Quality measures
National Population Health Survey - Household Component - Cross-sectional
(Survey number 3236)

Coverage

The target population of the NPHS Household component includes household residents in all Canadian provinces in 1994-1995, and excludes persons living on Indian Reserves and Crown Lands, residents of health care institutions, full-time members of the Canadian Armed Forces and inhabitants of some remote areas in Ontario and Quebec.

Coverage errors occur at a number of stages in the survey: during frame design, sampling unit definition, data collection and processing. An indicator, the *slippage rate*, is used to measure coverage error. The *slippage rate* represents the discrepancy between (*the survey's*) population estimates (*without external data, i.e., based on pre-post-stratified weights*) and the most recent census-based population estimates. The discrepancy is expressed as a percentage of the census-based estimate. As with most surveys, NPHS observed some under-coverage which is manifested by a positive slippage rates (*about 10% for the longitudinal sample selected in 1994-1995*).

The study on slippage is documented as part of a Methodology working paper that will be available in the fall of 2003.

To reduce the effect of the coverage error, sampling weights are adjusted during their computation to population estimates provided for the survey's period reference.

Unit Response

Note: the calculation of the Cycle 1 response rate is not the same as that for the other three cycles. Cycle 1 response rate is based on the 20,095 in-scope persons selected to form the panel, while response rates for subsequent cycles are based on the 17,276 individuals who constitute the longitudinal panel members.

Cycle	Response rate
Cycle 1	83.6%
Cycle 2	92.8%
Cycle 3	88.2%
Cycle 4	84.8%

Attrition is a loss in sample size due to non-respondents i.e. refusals, no-contacts, unable to trace cases, etc. The cumulative attrition rate is presented for each cycle. Each attrition rate is calculated using the number of individuals found in the Full subset of respondents i.e. those who completed the questionnaire in all cycles. The main cause of

attrition is due to an increasing number of respondents who refuse to continue to participate to the survey.

Cycle	Attrition rate
Cycle 2	9.3%
Cycle 3	15.4%
Cycle 4	21.4%

In an attempt to reduce attrition caused mainly by refusals, the material distributed to respondents is being redesigned for NPHS Cycle 6. Furthermore, strategies to convince respondents to partner with STC and continue to respond to NPHS survey are being explored.

Methods used to adjust for unit non-response: The weighting strategy developed for each Cycle of the NPHS involves various adjustments, including household and person level non-response adjustments. Unit non-response is addressed by adjusting the weight of persons who responded to the survey to compensate for those who did not respond. This adjustment is done by non-response classes which consist of groupings of units that share the same propensity to respond to the survey, minimizing the bias associated with non-response.

Methods used to improve unit response: Various strategies are in place during data collection to improve response rates such as: interviewer training, use of introductory letters, use of languages other than French and English to conduct interviews, non-response follow-ups, response rate monitoring, and transfer of caseloads to other offices.

Sample Size and Sampling Error

The longitudinal sample is composed of the 17,276 (*out of 20,095*) persons that were selected in Cycle 1, and had completed at least the General component of the questionnaire in Cycle 1.   This panel was surveyed in Cycles 2, 3, 4 and 5 and will be surveyed in future NPHS cycles. Additional samples added to Cycles 1, 2 and 3 for cross-sectional purposes are not part of the longitudinal sample.   The longitudinal sample is not renewed over time. No panel members were or are to be classified out-of-scope. The longitudinal sample size remains the same i.e. 17,276 for all cycles.

Methods used to estimate sampling error: Exact variance and coefficients of variations (CVs) of estimates produced from these data files are calculated using the bootstrap method. For each cycle, share partners and Research Data Centres are provided with a file that contains the bootstrap weights, a program that computes variance/CV for a certain number of statistics and a complete documentation. NPHS tables on CANSIM include confidence intervals or a standard indicator of the precision of the estimates based on CV's and the Statistics Canada guidelines. For example, estimates with a CV of more than 33.3% are suppressed from the tables and the table cells are marked with an 'F'.

Item Response

Item non-response for the Cycle 4 questionnaire was around 0.09%. Higher non-response was observed for a few variables such as household income (*3.8%*), and personal income (*1.5%*), and some stress variables (*around 0.6%*).

Various actions are taken to keep item non-response to a minimum. Interviewers are trained on the purpose and concepts of all the questions. NPHS data are collected using a Computer-Assisted Interview (CAI) system which ensures that all and only appropriate questions are asked.

Methods to adjust for item non-response: At the beginning of the survey, it was decided in conjunction with STC analysts that there would be no adjustments made for item non-response.

Identifying and Correcting Errors

Most editing for the NPHS is conducted at the time of the interview by the CAI application. Some types of inconsistent or unusual reporting are edited after data collection at Head Office. Inconsistencies are usually corrected by setting answers to a question to 'not stated'. The exception to this are the relationship edits, in which inconsistencies go through a manual correction process. No imputation is done on NPHS Household Component data.

Other Accuracy Issues

Detailed documentation was produced for each cycle of the NPHS Household Component in order to provide users with all the relevant background information on the survey (*background, methodology, data quality, data dictionary, derived variables specifications, record layouts, etc.*). Also, similar information will be loaded onto the Integrated Metadatabase (IMDB).

A paper, presenting some NPHS data quality indicators, such as number of attempted contacts, length of interview, unit/item non-response (*refusal/don't know*), and edit failures, has been prepared by the Household Survey Methods Divisions (*see References*). It also includes information about tracing and proxy reporting. Other aspects of data quality such as response rates and attrition rates can be found in the Cycle 4 Longitudinal Documentation.

Other aspects of data quality involving the profiles and characteristics of certain panel members are also of interest. Some internal studies involving data quality have been conducted. These include the profiles of non-respondents, refusals, individuals who are unable to be traced, proxy respondents, those who are unwilling to share their data, and those unwilling to have their data linked to other files. While some of these profiles, such as the profiles of non-respondents at the time of weight creation in order to adjust for

non-response, have already been investigated, more formal studies will be completed in the future.

References

Cycle 4 (2000-2001) Household Component Longitudinal Documentation, Health Statistics Division, Statistics Canada, unpublished, May 2002.

NPHS Data Quality: Exploring Non-sampling Errors, Working paper, Methodology Branch, HSMD-2003-004E, Sandra Tolusso and François Brisebois, Household Survey Methods Division, Statistics Canada, July 2003