



Methods

A variety of data and information sources were used to prepare this report. Data sources have been referenced at the end of each chapter in this report; however, a brief description is provided below.

The following population health survey data was utilized in this report:

- 1 The Canadian Community Health Survey (CCHS) is a cross-sectional survey of all Canadians aged 12 years and older. It collects information related to health status, health care utilization and health determinants. Data collection prior to 2007 occurred every two years; since 2007, data collection is on an annual basis. The sample size for Huron County in the 2005 survey was approximately 550.

- The Rapid Risk Factor Surveillance System (RRFSS) is an ongoing, monthly telephone survey conducted by the Institute of Social Research at York University on behalf of various health units in Ontario. Approximately 60 adults aged 18 years and older are randomly selected within Huron County each month to answer questions regarding risk factors, knowledge, attitudes and awareness about health related topics of importance to public health.

- Southern Ontario Infant Feeding Survey (SOIFS) is a cross-sectional telephone survey administered to mothers of newborn children at three and nine months postpartum between 2002 and 2004. Questions were asked on breastfeeding initiation and duration, key influences on mothers' decision-making and infant feeding practices and evaluation of the infant feeding supports and interventions most frequently encountered by mothers. Eight health units, including Huron County, participated in this survey.

- The Provincial Health Planning Database (PHPDB), managed by the Ontario Ministry of Health and Long-Term Care, houses a variety of health information from numerous sources. Data is analyzed by place of residence, not where the

event occurred and does not include records on procedures or events that occurred out of the province of Ontario. Data used in this report includes:

- 1 Vital statistics (i.e. births and deaths), provided by the Office of the Ontario Registrar General.
- 1 Hospitalization (inpatient discharge) data, provided by the Canadian Institute for Health Information's (CIHI) Discharge Abstract Database and emergency room visits, provided by the National Ambulatory Care Reporting System (NACRS).
- 1 Inter-census population estimates (used in rate calculations), obtained through Statistics Canada and the Ontario Ministry of Finance.

Other important data sources include:

- 1 Therapeutic abortion data was provided by the Ontario Therapeutic Abortion Database in the Health Planning System (HELPS), which is produced by the Ontario Ministry of Health Promotion.
- 1 Census data was provided by Statistics Canada. The census is conducted every five years in Canada and collects information on the population, dwellings and also demographic, social and economic characteristics. The most recent census took place in 2006.
- 1 Communicable disease data was extracted from the integrated Public Health Information System (iPHIS). iPHIS is a database used by front-line public health professionals in Ontario for case and contact follow-up and outbreak management of reportable diseases. The database is used for local and provincial surveillance of communicable diseases. Immunization

data was extracted from the Immunization Records Information System (IRIS), which is a database used to collect and maintain immunization data for all students and children attending schools and licensed day cares in Ontario.

- 1 The Ontario Cancer Registry managed by Cancer Care Ontario provides cancer incidence and mortality data. This data is disseminated using SEERStat software. Records of new cancer diagnoses and deaths in Ontario are based on four sources of information: hospital discharge summaries, pathology reports, records from regional cancer centres and death records.
- 1 Internal sources provided valuable information and data on: West Nile Virus surveillance, recreational water sampling; and well water testing, among others.

Indicators

This report describes the health of Huron County using commonly accepted and validated health indicators. A health indicator is a measure of the state of health among individuals in a defined population. Some examples of health indicators include hospitalization rates, birth rates and prevalence of diabetes. The use of indicators in measuring and reporting health status information allows for comparisons to be made with other geographic regions and over time within Huron County. This provides important context for the data and helps to identify health issues the community faces.

Indicators used within this report have been developed by the Association of Public Health Epidemiologists in Ontario.¹ Explanations of various indicators are provided in sidebars throughout the report.

Analysis

Rates

To measure the health status of the community, rates of health outcomes or behaviours are often calculated. A rate is a measure of how often an event occurs in a defined population in a specified period of time.² Incidence rates measure the frequency of *new* occurrences in

a given time period, while prevalence rates measure the frequency of occurrences *that exist* in a given population at a particular time period. For example, a diabetes incidence rate measures the number of newly diagnosed diabetes cases in Huron County for 2005, while a diabetes prevalence rate measures the number of individuals who have diabetes in Huron County in 2005.

A rate can be calculated as follows:

$$\text{Rate} = (\# \text{ of events in a specified period} / \text{population during the period}) \times 10^n$$

Rates are usually multiplied by a power of 10 to convert a decimal or awkward fraction into a whole number.

Rates are used instead of counts because they allow comparisons between populations at different times, different places or among different classes of persons. The process of age-standardization adjusts rates to minimize the effects of differences in age composition when comparing rates for different populations.

Confidence Intervals

Except when a full census is undertaken or all of the health outcomes are recorded accurately, data is collected on a sample from the population. This sample is used to describe what is happening in the larger, underlying population. Because different samples can produce different results, confidence intervals are calculated to describe how reliable the sample estimate is, with a wider interval indicating a less reliable estimate.

95% Confidence Intervals have been calculated for all survey estimates and selected rates.

These intervals tell us that if there was repeated sampling, the true population value or rate would lie within this range 19 times out of 20 (i.e. 95% of the time).

Process of Creating the Report

A consultative process was used to create this report for several reasons:

1. to ensure staff and community needs for information were addressed;
2. to provide important context for the data (i.e. program staff identified if results reflected what they knew empirically to be happening in the community and also

- identified possible explanations for the results);
3. 1 to widen the network of available resources for data; and
 4. 1 to educate health unit staff on the health status of Huron County.

This process was achieved by first creating a table of contents for management and staff to review. Staff and health unit information needs were identified and prioritized at this stage. Next, each chapter of the report, upon its completion, was reviewed by appropriate program staff and feedback was solicited and incorporated into the report. Chapters were also reviewed at management meetings to discuss the results and provide context for the information. Lastly, after all chapters were written, relevant results were presented to each health unit quad at their regular team meeting. At these meetings, staff was asked the following questions:

1. 1 did any of the results surprise you?
2. 1 what information do you think will be useful in your work?
3. 1 is there any information that you think is missing?

Staff comments from these discussions were then used to enhance the report and to identify major themes of the report which are summarized in the discussion section.

Limitations

There are several limitations to the data which should be considered when interpreting the results. First, population health survey data is based on self-reported information and as a result, respondents may feel pressure to select the most socially desirable response. This may falsely underestimate the incidence or prevalence of risky health behaviours or poor social circumstances, such as food security. Self-reported data is also subject to recall bias. Additionally, because participation in surveys is rarely 100%, bias may be introduced as those who respond often differ systematically from those who do not. By drawing on a random sample this bias is minimized and helped to ensure a representative sample of Huron County residents was selected.

Another limitation of population surveys used in this report is that they are administered by telephone, which excludes an estimated 2% of

the population who live in households without active telephones.³ Surveys, therefore, can under-represent populations living in low income that may not have access to a phone. Also, as telephone surveys are based on landline phone numbers, a younger demographic may be excluded from participation due to increasing reliance on mobile phones.

Other data limitations include under-reporting of actual cases for some infectious diseases in iPHIS as infected individuals that are asymptomatic or have only mild clinical symptoms may not seek medical care. Additionally, not all cases who visit physicians will submit a sample for laboratory testing.⁴ Similarly, when using hospitalization data as a crude measure of the prevalence of an illness, precaution should be taken as individuals with mild clinical illness may not be hospitalized for a condition (or conversely, individuals may be hospitalized many times for the same condition).

Lastly, the number of births may be under-reported as registration fees initiated in 1996 may have reduced the number of births registered due to the associated cost. All additional limitations in the data have been addressed within the appropriate chapters.

A final caution should be made to the interpretation of this report. Data on health topics absent from this report may be important to understanding the health of our community; however, this data may either not be available or is not considered to reflect an issue of public health importance.

1 Association of Public Health Epidemiologists in Ontario. Core Indicators and Resource List. Available online at: <http://www.apheo.ca/index.php?pid=55>.

2 Last J. *A Dictionary of Epidemiology, Fourth Ed.* New York, NY: Oxford University Press, Inc., 2001.

3 Statistics Canada. Residential Telephone Service Survey, 2004. Accessed on 18 August 2006 from <http://www40.statcan.ca/l01/cst01/comm03b.htm>.

4 Association of Public Health Epidemiologists in Ontario. Core Indicators – Enteric Disease Incidence. Accessed on 29 August 2008 from <http://www.apheo.ca/index.php?pid=177>.