

# **Health-Environment Linkages Expert Panel Report**

**To Statistics Canada**

**December 19, 2008**

## Introduction

The Health-Environment Linkages Expert panel was established under the direction of Chief Statistician, Ivan Fellegi, and met three times between May 2007 and October 2008 (See Appendix 1 for a list of members). The panel had the following objectives:

- a. To identify the linkages between human health and the environment that may be studied with national statistics;
- b. To review a limited number of Statistics Canada data sources to identify options for studying health-environment linkages with existing data or with data that could be provided following adjustments to the design or content of existing sources; and
- c. To identify options for the development of new data through surveys or administrative sources that could illuminate health-environment linkages that are currently poorly understood.

Four existing surveys relevant to environment and health were emphasized in the meetings:

- The Canadian Community Health Survey;
- The National Population Health Survey;
- The Canadian Health Measures Survey; and
- The Households and the Environment Survey.

The Canadian Community Health Survey (CCHS) is a cross-sectional survey instrument administered to 130,000 Canadians every 2 years. It is an omnibus health survey using a stratified random sample to even out the geographical distribution.

The National Population Health Survey (NPHS) is a longitudinal complement to the CCHS. The survey began with 17,000 participants and it collects some environmental information, for example sun exposure levels.

The Canadian Health Measures Survey (CHMS) is a recently initiated survey of 5,000 Canadian residents, initially ages 6 to 79, though the next cycle will include children 3-5 years of age. The survey is carried out with mobile clinics at 16 sites in 5 provinces and includes blood and urine testing of substances among other physical testing, and an accompanying questionnaire.

The Households and the Environment Survey (HES) is a biennial telephone survey reaching 30,000 households in the 10 provinces looking at the effects that households have on the environment and the effect that the environment has on households.

The Panel commended Statistics Canada, along Health Canada and its other partners, for developing an extensive portfolio of health and environment-linked data sets and studies over the past five years. Until only recently, there were limited data available that linked health and environmental determinants in Canada.

The panel unanimously agreed that Canada has a continued need for more environmental data related to human exposure. There is a great potential for improving the health of Canadians by measuring the effects of environmental influences on health. The United States continues to set a good example for the kind of work Canada can aspire to with the longitudinal National Children's Study getting underway.

The panel urges Statistics Canada to focus on environment and health data that can have the most impact on policy-making. Members emphasized the need for more information to assist in protecting children and other vulnerable populations. In particular, the panel made the inclusion of socioeconomic status a priority given its influence on environmental health. It is also critical to investigate the health of Canadians who live, work or are educated near point sources of pollution.

The Panel also recognized that it is essential for Statistics Canada to effectively disseminate the collected information. Better collaboration with researchers can enhance the benefits of surveys, creating more opportunities for researchers and for training the next generation of epidemiologists and biostatisticians. Increased marketing of surveys will also boost the value of the work, with the active dissemination of survey data and results through, for instance, newsletters, conferences, and websites.

Statistics Canada has the opportunity to become an even stronger leader in the development of a national health and environment database. The department can play a central role in gathering new and existing data and helping to improve linkages between administrative and other data. Increasing collaboration with Environment Canada, Health Canada and other departments will also improve information gathering and encourage ongoing, nationally representative, and longitudinally comparable data collection.

The panel discussed the importance of considering the "environment" in the broader sense of ecosystems and the impact that changes to ecosystems can have on our health. Environmental influences on health include not only direct human exposures, but those that result from changes in the health of our ecosystems.

The specific recommendations in this final report are intended to help Statistics Canada build on the excellent work that has already been done. They are recommendations for how the department can most effectively fill the present gaps in Canadian health and environment data. Panel members thank Statistics Canada for the opportunity to provide input and hope that an ongoing process will facilitate further discussion and implementation.

## **Recommendations**

### **A. Facilitating ongoing input into Statistics Canada's environment and health activities.**

1. A standing advisory committee on health and the environment should be developed to advise Statistics Canada. If Statistics Canada instead chooses to establish or augment discrete health and/or environment committees, they should insure that these committees include members who have expertise in both health and environmental issues, and that they include environment-health linkages in their mandates.

### **B. Developing a national Canadian birth cohort study to examine environmental influences on health.**

2. Statistics Canada should partner with Health Canada, the Canadian Institute for Health Research and other research institutions to develop a nationally representative Canadian longitudinal birth cohort (starting before birth) to study the effects of environmental influences on children's health, including the development of obesity, diabetes, asthma, injuries, learning and behavioural problems. This study should be sufficiently large to examine associations for prevalent conditions in Canadian children (e.g., prevalence > 5%) and should complement similar studies in other countries (e.g., the National Children's Study in the U.S.).

### **C. Improving existing surveys to enhance health and environment linkages**

3. Statistics Canada should augment its surveys to gather exposure information from "home environments" and their impact on health, including data related to indoor air quality, consumer product exposures, house dust measures, ecological footprint, as well as relevant behavioural and socio-economic factors.
4. The agency should expand its collection of environmental data to help fill the gaps in our present environmental knowledge, including reliable toxics emission data from large and small emitters, ambient air pollutant data, food contaminant levels, and home environment measures as above.
5. Statistics Canada environment and health surveys should emphasize understudied populations (e.g. rural populations), understudied areas (e.g. contaminated lands) and vulnerable populations (e.g. indigenous, children).
6. Statistics Canada's new prospective framework should be developed further and used to help analyze gaps and to help prioritize the filling of those gaps through survey enhancements, new surveys and improved linkages to existing data.

7. The next focused content cycle of the Canadian Community Health Survey should have an environment and health theme. Two options that would provide essential information for health-protective and health-promoting policy-making, include a *home environments* theme or an *injuries* theme, in particular residential injuries.
8. The National Population Health Survey should include a module on climate change adaptation actions by households.
9. The Canadian Health Measures Survey should include consent from participants to be contacted again for follow-up study in order to gather longitudinal information and better link with other sources of longitudinal data.

#### **D. Better linking and integrating other sources of environment and health data**

10. Statistics Canada should make better use of, and further develop capabilities in, geo-spatial data creation, linking, analysis, output and dissemination.
11. Statistics Canada should take a proactive role in integrating various sources of health and environment data and serving as a repository for Canadian data. This should include adopting large orphaned data sets where they lack follow-up.
12. Existing sources of administrative data should be linked where possible to Statistics Canada surveys to enhance the data picture. For example, the agency should do a long-term follow-up of the Canadian Health Measures Survey with medical records to evaluate the long-term trajectory of various environmental influences on the health of Canadians.

#### **E. Enhancing collaboration with researchers, training programs and other federal agencies**

13. Statistics Canada should continue to work with Environment Canada to reform the National Pollutant Resource Inventory and create a more comprehensive, robust and reliable source of data on environmental emissions that includes smaller sources of emissions and is a better guide to population-level exposures.
14. Stronger partnerships should be developed with other agencies doing relevant environment and health research such as the Canadian House Dust Study and the Maternal Infant Research on Environmental Chemicals study with the goal of building on current pilot projects in creating national surveys.
15. The agency should improve partnerships with researchers via the Research Data Centres and by better matching survey cycles with research funding cycles. Statistics Canada might consider grants to Research Data Centres, for example, to conduct research on health and environmental linkages, and to train students or trainees to use national surveys to conduct research on health and environmental linkages.

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