

Safe Water

Introduction

Background

Drinking water in Ontario is drawn from surface water sources (lakes and rivers) and groundwater sources (public or private wells). Municipal water supply systems provide approximately 8.9 million (82%) of the population of Ontario with drinking water, while 18% of Ontarians rely upon drinking water from non-municipal year-round residential systems, seasonal residential systems or small private systems serving five or fewer homes (such as private wells).

Communities in Ontario have learned not to be complacent about the safety of their drinking water. In May 2000 the province's drinking water became the focus of intense concern when 7 people from the Town of Walkerton died and more than 2300 others became ill after drinking contaminated water. This tragedy highlighted the importance of protecting the public against the risks of unsafe drinking water, and led to a public inquiry and the subsequent development of provincial legislation intended to ensure drinking water safety (Canadian Environmental Law Association 2003).

Monitoring results collected by the Ontario Ministry of the Environment suggest that public drinking water meets Ontario's drinking water quality standards. High levels of contaminants are rarely found. However, not every community in Ontario is free of drinking water problems. In recent years, a number of municipalities and First Nation communities have suffered outbreaks of waterborne disease and boil water advisories have been imposed on residents.

Rapid Risk Factor Surveillance System

The data presented in this report was obtained and analyzed from the Rapid Risk Factor Surveillance System (RRFSS). RRFSS is an on-going cross-sectional telephone survey occurring in various public health units across Ontario that provides timely and relevant local health unit data. A random sample of adults (aged 18+) in Leeds, Grenville and Lanark counties is interviewed monthly regarding risk behaviours, knowledge, attitudes and awareness about topics important to public health. The RRFSS survey is conducted by the Institute for Social Research (ISR) at York University, on behalf of the Leeds, Grenville & Lanark District Health Unit. Data collected in the RRFSS survey is used to support community awareness programmes, health unit programme planning and evaluation, media campaigns, public policy development and evidence-based research as mandated by the Mandatory Health Programs and Services Guidelines.

Objectives and Methodology

1. To determine sources of potable water by household for the population of Leeds, Grenville and Lanark counties.
2. To ensure that the community water system meets the health-related parameters as published in the Ontario Drinking Water Standards and the Guidelines for Canadian Drinking Water Quality. (MHPSG, 1997)

Data from RRFSS were analyzed using standard data analysis protocols. All analysis was produced using SPSS v.15.0 software (Chicago, IL) and MS Excel software (Redmond, WA). Results are weighted to adjust for household size and inequality in selection probability. Estimates are presented with 95% Confidence Intervals (C.I.) which indicate that there is a 95% probability that the true value of the variable measure (proportion) is contained within the interval. When the data is presented in a chart or table, an "E" indicates that the estimate may be released, but has a high coefficient of variation (C.V.) and must, therefore, be interpreted with caution due to a high sampling variability (C.V between 16.6 and 33.3). A "--" indicates the estimate is suppressed due to small cell size/high sampling variability (C.V greater than 33.3).

Data pertaining to the Safe Water module were collected from April 2006 to May 2007. There were a total of 324 weighted respondents. However, response rates varied between questions in the module.

Results

The mean age of respondents to this module was 50.1 years (S.D. = 16.4), with a range of 77.8 years (min = 18.5, max = 96.2). In terms of gender, 45.9% (95% C.I.: 39.3, 52.5) of respondents were male and 54.1% (95% C.I.: 48.0, 60.2) were female.

Question 1: Do you get your tap water from the municipal system of a private well?

	Frequency (n=324)	Percent	95% C.I.
Private well	183	56.5	49.3, 63.7
Municipal system	138	42.5	34.3, 50.7
Other*	--	--	--

*Other" category includes: 1) Natural non-well water, 2) some other type of water system, 3) don't know response categories.

Table 1: 56.5% of respondents ($n = 183$) in Leeds, Grenville and Lanark counties stated that they got their tap water from a private well. This includes water used for drinking and everyday household activities (e.g. washing dishes and clothes). Only those respondents who answered "Private well" to question 1 were asked further questions in the RRFSS Safe Water module.

Question 2: Is the well deep-drilled, shallow dug or a bored well, or another type of well?

	Frequency (n=183)	Percent	95% C.I.
Deep drilled	134	73.2	65.7, 80.7
Shallow dug, bored, other	49	26.8	14.4, 39.2 ^E

Note: A deep drilled well is defined as one that is more than 50 feet deep. Shallow dug or bored wells include those that are: tile, ring, dry, Indian, sprint water, hand dug, point, spring or sand point.

Table 2: 73.2% of respondents who get their water supply from a well ($n = 134$) stated that they got their tap water from a deep drilled well.



Question 3: How many times have you had your water tested for bacteria in the past 12 months?

	Frequency (n=183)	Percent	95% C.I.
None	65	35.4	23.8, 47.0 ^E
Once	72	39.1	27.8, 50.4
Two or more	30	--	--
Don't know	17	--	--

Table 3: Almost 40% of respondents in Leeds, Grenville and Lanark counties who obtained their water supply from a well stated that they got their tap water tested at least once in the 12-month period prior to responding to the RRFSS survey. However, more than a third of respondents indicated that they had not had their well water tested for bacteria in at least a year.

The proportion of respondents who reported getting their water from a private well (56.5%) correlates closely with the proportion (57.8%) of residents in Leeds, Grenville and Lanark counties who were categorized as living in a rural environment in the 2001 Census of Canada. These facts suggest that the residents of Leeds, Grenville and Lanark counties may have needs that are particular to our geographic jurisdiction that are different from Ontario overall.

Summary of Key Findings

Some key findings in the study were:

1. Just over half of respondents in Leeds, Grenville and Lanark counties get their tap water from a private well (56.5% (95% C.I.: 49.3, 63.7)) compared to 18% for Ontario overall.
2. The majority of private well users obtain tap water from a deep-drilled type of well (73.2% (95% C.I.: 65.7, 80.7)).
3. At least 39.1% (95% C.I.: 27.8, 50.4) of respondents report having had their well water tested in the 12-months prior to the survey.

Strengths & Weaknesses:

The data provided in this analysis demonstrates a timely and local perspective of the sources of domestic water supply, types of wells used to provide water and the frequency in which well water users had their water tested for bacteria in the 12-months preceding the RRFSS survey.

Although the sample size ($n = 324$) was sufficient for basic descriptive analysis, it was not large enough to stratify respondents by county.

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