

# Health and the Environment Program Cluster

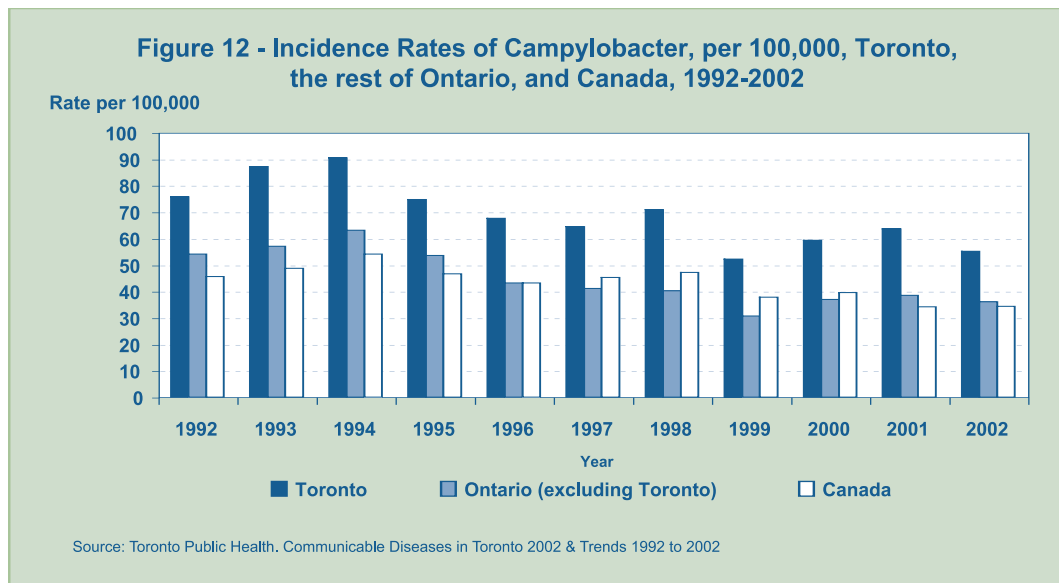
## Food Safety Program

### Goal:

To improve the health of the population by reducing the incidence of foodborne illness.

### Selected Food Safety Indicators:

*Campylobacter* enteritis continues to be the most commonly reported enteric food and waterborne disease in Toronto, accounting for 36% of all disease reports of this type in 2002. Common sources are undercooked chicken or pork, raw milk and direct contact with animals. Symptoms include mild to severe diarrhea, vomiting, abdominal pain and fever, although most cases are asymptomatic. In 2002, there were 1,367 cases of *Campylobacter* in Toronto, a decrease of 210 cases from 2001.



Toronto has higher rates of *Campylobacter* than the rest of Ontario and Canada. In 2002, Toronto's rate was more than 50% higher than the rate in the rest of Ontario (Figure 12).

In 2002, there were 644 cases (26 cases per 100,000) of salmonellosis reported, which was a decrease of 52 cases from 2001. Outbreak related cases accounted for 5% of salmonellosis cases in 2002. Seven percent of all cases were hospitalized and no related deaths were reported. Toronto rates of salmonellosis typically exceed those reported in the rest of Ontario and Canada. The age group most commonly affected by salmonellosis is children under 5 years of age.

---

*Verotoxin Producing E. coli (VTEC)* infection can occur after the ingestion of a very small number of organisms (10-100). In 2002 there were 47 reported cases of VTEC (2 per 100,000) in Toronto. This is the lowest number of cases over the 11-year period from 1992 to 2002. Toronto rates of VTEC were consistently lower than those reported in the rest of Ontario and Canada during this time period. VTEC is more often associated with farming communities than urban areas.

*Food and Waterborne Outbreaks.* There were a total of 3,868 reported cases of food and waterborne diseases in Toronto in 2002. There were 301 enteric disease outbreaks in 2002, compared to 148 in 2001. The increase in the number of outbreaks was due largely to an increase in the number of reported cases of norovirus (formerly Norwalk virus) in the late fall and winter of 2002. As mentioned above in the section on Control of Infectious Diseases and Infection Control, the setting with the largest number of enteric outbreaks was long-term care facilities in 2001 and 2002.

### **Selected Food Safety Program Activities:**

*The Toronto Licensing Bylaw* was amended in 2000 to give authority to the *Food Premises Inspections and Disclosure System*. The purpose of the system is to make sure that food premises in the city are clean and safe, and to provide information about inspections.

There are approximately 18,000 food premises in Toronto. Over 6,000 of those are restaurants. During a restaurant inspection, TPH's Public Health Inspectors look for any conditions that are in violation of the Ontario Food Premises Regulation or any other condition that may result in foodborne illness. All food premises in the Province of Ontario must be inspected one to three times per year, depending on the type of establishment, volume of food sales and menu selection. Food premises include restaurants, supermarkets, bakeries, food take-outs, cafeterias, food manufacturers and food warehouses.

A green pass notice indicates that a premises is in compliance with the Food Premises Regulation, or only minor infractions that are not likely to present a significant or immediate risk to the health of the public were noted. Of the 27,552 inspections conducted in 2003, 88% resulted in the premises receiving a green pass notice. The pass rate improved 13% between 2001 and 2003, while the number of inspections increased by 24% during the same time period.

A yellow conditional pass notice indicates that a Public Health Inspector observed significant infractions, which present a potential health risk to the public. A conditional pass does not mean that it is unsafe to eat at the establishment, and the premises may remain open. A conditional pass notice will remain posted until the re-inspection within 24-48 hours, and the Inspector has confirmed that the significant infractions have been corrected. Failure to correct infractions under a conditional pass notice can result in legal action or referral to the Licensing Tribunal.

---

A red closed notice indicates that the Public Health Inspector observed one or more crucial infractions during an inspection and an order to close was issued. A crucial infraction presents an immediate health hazard to the public, and immediate action must be taken by the owner/operator to remove the health hazard or close the establishment. Only 0.1% of inspections resulted in an establishment closure in 2003.



*The Dinesafe* Web site provides information to the public concerning the TPH Food Premises Inspection and Disclosure system and the results of the most recent TPH inspections. The Web site is not a substitute for the notification and posting requirements of Toronto Bylaw 574-2000.

*Food Handler Certification Courses* are offered by TPH to provide food handlers with the knowledge of safe food handling practices to prevent foodborne illness. To obtain the certificate, one must successfully pass an examination from a recognized food handler certification course.

# Safe Water Program

## Goals:

To reduce the incidence of waterborne illness in the population.

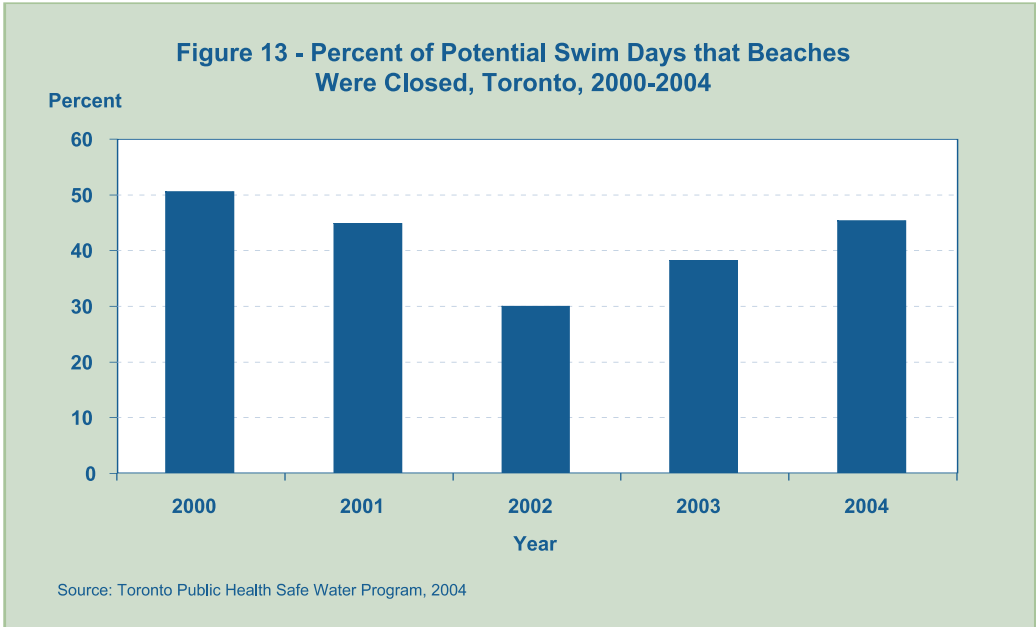
To ensure that community drinking water systems meet the health-related chemical, physical, microbiological and radionuclide standards as published in the *Ontario Drinking Water Quality Standards* (effective June, 2003) and the *Safe Drinking Water Act* (effective December, 2002).

To reduce communicable disease transmission at public beaches.

## Selected Safe Water Indicators:

*Drinking Water.* Of approximately 40,000 microbiological tests carried out on Toronto drinking water from January to mid-November 2003, 61 test results indicated an adverse water quality condition. Only one test result showed that chlorine levels were below the acceptable limit of 0.25 mg/L (25 parts per million). Lead levels are tested in response to inquiries by specific households. Two test results showed that lead levels were above the acceptable limit of 0.01 mg/L in the first 10 months of 2003. Higher levels of lead tend to be more prevalent in older homes. The City of Toronto's Works and Emergency Services (WES) has a program in place to replace old lead pipes. All other test results, such as those for organic compounds and pesticides, were within acceptable limits during this time period.

*Beach Closures.* Over the 5 year period from 2000-2004, the percentage of potential swim days that Toronto beaches that were posted with warnings against bathing ranged from 30% to 51% (Figure 13). Western Toronto beaches are most likely to be posted with warnings, while Toronto Island Beaches are least likely to be posted with a warning. The percentage of potential swim days that Toronto beaches were closed is based on testing at 14 Toronto beaches. The average bathing season is 92 days from early June until Labour Day.



---

## Selected Safe Water Program Activities:

*Drinking Water Quality.* The *Ontario Drinking Water Objectives* were renamed the *Ontario Drinking Water Quality Standards* and were given the force of law in August 2000. The City of Toronto meets, and in many cases exceeds, the testing and water quality requirements of these standards. Toronto's water is tested for unsafe microbes, low chlorine levels, lead, other elements, and chemicals. Approximately 12,000 bacteriological tests alone are performed each quarter on the city's drinking water. The Works and Emergency Services division of the City of Toronto is responsible for testing the water and relaying information about adverse test results to the TPH Safe Water Program. In the case of an adverse test result, the Medical Officer of Health is alerted and a boil water advisory may be issued if the drinking water supply is bacteriologically contaminated. A drinking water advisory would be issued if the drinking water was found to have chemical or radioactive contaminants. TPH also participates in a Water Quality Advisory Group, along with the Ministry of the Environment, and Works and Emergency Services.

*Beaches.* The TPH Safe Water Program is part of the team that posts warning signs on Toronto's 14 beaches when water quality is unsuitable for bathing. Posting of beaches is a collaborative process involving TPH, Works and Emergency Services, the Ministry of Health and Long-Term Care, the Police Marine Unit, and Parks and Recreation. Standard protocols require beach testing only once per week, but TPH samples water from all 14 area beaches daily from June to Labour Day. Bathing water quality can be affected by periods of heavy rainfall, heavy winds, or pollution sources. Warning signs are posted if the geometrical mean of the samples from a beach exceeds 100 *E. coli* per 100 ml of water. Beaches may also be posted because of the presence of hazardous infectious materials, high temperatures that allow bacterial growth, or abnormal pH levels. TPH works with the Police Marine Unit to let lifeguards know when a warning needs to be posted on a beach. In addition to posting warning signs, TPH also updates its beaches hotline, its external Web site, and makes the bathing advisory information available to the Toronto Star each day.



## Air Quality Program

### Goal:

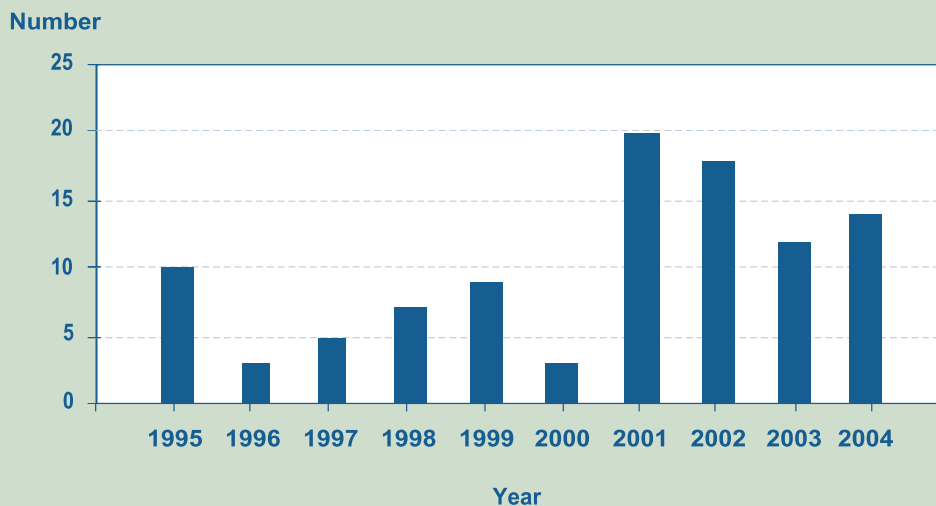
To prevent or reduce the adverse health outcomes from exposure to air pollutants.

### Selected Air Quality Indicators:

Poor air quality is related to a range of health effects: increased incidence and duration of respiratory symptoms, reduced lung function, acute and chronic bronchitis, asthma attacks, increased hospitalizations for respiratory and cardiac causes, elevated mortality rates, and reduced life expectancy. Newer studies link air pollution with lung cancer, heart attacks, strokes and high blood pressure. The burden of illness associated with short-term and chronic exposure to air pollution in Toronto is estimated to be 1,700 premature deaths and 6,000 hospitalizations annually. The current mortality estimate is based on the health risk associated with acute exposures to ozone, nitrogen dioxide, carbon monoxide and sulphur dioxide, and chronic exposure to fine particles.<sup>42</sup>

*Air Quality in Toronto.* Data collected in 2002 from the downtown Toronto air quality monitoring station shows that Toronto had the highest summer concentration of fine particulate matter in ambient air of cities where measuring takes place in Ontario. Toronto also typically experiences higher levels of nitrogen dioxide because of its higher population density and greater vehicle emissions. While air quality has shown an overall improvement in Ontario over the past several years, levels of some pollutants have been increasing in Toronto. A large proportion of Ontario's population lives in Toronto and this means that a very sizeable population is exposed to high pollution levels.<sup>43</sup>

Figure 14 - Smog Alert Days in Toronto, 1995-2004



Source: Toronto Public Health, 2004

---

In 2002, downtown Toronto air quality was rated “very poor” less than one percent of the time, from “moderate” to “poor” almost 11% of the time, and “very good” to “good” 89% of the time. Adverse health effects are more likely to occur when air quality is rated poor or very poor, but they can also occur when air quality is rated moderate, good, or very good. This data is based on hourly reports from Toronto’s downtown air quality monitoring site.

Smog is the most visible form of air pollution. It is made up of ozone, fine particulate matter, sulphur dioxide, and nitrogen dioxide. It is caused when heat and sunlight react with various pollutants emitted from industry, cars, pesticides and oil-based home products. Smog looks like a brownish-yellow hazy cloud. Smog alerts mostly occur because of elevated levels of ozone and fine particulate matter on hot summer days, although smog can be a year-round problem. Smog episodes in Ontario and Toronto are also affected by regional weather conditions and long-range transport of pollutants. There were 14 smog alert days in Toronto in 2004 (Figure 14). The number of smog alert days varies from year to year, and is influenced by the weather and other factors.

### **Selected Air Quality Program Activities:**

TPH works collaboratively with other City departments, other levels of government, industry, non-governmental organizations and the community in addressing air quality issues.

*20/20 The Way to Clean Air* is a campaign that encourages reducing energy use at home and on the road by 20%. Residents are offered a 20/20 Planner, which is a step-by-step guide to reducing energy use. The campaign also highlights the cost savings that occur with reductions in energy use. 20/20 has a new partnership with the province-wide EcoSchools initiative to bring 20/20 resources to schools across the Greater Toronto Area. The EcoSchools initiative involves children in reducing waste, conserving energy, “greening” the school grounds and learning about environmental issues.

TPH promotes smog-reducing activities year round, and especially during a Smog Alert, when an Air Quality Index rating of at least 50 is expected within the next 24 hours. TPH co-ordinates the corporate smog-alert response plan that is implemented by City divisions. For example, when a smog alert has been issued, there is a suspension or reduction in the use of gasoline or diesel powered vehicles.

TPH also supports the City of Toronto’s Idling Bylaw. An idling vehicle produces twice as much exhaust as a vehicle that is in motion. The Idling Bylaw limits idling to no more than 3 minutes in a 60 minute period.

Other air quality-related activities include research, in collaboration with Health Canada and Environment Canada, into the health effects of exposure to smog, extremes in weather, and the potential effects of smog-heat interaction. TPH is participating in an indoor and outdoor air monitoring research project in collaboration with the University of Toronto, Health Canada and Environment Canada to determine whether staying indoors during smog alert days significantly reduces exposure to air pollutants. TPH is also working to provide a regional approach to air quality through participation in the Greater Toronto Area Clean Air Council and Smog Summit.

---

## **Health Hazard Investigation Program**

### **Goals:**

To prevent or reduce exposure to toxic chemical, biological and physical agents and other environmental hazards.

To promote enhanced environmental quality and health and to prevent or reduce adverse health outcomes resulting from exposure to health hazards.

### **Selected Health Hazard Investigation Indicators:**

*Health Hazards Complaints.* TPH responds to complaints about many types of health hazards, including:

- Indoor air quality;
- Workplace complaints;
- Off-site impacts of demolitions;
- Chemical fires.

In February of 2003, TPH began recording health hazards complaints in the Toronto Healthy Environments Information System. Since that time, TPH has received and investigated 9,984 hazard-related complaints. The two most common hazard-related types of complaints are standing water related to West Nile Virus (3244 complaints), and mould (1,021 complaints).

*Pesticides and the Pesticide Bylaw.* Pesticides are products used to kill plants, insects and plant diseases. Pesticides used on lawns and gardens include herbicides, insecticides and fungicides. Evidence suggests that there is a link between pesticide exposure and adverse neurological or reproductive effects, and some cancers. Research has not definitively shown the number of cases of cancer, neurological impairment or reproductive problems arising from pesticide exposures. However, studies show a greater susceptibility to adverse effects in pregnant women, fetuses, infants, children, and the elderly. Researchers who study the link between health effects and pesticides most commonly use occupational studies. Some researchers in the U.S. have identified links between the above-noted harmful effects, especially in children, and the use of pesticides in and around the home. No such studies have been conducted on people living in Toronto. Similarly, although studies that measure general population exposure to pesticides have not been done in Canada, U.S. researchers testing pesticide levels in urine samples (a measure of total exposure, including through food) have found that most people in the United States (greater than 80% in some samples) carry evidence of having been recently exposed to pesticides and their breakdown products.

An approximate measure of household exposure to outdoor pesticides comes from Toronto survey data on self-reported pesticide use. In 2003, almost 40% (+/-5%) of Toronto respondents to the Rapid Risk Factor Surveillance System

---

(RRFSS) who cared for a lawn or garden reported using pesticides. This figure is in accordance with those from a 2002 survey of 1,000 Toronto residents conducted by TPH. Of those residents whose homes had a lawn (n = 635), 38% reported having used pesticides outdoors in the previous two years. This figure included pesticide use by the householder (19% of those with lawns), by a lawn care company (3%) and by both the householder and a company (16%).

### **Selected Health Hazard Investigation Program Activities:**

The Toronto Board of Health and City Council recognized that human health could be put at risk from pesticide use. As of April 1, 2004, the City of Toronto's Pesticide Bylaw restricts the outdoor use of pesticides on public and private property in Toronto. It aims to reduce pesticide exposure in Toronto by allowing only certain lower risk products and by encouraging natural methods for lawn and garden care. It provides for the use of pesticides only for pest infestations or to control or destroy a health hazard. TPH is responsible for both public education and enforcement of the bylaw.

*The Children's Health and Environment subprogram* aims to protect children's health from environmental exposures with a vision that all Toronto children shall enjoy the highest achievable level of health. In 2002, TPH completed a Needs Assessment Framework Study, which included a survey of parents of young children in Toronto to assess beliefs, knowledge and practices regarding children's environmental exposures. A major report will be released in 2005, discussing the state of knowledge in this area while identifying programmatic needs and action steps for TPH and other City institutions.



In addition, as a member of the Canadian Partnership for Children's Health and Environment, TPH is working with local, regional and national community partners to develop a health promotion and education campaign about children's environmental health for public health workers, family physicians and child care practitioners.

Aside from program planning in this area, children's environmental health concerns are incorporated into ongoing work on health hazard investigation and prevention. For example, TPH worked with Toronto Parks and Recreation and Children's Services to develop a study and mitigation plan for arsenic leaching from pressure-treated wood play structures in the City's parks and childcare centres.