



# TORONTO STAFF REPORT

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October 4, 2004

To: Board of Health

From: Dr. David McKeown, Medical Officer of Health

Subject: Legislative and Educational Strategies to Reduce Hot Tap Water Temperature in Homes

Purpose:

This report provides an update on a recent change to the Ontario Building Code and describes the implementation of a health communication campaign by Toronto Public Health to reduce hot tap water temperature in homes. This report is a follow-up to a Board of Health Report, entitled "Amendment of Building Codes to Reduce Hot Tap Water Temperature in Homes", dated April 29, 2003.

Financial Implications and Impact Statement:

There are no direct financial implications arising from this report.

Recommendations:

It is recommended that:

- (1) the Board of Health and Toronto City Council write to the Minister of Municipal Affairs and Housing commending the Minister for amending the Ontario Building Code to reduce hot tap water temperatures;
- (2) the Board of Health forward this report for information and appropriate action to the Planning and Transportation Committee; and
- (3) the appropriate City Officials be authorized and directed to take the necessary action to give effect thereto.

Background:

Hot tap water scalds are a serious yet preventable problem in Canada, especially for young children, older adults and disabled individuals. In Canada, hot water heaters are set at 60°C which provides water at a temperature that can severely scald a child in less than a second.

In response to this issue, Safekids Canada mounted a national multi-stakeholder campaign to address the regulatory and safety standards related to the provision of hot tap water in homes. Toronto Public Health actively supported the campaign by writing letters to the Canadian Commission on Building and Fire Codes and to the Ontario Minister of Municipal Affairs and Housing endorsing proposed national and provincial building code changes that would require hot water temperature in homes to be reduced to 49°C. As well, a staff report outlining the proposed changes specific to hot water temperature to the National Building Code and the Provincial Building Code was forwarded to the Board of Health on April 29, 2003.

The Ontario Building Code was amended in February 2004. The code requires that hot water supplied to all residential fixtures be set at temperatures no higher than 49°C. This will apply to new construction and significant renovations. The amendment came into effect on September 1, 2004.

This report provides an overview of the Ontario Building Code change to reduce hot water temperatures in homes to 49°C. Staff in Urban Development Services, Building Division, were consulted in the development of this report. The report also provides information about a health communication campaign that is being planned by Toronto Public Health. This campaign will raise awareness for parents and caregivers regarding hot tap water scalds to children and provide information on how to reduce hot water temperature in their homes.

Comments:

Nationally, over 300 children, people with disabilities and older adults are treated in hospitals each year in Canada for hot tap water scalds. According to the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP), hot tap water scalds accounted for approximately 7% of all reported scald burns in 1999. Children under five years of age sustained three-quarters of these scalds, with children less than two years of age sustaining more than two-thirds of these injuries. Almost 60% of these children required medical follow-up after initial treatment and more than one quarter were admitted to hospital. Almost three-quarters of those admitted to hospital were less than two years of age.

Safe Kids Canada estimates that tap water scald injuries cost more than \$5 million annually in direct health care costs. This estimate does not include cost for skin grafts, physical therapy, counselling or supportive devices or aids required during recovery.

Current hot water heaters in Canada are typically set at 60°C. At this temperature, hot water burns human skin in one to five seconds. At temperatures above 54°C, children can burn in approximately one-fourth the time of adults. A temperature of 49°C at the faucet will allow a person up to 10 minutes to escape a severe burn injury.

(1) Ontario Building Code Amendment – Hot Water Temperatures

In 2003, the Ontario Ministry of Municipal Affairs and Housing held a consultation on a broad package of proposed changes to the Ontario Building Code. Among the proposals was the consideration to regulate hot water in homes at a temperature not higher than 49°C.

City Council supported this change by endorsing a report from Urban Development Services on the “Response to the Ontario Code Consultation” at its June 2003 meeting. Toronto Public Health provided written support for the proposed code amendments in that report and in a report dated April 29, 2003 to the Board of Health. In February 2004, the Ontario Ministry of Municipal Affairs and Housing announced that, effective September 1, 2004, the Ontario Building Code will require hot water to be delivered to faucets in homes not exceeding 49°C. Homes are referred to as residential occupancies under the Ontario Building Code.

The Ontario Building Code revisions will largely affect new construction. However, existing buildings will be regulated when plumbing systems are expanded and when hot water tanks or faucets are replaced.

The Ontario Building Code recommends three options to achieve 49°C at the faucet:

- (a) Installation of pressure-balanced or thermostatic-mixing shower valves for shower heads and an anti-scald device at each hot water faucet, or
- (b) Installation of an anti-scald mixing valve at the outlet of the water heater to lower the temperature of water to 49°C, or
- (c) Installation of a water heater with an integral anti-scald device (factory installed).

(2) Reducing Hot Tap Water Temperatures - Implementation

The reduction of hot water temperatures in homes to 49°C has the potential to reduce scalds in children. The implementation of the Ontario Building Code amendments regarding hot water temperatures in new and renovated homes is being complemented by the enforcement of these regulations and by the development of a health communication campaign that will create public awareness of hot tap water scalds in children.

- (a) Enforcement of the Code:

While the province administers the Ontario Building Code and has the authority to make amendments, municipalities appoint a Chief Building Official and inspectors as necessary to enforce the Act and the Code. This new Code requirement dealing with hot water temperatures will be enforced by the Building Division through the plan review and inspection process. Since the Code amendments will only affect requirements for the installation of water heaters and plumbing in new construction and renovations, communication with consumers is necessary to alert them to the risks that continue to exist in homes not constructed to the new standard.

(b) Health Communication Campaign:

The Early Child Development, Injury Prevention Project (ECD-IP), is a provincially funded project that is implemented by Toronto Public Health as part of the Ontario Early Years Plan. The goal of the project is to reduce injuries among children, birth to six years of age.

One initiative of the ECD-IP project is a hot tap water anti-scald health communication campaign that will be implemented in November 2004. The health communication campaign will inform the public that hot tap water can severely burn children and provides several options to achieve safer hot tap water temperatures. The campaign will consist of posters located in external bus shelters and in subways and buses. As well, campaign materials, including a card to measure water temperature and brochures will be distributed through parenting programs within Toronto Public Health and through Toronto Health Connection.

The campaign acknowledges that many homeowners have access to a temperature dial on their gas or oil fired hot water heaters, allowing the option of reducing water heater temperatures. However, lowered hot water temperatures in hot water tanks are also associated with increased proliferation of Legionella bacteria. In a review of the evidence of risks associated with legionellosis and hot water heater temperatures, Health Canada recently stated that there is no evidence to indicate an increase in legionellosis for domestic hot water tank settings lowered to 49°C. Health Canada indicates the option of lowering domestic hot water tanks to 49°C is feasible for both oil fired and gas fired hot water tanks, but not for electric water heaters. The control panel for electric water heaters is located within the tank and must be adjusted by a trained technician. Health Canada qualifies their recommendation by stating that the preferred option is to maintain the temperature of hot water tanks at 60°C to reduce both the risks of legionellosis and scalds and to install thermostatic mixing valves at the base of the tank or at individual faucets.

The Toronto Public Health communication campaign materials will endorse the Health Canada recommendation, but recognizes that many homeowners will choose the inexpensive and easy option of turning down the temperature on their hot water tank. The campaign materials will describe issues to consider when implementing this option. As well, the campaign will advise that immunocompromised individuals and those with chronic obstructive pulmonary disease should not turn down their water heaters. A Legionellosis Fact Sheet will be provided for those most at risk.

Conclusions:

Research indicates that legislation in combination with other strategies, such as the use of health communication campaigns to raise parental awareness, have been effective in reducing the incidence of hot tap water scalds in children. The implementation of the new Ontario Building Code amendment provides an opportunity to raise awareness about the risks of hot tap water scalds to children, the elderly and the disabled, and provide information about reducing the temperature of the hot water in homes.

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