads, and other foods that are already prepared for eating.
- **Cook:** Cook to safe temperatures. If you are at risk for listeriosis, reheat luncheon meats, cold cuts, and other deli-style meat and poultry until they are steaming hot.
- **Chill:** Refrigerate or freeze perishables, including ready-to-eat foods, promptly.

For More Information

Preventing Foodborne Illness

www.foodsafty.gov

Listeriosis Risk Assessment

www.cfsan.fda.gov/~dms/fs-toc.html#risk

***Listeria monocytogenes* (*L. monocytogenes*)**

is a harmful bacterium that can be found in a variety of foods. In pregnant women, *L. monocytogenes*-caused illness can result in miscarriage, fetal death, or severe illness or death of a newborn infant. The elderly and those with weakened immune systems are also at risk for severe illness or death from *L. monocytogenes*-contaminated food.

Source: FDA/CDC 2003 Update of the Listeria Action Plan

Seniors Need Wisdom on Food Safety

*Consumer Education and Information
Slightly Revised October 2002 Food Safety and Inspection Service
United States Department of Agriculture
Washington, D.C. 20250-3700*

<http://www.fsis.usda.gov/OA/pubs/seniors.htm>

Accessed: April 2, 2004

An old adage states, "With age, comes wisdom." Hopefully that wisdom includes lots of good food safety information. Why? As we mature, our bodies change. Seniors become more at-risk for illness and, once ill, it can take them longer to recover.

Knowledge of safe food handling is needed to help seniors stay healthy. It's important to understand the effect of pathogens and other microorganisms on elderly bodies. The best preventative is to understand the safeguards necessary to remain free from foodborne illness.

Some of the changes seniors undergo lessen the body's ability to combat bacteria. For example, there is a decrease in stomach acid secretion, which is a natural defense against ingested bacteria. And over time, the immune system may become less adept in ridding the body of bacteria.

Too, the sense of taste or smell - sometimes affected by medication or illness - may not always sound an alert when meat is spoiled or milk may be sour. By knowing how the body changes, and by using safe food handling techniques, seniors can easily protect themselves and reduce the risk of foodborne illness.

Some seniors are homebound and must rely on delivered food. Others are new widowers with little cooking experience. Whether seniors are part of these groups or experienced cooks, adhering to the following up-to-date food safety guidelines is just plain good wisdom.

Guidelines for Safe Food Handling

- 1. Keep it safe, refrigerate or freeze.** Refrigerate or freeze all perishable foods. Refrigerator temperature should be 40°F or less; freezer temperature should be 0°F or less. Use a refrigerator/freezer thermometer to check the temperatures.
- 2. Never thaw food at room temperature.** Always thaw food in the refrigerator, or in cold water or in a microwave. When thawing in the microwave, you must cook the food immediately.
- 3. Wash hands with warm soapy water before preparing food. Wash hands, utensils, cutting boards and other work surfaces after contact with raw meat and poultry.** This helps prevent cross contamination.
- 4. Never leave perishable food out of refrigeration over two hours.** If room temperature is above 90°F food should not be left out over 1 hour. This would include items such as take-out foods, leftovers from a restaurant meal, and meals-on wheels deliveries.
- 5. Thoroughly cook raw meat, poultry and fish** (see the following chart of internal temperatures). Do not partially cook food. Have a constant heat source, and always set the oven at 325°F or higher when cooking. There is no need to bring food to room temperature before cooking.

Foods Purchased or Delivered Hot

Eating Within Two Hours?

Pick up or receive the food HOT...and enjoy eating within two hours.

Not Eating Within Two Hours?

Keeping food warm is not enough. Harmful bacteria can multiply between 40° and 140°F. Set oven temperature high enough to keep the hot food at 140°F or above. Check internal temperature of food with a meat thermometer. Covering with foil will help keep the food moist.

Eating Much Later?

It's not a good idea to try and keep the food hot longer than two hours. Food will taste better and be safely stored if you:

- Place in shallow containers.
- Divide large quantities into smaller portions.
- Cover loosely and refrigerate immediately.
- Reheat thoroughly when ready to eat.

Reheating?

Reheat food thoroughly to temperature of 165°F or until hot and steaming. In the microwave oven, cover food and rotate so it heats evenly. Allow standing time for more even heating.

Consult your microwave owner's manual for recommended cooking time, power level and standing time. Inadequate heating can contribute to illness.

Foods Purchased or Delivered Cold

Keep Cold Food Cold

Eat or refrigerate immediately. Cold food should be held at 40°F or colder.

The Two Hour Rule

Perishable food should not be at room temperature longer than two hours. Discard food which has been left at room temperature longer than two hours. For room temperatures above 90°F, discard food after one hour.

Cold Storage

Product	Refrigerator (40°F)	Freezer (0°F)
Eggs		
Fresh, in shell	3 to 5 weeks	Don't freeze
Hardcooked	1 week	Don't freeze well
TV Dinners Keep frozen until ready to use		3-4 months
Deli prepared convenience foods such as egg, chicken, ham, and macaroni salads	3-5 days	Don't freeze well
Hot dogs and Lunch Meats		
Hot dogs, opened package	1 week	1-2 months
Hot dogs, unopened package	2 weeks	1-2 months
Lunch meats, opened	3-5 days	1-2 months
Lunch meats, unopened	2 weeks	1-2 months
Deli sliced luncheon meats	3-5 days	Don't freeze well
Soups and Stews Vegetable and meat added	3-4 days	2-3 months
Ground Meat and Poultry	1-2 days	3-4 months
Bacon	7 days	1 month
Sausage	1-2 days	1-2 months
Ham		
Ham, fully cooked—whole	7 days	1-2 months
Ham, fully cooked—half	3-5 days	1-2 months
Ham, fully cooked—slices	3-4 days	1-2 months
Fresh Meat		
Beef, steaks, roast	3-5 days	6-12 months
Pork, chops and roast	3-5 days	4-6 months
Lamb, chops and roast	3-5 days	6-9 months
Veal	3-5 days	4-8 months
Meat Leftovers	3-4 days	2-3 months
Fresh Poultry		
Chicken or turkey, whole	1-2 days	1 year
Chicken or turkey pieces	1-2 days	9 months
Poultry Leftovers	3-4 days	4 months

MINIMUM INTERNAL COOKING TEMPERATURES

We recommend the following:

Fresh ground beef, veal, lamb, pork	160°F
Beef, veal, lamb-roasts, steaks, chops	
Medium	160°F
Well done	170°F
Fresh pork-roasts, steaks, chops	
Medium	160°F
Well done	170°F
Ham	
Cook before eating	160°F
Fully cooked, to reheat	170°F
Poultry	
Ground Chicken, Turkey	165°F
Whole Chicken, Turkey	180°F
Breasts, roasts	170°F
Thighs and wings	180°F
Egg dishes, casserole	160°F
Leftovers	165°F

Other Food Safety Numbers

National Center for Nutrition and Dietetics, Consumer Nutrition Hotline: 1-800-366-1655
 Center for Food Safety and Applied Nutrition, Food and Drug Administration: 1-800-332-4010
 American Heart Association: 1-800-242-8721
 American Institute for Cancer Research: 1-800-843-8114
 Washington DC area only: 202-328-7744
 American Diabetes Association: 1-800-232-3472

For additional food safety information about meat, poultry, or egg products, call the toll-free USDA Meat and Poultry Hotline at 1-888-MPHotline (1-888-674-6854); for the hearing-impaired (TTY) 1-800-256-7072. The Hotline is staffed by food safety experts weekdays from 10 a.m. to 4 p.m. Eastern time. Food safety recordings can be heard 24 hours a day using a touch-tone phone.

Information is also available from the FSIS Web site: <http://www.fsis.usda.gov>

For Further Information Contact:

FSIS Food Safety Education Staff, Meat and Poultry Hotline:

- 1-888-MPHotline (1-888-674-6854) - Toll free Nationwide
- 1-800-256-7072 (TDD/TTY)
- E-mail: mpholine.fsis@usda.gov

Reptile-Associated Salmonellosis --- Selected States, 1998--2002

December 12, 2003 / 52(49);1206-120
Morbidity and Mortality Weekly Report (MMWR)
U.S. Centers for Disease Control and Prevention (CDC)
Accessed: December 29, 2003

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5249a3.htm>

During 1998-2002, CDC received reports from state health departments regarding *Salmonella* infections in persons who had contact with reptiles (e.g., lizards, snakes, and turtles). *Salmonella* infections usually cause gastroenteritis but can result in invasive illness (e.g., septicemia and meningitis), especially in infants and immunocompromised persons. For decades, reptiles have been known as a source for salmonellosis (1); however, numerous reptile owners remain unaware that reptile contact places them and other household members, including children, at greater risk for salmonellosis (2). Increasing evidence suggests that amphibians (e.g., frogs, toads, newts, and salamanders) also can pose risks for salmonellosis in humans (3,4). This report describes cases of reptile-associated salmonellosis in six states*, offers recommendations on preventing transmission of *Salmonella* from reptiles and amphibians to humans.

Case Reports

California. During December 2001, an infant aged 3 months was taken to an emergency department (ED) after 1 day of bloody diarrhea and fever. The infant was sent home with no therapy and recovered in 2 days; a stool specimen yielded *Salmonella* serotype Nima. Although no reptiles lived in the home, the infant's father was a high school biology teacher who handled reptiles in the classroom, including a large snake (i.e., a boa) that he often draped over his shoulders. A stool culture from the snake grew *S. Nima*. When interviewed, the father indicated that he knew reptiles carry *Salmonella* and was careful to wash his hands after handling them or their containers. However, he did not change clothing when he came home from work before holding his child.

Connecticut. During June 2002, a child aged 21 months was admitted to a hospital with fever, abdominal cramps, and bloody diarrhea. The child received no antibiotic therapy and was discharged the next day. Blood and stool cultures yielded *Salmonella* serotype Poona. A sibling aged 6 years also had fever and bloody diarrhea and a stool culture that yielded *S. Poona*. The family had purchased an iguana approximately 1 month earlier. The children had cleaned the iguana's cage and handled the iguana 2 days before their illness onsets. A stool culture from the iguana grew *S. Poona*; isolates from the iguana and the two siblings were indistinguishable by pulsed-field gel electrophoresis (PFGE).

Florida. During January 2000, an infant aged 1 month visited a clinic with fever and diarrhea; the infant was not hospitalized. A stool specimen yielded *Salmonella* serotype Tennessee. One week before illness onset, the infant's family moved into a household that contained a bearded dragon (i.e., *Pogona vitticeps*). The pet reptile's cage had been washed in the kitchen near the infant's bottle nipples. A stool culture from the bearded dragon yielded *S. Tennessee*. Isolates from the infant and the bearded dragon were indistinguishable by PFGE. An adult in the house reported being aware that turtles and iguanas are reservoirs for *Salmonella* but unaware that all reptiles can carry *Salmonella*. The bearded dragon was placed outside the home and later donated to a zoo.

North Dakota. During March 1998, twin infants aged 2 weeks were admitted to a hospital after 1 day of poor feeding, diarrhea, and fever. They were treated intravenously with ampicillin for 6 days. The infants' mother and a child aged 3 years in the home also had diarrhea. Stool specimens from one of the twins, the mother, and the older child yielded *Salmonella* with the partial serotype

O group 44, 45, 47, 48, or 50, H antigen G complex. The family recently had acquired an iguana, which was not allowed out of its cage. Only the mother handled the reptile and cleaned the cage. When the family learned that the iguana was the probable source of *Salmonella* infections, the iguana was euthanized. Culture of intestinal contents from the iguana yielded *Salmonella* with the same partial serotype as the patients' isolates. The clinical isolate from the twin was sent to CDC for complete serotyping and found to be *Salmonella* serotype IV 48:g,z₅₁:- (known formerly as *S. Marina*).

Ohio. During Aug-Oct 2000, local health departments reported seven gastrointestinal illnesses associated with iguanas or turtles acquired at county fairs. In one incident, two siblings aged 11 and 13 years with diarrhea and abdominal cramping visited an ED. No stool specimens were collected from the children. However, stool specimens from a turtle that the siblings received at a county fair yielded *Salmonella* serotype Sandiego. During the same period, a stool specimen from a man aged 20 years with diarrhea also yielded *S. Sandiego*; he recently had won a turtle at a county fair. Isolates from the children's turtle and the man were indistinguishable by PFGE.

Wisconsin. During November 2002, an infant aged 24 days was admitted to a hospital after 1 day of bloody diarrhea. The infant was hospitalized for 3 days and received intravenous fluids and supportive care. A stool culture yielded *Salmonella* serotype IV 44:z₄z₂₃:-. The infant was treated for 14 days with oral amoxicillin. An iguana was reported living in the home of the infant's father; however, attempts to collect stool samples from the iguana were unsuccessful.

Two weeks later, an infant aged 4 months in a neighboring county visited a hospital after 8 days of fever of 100.3° F (37.9° C) and 3 days of decreased range of motion in the left hip. *Salmonella* serotype IV 44:z₄z₂₃:- was isolated from both left hip aspirate and blood cultures. The infant was hospitalized for 6 days and treated intravenously with cefotaxime and gentamicin. An iguana was reported living in the infant's home, but the reptile was removed before it could be tested. Both iguanas associated with the infants were traced back by the state health department to the same distributor in Florida.

Reported by: *R Reporter, MD, Los Angeles County Health Dept; B Sun, DVM, California Dept of Health Svcs. J Monopoli, MPH, East Shore Health District, Branford; Q Phan, MPH, J Hadler, MD, Connecticut Dept of Public Health. P Tiffany, Osceola County Health Dept; Z Mulla, PhD, R Baker, MS, PD Fiorella, PhD, Florida Dept of Health. K Kruger, L Shireley, MPH, D Johnson, MS, D Steinbach, North Dakota Dept of Health. K Smith, DVM, E Salehi, MPH, Ohio Dept of Health. N Joseph, J Archer, MS, J Davis, MD, Wisconsin Dept of Health and Family Svcs. N Snipes, DVM, J Ovitt, DVM, F Angulo, DVM, Div of Bacterial and Mycotic Diseases, Natl Center for Infectious Diseases; S Gottlieb, MD, EIS Officer, CDC.*

Editorial Note:

Salmonellosis associated with reptiles is a continuing public health concern (5,6). During the 1970s, small pet turtles were a major source of *Salmonella* infections in the US (1). In 1975, the FDA banned commercial distribution of small (i.e., <4 in. long) turtles; the majority of states prohibited the sale of such turtles. These measures prevented an estimated 100,000 cases of salmonellosis among children each year (1). However, reptiles remain popular pets in the US; during 1991-2001, the estimated number of households with reptiles doubled from approximately 850,000 to 1.7 million (7). The increase in pet reptile popularity has been paralleled by an increase in the number of reptile-related *Salmonella* serotypes isolated from humans (2,6).

Reptiles are commonly colonized with *Salmonella* and shed the organism intermittently in their feces (6). Attempts to treat reptiles with antibiotics to eliminate *Salmonella* carriage have been unsuccessful and might lead to increased antibiotic resistance (5). *Salmonella* survives well in the environment and can be isolated for prolonged periods from surfaces contaminated by reptile feces (8). For this reason, even minimal indirect contact with reptiles can result in illness (2,5).

Increasing evidence suggests that amphibians also are a source for salmonellosis (3,4). Frogs and toads are frequent carriers of *Salmonella* and have been linked by epidemiologic evidence to outbreaks (3,4). In a population-based, case-control study, housing an amphibian was associated independently with *Salmonella* infection (3). Overall, reptile and amphibian contacts are estimated to account for 74,000 (6%) of the approximately 1.2 million sporadic *Salmonella* infections that occur each year in the US (3).

Gaps remain in the public's understanding of amphibian- and reptile-associated salmonellosis. In one study, fewer than half the families with salmonellosis and known iguana exposure suspected their iguanas might have been the cause of illness (2). Pet-store owners, health-care providers, and veterinarians should provide information and prevention messages about salmonellosis to owners and potential purchasers of reptiles and amphibians. Educational materials are available from the Pet Industry Joint Advisory Council, telephone 800-553-7387.

In 1999, the National Association of State Public Health Veterinarians and the Council of State and Territorial Epidemiologists recommended that state and local agencies adopt regulations to prohibit the sale or gift of reptiles without written point-of-sale education to consumers about the risks for and prevention of reptile-associated salmonellosis (9). In February 2003, CDC polled health departments in all 50 states and New York City (NYC) to determine whether such regulations existed. Among the 49 health departments responding, four states (CO, IL, KS, and TX) required pet stores to provide information about salmonellosis to persons purchasing any reptile; five (CA, CT, MD, MI, and NY) required providing salmonellosis information to persons purchasing a turtle but not other reptiles. Tennessee prohibited sale of all turtles. NYC prohibited sale of certain reptiles, including iguanas, small turtles, and boas, and required posting of information about reptile-associated salmonellosis where other reptiles were sold.

Evaluation of the effectiveness of mandated point-of-sale education in reducing amphibian- and reptile-associated salmonellosis could help guide future prevention efforts. In the meantime, areas such as NYC have adopted restrictions on the sale of certain reptiles similar to those for small turtles.

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- * CA, CT, FL, ND, OH, and WI. At least six other states (KS, ME, MD, OK, WA, and WY) reported similar cases.
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Air Quality in Indoor Skating Rinks□

The purpose of regulation 105 CMR 675.000 *Requirements to Maintain Air Quality in Indoor Skating Rinks* (State Sanitary Code, Chapter XI) is to ensure the public health and safety of patrons who use indoor skating rinks by limiting air concentrations of carbon monoxide and nitrogen dioxide produced by fossil fuel resurfacing equipment to acceptable levels. This is accomplished by requiring indoor ice rink operators to: conduct air sampling for carbon monoxide and nitrogen dioxide; maintain a log book of such air measurements; take remedial action to reduce air concentrations of carbon monoxide and nitrogen dioxide where warranted; and require indoor ice rink operators to apply for an annual certificate of approval for operation. The scope of the regulation applies to all public and private operators of indoor ice skating rinks in Massachusetts. Local boards of health directly enforce these regulations, with assistance from the Department of Public Health.

- Board of Health Ice Rink Inspection Sheet
(<http://www.state.ma.us/dph/beha/iaq/icerinks/form4.pdf>)
- 105 CMR 675.000 Requirements To Maintain Air Quality In Indoor Skating Rinks
(<http://www.state.ma.us/dph/beha/iaq/icerinks/icereq.htm>)
- Indoor Ice Skating Rink Certification/Renewal Application
(<http://www.state.ma.us/dph/beha/iaq/icerinks/ira.pdf>)
- **Model Massachusetts Ice Skating Rink Air Quality Record Keeping Log**
(<http://www.state.ma.us/dph/beha/iaq/icerinks/icemodel.pdf>)

The "Model Massachusetts Ice Skating Rink Air Quality Record Keeping Log" is NOT part of the regulation, but a tool provided by Massachusetts Department of Public Health, Bureau of Environmental Health Assessment to facilitate the record keeping requirements of the regulations. If the model log book is utilized in accordance with appropriate air testing and filled out completely, accurately and kept current, then compliance with the record keeping requirements of the regulations will be deemed complete.

MODEL MASSACHUSETTS ICE SKATING RINK AIR QUALITY RECORD KEEPING LOG

The intent of this document is to provide a model log book for keeping records that are required by 105 CMR 675.007: Record Keeping Requirements. If this model log book is filled out completely, accurately, and current, compliance with this section of the regulations will be deemed complete.

Name of the Skating Rink

Owner of the Skating Rink

Operator of the Skating Rink

Rink Information

Name of Rink: _____

Street: _____

City: _____, Massachusetts

Zip Code: _____ Telephone number: _____

Owner Information

Name of Owner of Rink: _____

Street: _____

City: _____

State: _____ Zip Code: _____

Contact: _____

Telephone Number: _____

Manager of Rink: _____

Telephone Number: _____

Operator Information (if different)

Name of Operator of the Rink: _____

Street: _____

State: _____ Zip Code: _____

Telephone Number: _____

Section One Ice Resurfacing Equipment

Primary Ice Resurfacers Information

Brand of ice resurfacer: _____

Age of Resurfacer (in years): _____

Fuel (Circle one): Gasoline Propane Natural Gas Other _____

Exhaust Pipe Discharge at (Circle one): Ice Level Above Ice

Catalytic Converter (if applicable)

Type of Catalytic Converter: _____

Manufacturer: _____ Date of Installation: / /

Name of Installer: _____

Signature of Installer: _____

Secondary Ice Resurfacer Information (if applicable)

Brand of ice resurfacer: _____

Age of Resurfacer (in years): _____

Fuel (Circle one): Gasoline Propane Natural Gas Other _____

Exhaust Pipe Discharge at (Circle one): Ice Level Above Ice

Catalytic Converter (if applicable)

Type of Catalytic Converter: _____

Manufacturer: _____ Date of Installation: ____/____/____

Name of Installer: _____

Signature of Installer: _____

Edger Information

Brand of Edger: _____ Age of Edger (in years): _____

Fuel (Circle one): Gasoline Propane Natural Gas Other _____

Catalytic Converter (if applicable)

Type of Catalytic Converter: _____

Manufacturer: _____ Date of Installation: ____/____/____

Name of Installer: _____

Signature of Installer: _____

**Ice Resurfacing Equipment
Repair and Tuning Documentation Sheet**

**This form must be filled out after any repair or tuning of ice resurfacing equipment
(i.e., resurfacers and/or edgers) [105 CMR 675.007(C)]**

Date	Equipment	Work Performed	Signature	Conducted by:
				Company:

				Address:
				Company:
				Address:
				Company:
				Address:
				Company:
				Address:
				Company:
				Address:
				Company:
				Address:
				Company:
				Address:
				Company:
				Address:

Section Two Results of Air Sampling

Ice Rink Ventilation

Type of mechanical ventilation: _____

Maximum airflow capacity (in cubic feet per minute): _____

Date of Last Maintenance: ____/____/____

Air Monitoring Equipment

Type of air monitoring equipment for **carbon monoxide**: _____

Date of Last Calibration: ____/____/____

Type of air monitoring equipment for **nitrogen dioxide**: _____

Date of Last Calibration: ____/____/____

Indoor Air Test Results for Skating Rinks (Copy as needed)

Name of Rink: _____ **Town:** _____

Date	Time	Carbon Monoxide*ppm	Nitrogen Dioxide*ppm	Air Sample Device	Lot # (if applicable)	Air Sampling Location (Circle)	Signature
					CO-	Center Ice Red Line	
					NO ₂		
					CO-	Center Ice Red Line	
					NO ₂		

					CO-	Center Ice Red Line	
					NO ₂		
					CO-	Center Ice Red Line	
					NO ₂		
					CO-	Center Ice Red Line	
					NO ₂		
					CO-	Center Ice Red Line	
					NO ₂		
					CO-	Center Ice Red Line	
					NO ₂		
					CO-	Center Ice Red Line	
					NO ₂		

*ppm = parts per million of air

Indoor Air Levels for Carbon Monoxide and Nitrogen Dioxide

If an air sample equals or exceeds 30 ppm for carbon monoxide or 0.5 ppm for nitrogen dioxide, you must take positive measures to decrease air concentrations of these contaminants below these standards as described in 105 C.M.R. 675.009.

If an air sample equals or exceeds 30 ppm for carbon monoxide or 0.5 ppm for nitrogen dioxide for six (6) consecutive air samples, you must notify the local fire department within one hour, local board of health and the Bureau of Environmental Health Assessment within 24 hours of sampling.

If an air sample equals or exceeds 60 ppm for carbon monoxide or 1 ppm for nitrogen dioxide, you must notify the local fire department within one hour, as well as the local board of health and the Bureau of Environmental Health Assessment within 24 hours of sampling.

If an air sample equals or exceeds 125 ppm for carbon monoxide or 2 ppm for nitrogen dioxide, YOU MUST EVACUATE THE RINK, notify the local fire department as soon as possible, the local board of health upon completion of the evacuation, and the Bureau of Environmental Health Assessment within two hours.

The Bureau of Environmental Health Assessment can be contacted at (617) 624-5757 during work hours, or at (617) 522-3700 during the night or weekend.

Actions Taken to Reduce Air Concentrations of Carbon Monoxide or Nitrogen Dioxide if Air Testing Exceeds Correction Levels

(Copy as Needed)

Name of Rink: _____

Town: _____ **Date:** _____

If air testing exceeds correction levels, the regulations require air testing every 20 minutes subsequent to the initial air test to determine if corrective measures are reducing

concentrations of carbon dioxide or nitrogen dioxide.

Time of Follow-up Air Sample	Carbon Monoxide*ppm	Nitrogen Dioxide*ppm	Corrective Measures Employed
20 minutes after resurfacing			
40 minutes after resurfacing			
60 minutes after resurfacing			
80 minutes after resurfacing			
100 minutes after resurfacing			
120 minutes after resurfacing			
140 minutes after resurfacing			

*ppm=parts per million

***Commonwealth of Massachusetts
 Executive Office of Health and Human Services
 Department of Public Health
 Center for Environmental Health
 Food Protection Program
 Division of Community Sanitation
 305 South Street
 Jamaica Plain, MA 02130***

Telephone:

Food Protection Program: 617-983-6712
Division of Community Sanitation: 617-983-6761
FAX: 617-983-6770

Mitt Romney, Governor
Kerry Healey, Lieutenant Governor
Ronald Preston, Secretary of Health and Human Services

Christine C. Ferguson, Commissioner
Department of Public Health

Suzanne K. Condon, Associate Commissioner
Center for Environmental Health

Paul J. Tierney, Director
Food Protection Program
Division of Food and Drugs

Steven F. Hughes, Acting Director
Division of Community Sanitation