

An Adult Risk Factor Surveillance System for Ontario

May 2001

RRFSS Working Group 2000

The following organizations and people have contributed to this project:

Durham Region Health Department (DRHD) (905) 723-5338
Philippa Holowaty x 2234, philippa.holowaty@region.durham.on.ca
Donna Reynolds (AMOH) x 2141, donna.reynolds@region.durham.on.ca
Kathy Moran (Chair RRFSS Working Group 2001) x 2309
kathy.moran@region.durham.on.ca

Katie Roberts Bosman
Anne Marie Parkinson

Simcoe County District Health Unit (SCDHU) (705) 721-7462
Brenda Guarda x 227, bguarda@simcoehealth.org

Haliburton, Kawartha, Pine Ridge Health Unit (HKPR) (905) 885-9100
Leslie Orpana x 221, lorpana@hkpr.on.ca
Brian Laundry

Institute for Social Research (ISR), York University (416) 736-5061
David Northrup (416) 736-5467, northrup@yorku.ca
Renee Elsbett-Koeppen

Ontario Ministry of Health and Long Term Care, Public Health Branch
Elizabeth Rael

Central East Health Information Partnership
Glen Shortt
Sherri Ennis

We would also like to acknowledge the support of the original RRFSS pilot project partners, Health Canada, Cancer Care Ontario, MOHLTC, and the continuing support of individuals from these organizations, especially Bernard Choi from Health Canada

Future directions for this project will result from the partnerships that form. At present the following health units are partnering in this project, under contract with the ISR:

Durham Region Health Department, Simcoe County District Health Unit, Haliburton, Kawartha, Pine Ridge District Health Unit, Regional Municipality of Peel Health Department, Middlesex-London Health Unit, Regional Niagara Public Health Department, Sudbury & District Health Unit, Halton Regional health Department, York Region Health Services Department.

The project was supported by funds from the Ontario Ministry of Health and Long Term Care, Public Health Branch (MOHLTC, PHB)

Abstract

Timely, relevant data are necessary for planning and evaluation of public health programs in Ontario. Although data are available through the Ontario Ministry of Health and Long Term Care (OMHLTC), including the new Canadian Community Health Survey (CCHS), there will still be gaps of particular and emerging interest to Ontario's public health system. An on-going, adult population surveillance system at the local level will provide a tool to obtain rapid, relevant, cost-effective information specific to local public health programs. This surveillance system will increase the capacity of health units to address and monitor short-term outcome objectives from the Mandatory Health Programs and Services Guidelines and from local program plans.

One-time surveys conducted by health units are costly and time consuming and do not provide comparable information over time or geography. A coordinated and on-going surveillance system based on cooperation between health units, as seen in the Rapid Risk Factor Surveillance System (RRFSS), will help address these issues. Currently nine health units are partnering in the RRFSS.

The RRFSS is evolving in the areas of questionnaire development, data analysis, and dissemination and utilization of information. Partnering, networking and coordination are the cornerstones for this development.

Executive Summary

Background

Timely, relevant data are needed by health units to ensure compliance with the 1997 Mandatory Health Programs and Services Guidelines (MHPSG) (1), as mandated by the Health Protection and Promotion Act (HPPA) and monitored by the Public Health Branch (PHB), Ontario Ministry of Health and Long Term care (MOHLTC).

Compliance refers to:

- the Program Planning and Evaluation general standard to ensure that local programs address the health needs of the community with cost-effective, efficient, evidence-based approaches
- the implementation of this standard across all programs.

While data generally exist for many chronic disease outcomes (e.g., hospitalization, mortality, cancer incidence, etc), critical data for local program planning, implementation, evaluation, and accountability have been lacking. The biyearly Canadian Community Health Survey should help address this problem, but it cannot be expected to cover all the information needs of Ontario's public health units, particularly in the areas of emerging issues, health promotion/health communication, and unique/innovative (to the province or to the health unit) public health strategies. Health units, therefore, require a surveillance system that will provide on-going, timely, local information that can capture public health outcome indicators for program planning, implementation and evaluation (2). Through partnerships between participating organizations, networking with experts, and a coordinated approach, the RRFSS system is intended to maximize efficiency, quality and comparability, while providing flexibility to ask some health unit specific questions and minimizing the individual organization's need for ad hoc adult population surveys. One time surveys are resource intensive, take considerable time to prepare, and usually only address one program area at a time.

The data generated by the surveillance system will enable health units to:

- Measure **effectiveness** of strategies
- **Monitor progress** toward indicators and objectives
- **Inform/Influence** local interests
- **Monitor trends** over time
- **Prioritize** health issues
- Direct **operational plans**/activities

This surveillance initiative is one of several separate, but interrelated surveillance, accountability and information initiatives at the PHB. As the different projects have been running simultaneously, this surveillance system has taken into consideration preliminary work on these other initiatives wherever possible. Of particular relevance were: reports from the Technical Review Committees from the Mandatory Health Programs and Services Guidelines (MHPSG), and the Public Health Research and Education (PHRED) initiative on outcome measurement for the MHPSG (PHRED, 2000) (3).

Establishing the Rapid Risk Factor Surveillance System (RRFSS) Working Group

DRHD was the pilot site for the 1999 adult “Rapid Risk Factor Surveillance System” (RRFSS), (which was a partnership between Durham Region Health Department (DRHD), Cancer Care Ontario, PHB, and Health Canada). Consequently, DRHD was asked by the PHB to build on the pilot’s experience and assess the need and requirements for a successful adult risk factor surveillance system for public health units across Ontario. Concurrently, DRHD, Simcoe County District Health Unit (SCDHU) and Haliburton, Kawartha, Pine-Ridge Health Unit (HKPRHU) were implementing the RRFSS in their health units owing to pressing information needs. These three health units became partners in the initial Ontario RRFSS Working Group and in this project.

The RRFSS Working Group conducted extensive internal (i.e., within the health unit) and external (i.e., other stakeholders such as PHB, District Health Councils, Social Planning Councils, local agencies, etc.) consultations, to determine local information needs and anticipated uses of the data. Question topic selection and individual question selection was based on a set of criteria (Section 2.1). The data gap, and the utility for programming, of any chosen question, was documented in the data dictionary (section 2.1, appendix 3)

Rapid Risk Factor Surveillance System

Surveillance, including the RRFSS, includes systematic tracking, analysis, dissemination, and utilization of information for planning and evaluation (2).

Methods:

The RRFSS uses a monthly random digit dialing, computer-assisted telephone interview (CATI) of adults conducted by an experienced survey house. The

questionnaire has been designed for surveillance of key information needed for the planning and evaluation of Ontario's public health programs. It aims to balance consistency with flexibility. The system must balance the flexibility of partners to ask questions of local and current interest with the need for some consistency over time and between partners. Flexibility is achieved through optional modules and the ability of health units to ask health unit specific questions, while consistency is achieved through agreement on core questions. Inclusion criteria have been developed to assist with question development and to ensure questions asked are consistent with the purpose of the RRFSS. The information collected is non-nominal.

Purposes:

The RRFSS serves several purposes:

- Provides standard comparable information on key public health issues. In Ontario, these issues are mainly outcome objectives related to the MHPSPG requirements and standards.
- Provides timely, relevant, data for program planning, evaluation and decision making.
- Provides time-trend data so that changes over time can be detected and used for planning and evaluation of programs.
- Minimizes the need for one-time surveys by individual programs and health units.
- Provides a vehicle for obtaining timely information on emerging issues (e.g., influenza immunization, water quality, rabies vaccination).
- Collects data each month at the postal code level thereby allowing flexibility in aggregating data by time and geographical area.
- Can monitor and adjust for seasonal variations (e.g., fruit and vegetable consumption)
- Maximizes efficiency, through a coordinated system.

Analysis:

Health units receive data within a few weeks after the end of the monthly data collection. Automated analyses for common indicators of the core and optional questions is under development so that information can be quickly conveyed to those who can use the information. An Analysis Group, a sub-group of the Working Group, made recommendations for the analysis of each question in the current survey. These recommendations are documented in the data dictionary for each question, and are used as the basis for production of the SPSS syntax files for automated analysis. Provincial Health Indicators from the Provincial Health Indicators Working Group (PHIWG) were used, when applicable, to provide numerator and denominator information for indicators. Health units may perform additional analyses themselves, and partners choosing to use their own questions, rather than core or optional modules, are responsible for their own analyses. The provision of SPSS to all health units, by the Public Health Branch

was an important facilitator for centralized analysis. The project was also facilitated by support with the initial analysis from the Central East Health Information Partnership (CEHIP) and by on-going web support (see below).

Dissemination:

Dissemination strategies include the use of all available forms of communication within and between health units and with the communities they serve. This includes:

- using and reporting RRFSS information in program planning and evaluation cycles of health units
- dissemination on internets and intranets (including on the CEHIP website)
- using the data in reports, pamphlets, presentations, media releases, etc to educate, advocate, raise awareness, change attitudes and behaviours

In addition, proposed and actual data utilization, and methods of dissemination are under review to maximize data usage.

What the RRFSS is not designed to provide:

- Information on all outcomes of interest to public health. The interview is delivered over the telephone and takes approximately 20 minutes.
- Information about youth risk behaviours, except where adult proxy information could reasonably be expected to be accurate.
- Complex data for etiologic studies.
- Information that requires complex, detailed questioning.
- Information about target populations that only make up a small fraction of the population or about behaviours that are only practiced by a small fraction of the population.

Enabling Factors for Development of a Provincial RRFSS

If the RRFSS is to be successful, several enabling factors must be considered including:

- **Need.** The RRFSS will only continue if it serves a real need at the program level and contributes to local and provincial accountability. Health units with a strong culture of accountability are most likely to realize this need.
- **Involvement of stakeholders.** Program managers who need the information must be involved in the questionnaire development and must be able to demonstrate how the information will be and is used for program delivery.

Coordination of this process within the health unit is the responsibility of the health units' representative on the RRFSS Working Group.

- **Partnerships.** The RRFSS depends on partnerships between interested health units. Other partners may include local agencies (e.g., District health Councils), the MOHLTC, provincial agencies (e.g. Cancer Care Ontario, Centre for Addictions and Mental health), and possibly partnership with national initiatives.

The Central East Health Information Partnership (CEHIP) has assisted with data analysis and dissemination of the RRFSS pilot. The three original health units plus six additional health units have collaborated on questions for the current RRFSS and are sharing the data through mutual agreements. All of these partnerships should be maintained.

The RRFSS Pilot in 1999 was coordinated by a National RRFSS Working Group. Although this group has not met since summer 2000, it will be important to remain part of any national working group.

- **Networks.** Development of simple questions for telephone interviews need to be informed by relevant research in Ontario, Canada, the USA and other countries. The Ontario network should include the PHRED program, the Centre for Addictions and Mental Health, Cancer Care Ontario and other centres where public health or health promotion research is conducted. Nationally, it is important that contacts with those involved with the Canadian Community Health Survey (CCHS) are strengthened to promote mutual sharing of information and experiences, and to avoid duplication. The RRFSS could be a vehicle to try out and validate new questions of interest to Ontario and possibly the larger public health community.

The RRFSS is modeled after the USA Behavioral Risk Factor Surveillance System (BRFSS). BRFSS staff have provided in-depth consultation to the RRFSS and it will be important to maintain this communication, such as through RRFSS representation at the annual BRFSS meeting in the US.

- **Commitment.** The RRFSS is evolving and changing and needs to be given a multi-year resource commitment by participating RRFSS health units and partners. Commitment includes:
 - personnel/resources to document activities, coordinate within and between health units, provide analysis and disseminate materials;
 - a corporate culture within the health unit that relies on data to inform evidence-based decision-making and places program planning and evaluation as core elements of program delivery and accountability measures.
- **Coordination.** The RRFSS requires coordination and documentation at all stages. The progress of RRFSS would be greatly enhanced with a dedicated coordinator and secretariat support. A designated person within each RRFSS participating health unit will still be required to coordinate the surveillance system locally and participate on the RRFSS Working Group. An

Advisory Group has been formed from amongst the Working Group members. The Advisory group currently acts in a coordinating function between the survey house and the Working Group. Even with a dedicated coordinator, this Advisory Group would still be necessary to act as an executive for on-going direction to the coordinator. The coordinator would provide support to the Advisory Group and the Working Group and to any additional advisory groups - see below.

- **Rapid, Extensive Dissemination of Information** to those who need to know. This will benefit from a dedicated analyst who will create and update syntax files, provide assistance to individual health units, create web-based dissemination of the information, and work on key analysis issues, such as trend analysis, and analysis of stratified samples from combined health unit areas etc. The data analyst would benefit from guidance from statisticians and survey methodologists - see below.
- **Evaluation.** The RRFSS needs to be evaluated to assess whether it is accomplishing its objectives, both overall and at the local level, and to identify where improvements need to be made. An important outcome indicator will be actions taken in programs as a result of information from RRFSS. A sub-group is working on the evaluation plan.

Current co-ordination of the project, documentation and data-analysis have been funded through the contract between DRHD and the OMHLTC, PHB.

Implementation Issues:

- **Using one survey house** to collect the data using computer-assisted telephone interviewing (CATI) is strongly recommended. The Institute for Social Research (ISR) provides RRFSS partners with significant consultation with survey development, and has even initiated a study of fruits and vegetable questions through a collaboration between RRFSS partners and researchers from Cancer Care Ontario and Statistics Canada (CCHS). The ISR is able to accommodate the flexibility and timeliness requirements of RRFSS. The capacity of the ISR for RRFSS expansion, however, may be limited. If more than one survey house is required, data collection methodologies must be standardized.
- The **cost** to some health units might be prohibitive. At approximately \$40,000 for one full year of data of 1,200 completed interviews (more for different sampling frames or strategies), health units may choose to combine resources or use other partners to offset cost. For questions of particular concern to the MOHLTC, the province may choose to fund some questions to enhance their own accountability initiatives, if there is space on the questionnaire, or alternatively, become a full partner to gather a provincial sample of data. Since only health units that value the information will likely participate, some health units of the province will not have this data.

Consideration of a provincial sample of the RRFSS could, however, provide data relevant to the entire province.

- Any partner joining the RRFSS should first consider their information needs and how choice of RRFSS questions and feedback of information will be coordinated within their organization.

Future Considerations:

- **Advisory groups** In addition to the Advisory Group consisting of Working Group members, two other advisory groups would be helpful, based on the BRFSS experience: 1) an advisory group of subject specialists (such as PHB program consultants) to help with survey development; 2) an advisory group of statisticians and survey methodologists to advise on sampling and data analysis. Advisory Group membership would be voluntary, but financial support might be needed to cover the cost of meetings. The coordinator would provide coordination and support for all advisory groups. These other two advisory groups should develop gradually as the project grows.
- Further work is needed to **validate** current and future questions. In the US some of the peer reviewed public health research conducted by the Prevention Centers, is targeted at validation of BRFSS questions. Funding of survey question validation research would no doubt enhance survey development in Canada, especially if it was through peer reviewed competition and with coordinated dissemination of results.
- Partnership with health units outside of Ontario for the RRFSS is a possibility, especially given the federal government's commitment to networking. However, this has not been attempted yet, and it is not clear whether there could be a core set of shared questions and possibly resources, or whether there would just be sharing of methods, a common question bank etc.

To date, nine health units are full partners in RRFSS 2001. The RRFSS will have the capability to respond to rapid changes in local information needs while balancing both continuity over time and consistency between health unit areas, in a systematic, cooperative fashion. This will have the benefit of improving public health services to the community and quantitatively demonstrating these benefits.

This is a rapidly evolving project and statements made in this document only reflect the situation from the vantage of the original (3 health unit) Working Group, as of March 2001. Opinions of the larger Working Group and the on-going issues faced by the group should also be considered, in order to understand this project.

Organization of the Report

This report is organized into a series of sections.

Chapter 1 provides the underlying rationale that lead to the creation of the RRFSS and the results of the pilot phase in Durham Region in 1999. The highly successful USA Behavioural Risk Factor Surveillance System (BRFSS) is discussed as a key building block for the current RRFSS.

Chapter 2 highlights the present status of RRFSS in Ontario, detailing the health units that are currently involved, the work required to develop the questionnaire, and to collect, analyze and disseminate the data for the 2001 survey year and quality assurance methods. The complementary role of RRFSS in relation to the CCHS is also discussed.

Chapter 3 highlights future directions for RRFSS. Many of the suggestions are based on the methods used by the Centers for Disease Control (CDC) in their BRFSS.



Table of Contents

Chapter 1 Background

1.1 The RRFSS Pilot 1999.....	1
1.2 The Behavioral Risk Factor Surveillance System.....	2
1.3 The Canadian Community Health Survey.....	3

Chapter 2 Current Status of the RRFSS

2.1 Questionnaire Development.....	4
2.2 Data collection.....	7
2.3 Analysis and dissemination.....	7
2.4 Quality Assurance.....	8
2.5 Evaluation.....	10
2.6 Human Resources.....	10
2.7 Ethics.....	11

Chapter 3	Future Considerations for the RRFSS	
3.1	Questionnaire Development	12
3.2	Data collection	13
3.3	Data analysis	14
3.4	Dissemination of information	14
3.5	Quality Assurance	14
3.6	Partnerships and Networks	15
3.7	Human Resources including Advisory Groups	16
3.8	Estimated Costs	17
	References.....	18
	RRFSS questions in relation to CCHS and BRFSS.....	APPENDIX 1
	RRFSS Questionnaire Map March 2001	APPENDIX 2
	Sample from the Data Dictionary for the RRFSS 2001.....	APPENDIX 3

Background

The RRFSS Pilot 1999

1.1

The development of the 1999 RRFSS pilot project was described in the evaluation of the pilot (4). The impetus for the study came from several different sources. Ontario health units were still using risk factor information from the 1990 Ontario Health Survey for local area health status reporting in 1998. At the program level, the data were not current enough to be relevant for program planning and evaluation, and program specific surveys were often conducted on an ad hoc basis. At Durham Region Health department (DRHD) the need for four such surveys had been identified for 1999. In addition, several outcome measures in program logic models for other health promotion programs could not be measured through available data. Other health units were also conducting ad hoc surveys that were not comparable over time or geography. Provincial and National organizations were also lacking timely data on risk factors for program planning and evaluation and projection of service needs. Given the success of the Behavioral Risk Factor Surveillance System (BRFSS) in the U.S., Health Canada was interested in piloting a similar system in Canada.

In the fall of 1998 Cancer Care Ontario (CCO) had a new Cancer Surveillance Unit and was about to create a Prevention Unit. However, there was no centralized surveillance system for cancer risk factor information. Through talks with various levels of government, it became clear that there was a mutual interest in pursuing, in Canada, a system similar to the BRFSS. Durham was chosen as a pilot site because of the clearly identified gaps in information for programming, and strong administrative and epidemiologic support for the project.

The pilot was a partnership between Health Canada, MOHLTC, CCO and DRHD, with the Institute for Social Research (ISR), York University, contracted to collect the data. Approximately 200 computer assisted telephone interviews (CATI) were completed each month for the five months, June to October 1999. Respondents were residents of Durham Region aged 18 and older and were identified by random selection of residential phone numbers for Durham Region followed by selection of the adult in the household with the most recent birthday. A smaller group from DRHD and CCO decided the content and wording of the questionnaire, with the assistance of David Northrup from the ISR. Where possible, questions were taken from other surveys, especially the BRFSS and the Canadian National Population Health Survey (NPHS).

Data from the pilot were received monthly at the Health Department in clean SPSS format and the full data set for all 5 months was received on November 4, 1999. The response rate for the RRFSS was an average of 69% over the 5 months. Distribution of the respondents by age and sex and by municipality within Durham was similar to expected from post-censal estimates for 1998 (1999 estimates were not available). Education and income were similar to those for the 1996 Census for Durham region and

similar to the distribution of Durham respondents in the 1996/7 Ontario portion of the NPHS. However, the highest income level was over-represented and the lowest level was under-represented. Any increase in income over the time-period (1996 to 1999) may have contributed to this difference.

Since program managers at DRHD were extensively consulted during the development of the RRFSS questionnaire, they were primed for the results of the survey and knew how this information would be used for programming and evaluation. Information at the municipal level (census subdivision) was available for the first time. In addition, the immediacy of the information was very useful for media releases.

Health Canada commissioned Dr Paula Stewart and Paul Sales to evaluate the RRFSS pilot. The report was positive, and recommended that Durham continue to develop the system for its own health department and to work with other health units to develop a system of general use for public health (4). It was also recommended that RRFSS could provide a complementary role to the new Canadian Community Health Survey (CCHS) by collecting data on variables that are not included in the CCHS or that need to be collected more frequently than every two years. Suggestions for improvement of the RRFSS included the need for increased documentation, validity and reliability testing of the questionnaire, and automated analysis.

The Ontario Ministry of Health, Public Health Branch (MOHLTC, PHB) was able to fund some developmental work related to the three identified areas of improvement. In return the Ministry requested a report on the utility and feasibility of developing a risk factor surveillance system in Ontario. This was one project of many that were intended to inform a possible surveillance strategy for Ontario public health.

The Behavioral Risk Factor Surveillance System

1.2

The Behavioral Risk Factor Surveillance System (BRFSS) is a collaborative project of the Centers for Disease Control and Prevention (CDC), and U.S. states and territories. The BRFSS is an on-going data collection surveillance system designed to measure behavioral risk factors in the adult population 18 years of age and over living in households. The BRFSS was initiated in 1984, with 15 states collecting surveillance data on risk behaviours through monthly telephone interviews. By 1998, 50 States, the District of Columbia, Puerto Rico, Guam, and the Virgin Islands were participating in the BRFSS. The questionnaire has three parts: 1) the core component consisting of the fixed, rotating, and emerging core; 2) optional modules; and 3) state-added questions.

The objective of the BRFSS is to collect uniform, state-specific data on preventive health practices and risk behaviors that are linked to chronic diseases, injuries, and preventable infectious diseases in the adult population. Several states have also begun to collect data at the county level. The questions in the BRFSS are also linked to indicators and objectives in Healthy People 2010. BRFSS staff were very helpful in providing guidance to the development of RRFSS.

The CDC has developed a comprehensive web site that addresses all aspects of the surveillance system, including questionnaire development, sampling and weighting procedures, background information, staffing, interviewer training, data collection and management, and quality assurance. State-specific prevalence data are also available. The BRFSS web site is <http://www.cdc.gov/nccdphp/brfss/>

The Canadian Community Health Survey

1.3

The Canadian Community Health Survey (CCHS) is a new national cross-sectional population health survey that began in September 2000. The existing national survey, the National Population Health Survey (NPHS), served both longitudinal and cross-sectional functions. However, the NPHS sample size did not usually support sub-provincial estimates so the CCHS was developed to allow the NPHS to become solely longitudinal. The MOHLTC bought into the 1996/7 NPHS to provide data at the health unit level. This information was made available to health units in July 1999 and provided useful comparative data for the RRFSS pilot for questions that were in common. Many of the current CCHS questions are the same as the 1996/7 NPHS. Panels of experts in various subject fields are involved in the development of questions for further CCHS surveys.

CCHS data collection is every 2 years at the local or "regional" level and independent samples of 130,000 households will be surveyed. Every other year, 30,000 households will be sampled in a survey related to a special topic (mental health in 2002, nutrition in 2004). The larger CCHS survey is intended to provide health risk behavior information, health services utilization and health status information at the regional level, which is at the level of the public health unit in Ontario. The size of the sample in any health area is proportional to the population size. It is not yet known how long it will take to receive the data at the local level. The questionnaire is formatted into two sections: core content, consisting of questions that are the same for all regions and optional content that includes topics of interest to individual health regions. Permission will be asked of respondents to link their data to administrative health records.

Statistics Canada's web site at <http://www.statcan.ca/english/concepts/health/index.htm> has more information on CCHS's content, participating health regions, samples sizes and optional content selections.

The CCHS is expected to provide consistent, useful risk factor information at the local health unit level in Ontario (other provinces have different health areas). As the survey is mostly face-to face, more questions can be asked than on a random digit dialing telephone interview. This means that RRFSS questions can focus on information that is needed more frequently than every 2 years, and on information that is not addressed by the CCHS, including issues of immediate or emerging public health interest.

Current Status of the RRFSS Project

This section describes the development of the RRFSS project up to March 2001 and includes questionnaire development for 2001, data collection, analysis and dissemination methods, and the necessary human resources and coordination.

Questionnaire Development

2.1

Three health units (Durham, Simcoe, HKPR) were the main collaborators for the content of the RRFSS that started January 2001. Criteria for question inclusion were designed and adhered to when determining the content of the questionnaire:

- ◆ Clear and documented relationship between the proposed indicator/question and a health unit program objective. It must be clearly stated how the information will be used for program planning, implementation or evaluation.
- ◆ Need to measure the variable over time, and changes in the indicator could reasonably be expected.
- ◆ Degree to which alternative data sources are unsatisfactory/unavailable - how the indicator/question address data gaps.
- ◆ Degree to which the prevalence of the variable in the population will be adequate for the planned analysis.
- ◆ The proposed topic area must not adversely affect the length of the questionnaire.
- ◆ Sensitivity of the topic area.
- ◆ Questions must be amenable to a telephone survey (simple, information is easily recalled, acceptability of subject matter, clear, concise)
- ◆ Expected validity and reliability of the question(s).

A data dictionary was developed with the following information for each question: (Appendix 3)

- Indicator;
- Purpose of indicator;
- Objective;
- RRFSS question;
- Analysis (numerator, denominator, (and consideration of DK, refused)
- CCHS, NPHS 1996/7, BRFSS questions if any;
- Validity/reliability tests;
- Related RRFSS questions

The information on reliability and validity of the questions is still under review. The data dictionary is divided into core and optional sections.

Throughout the summer, the three representatives from their respective health units met with managers and health unit staff to discuss their need for information that would suitably be obtained through a telephone interview of a random sample of adults. MOHLTC consultants also contributed to the development of specific sections of the questionnaire. Local health and social services agencies were contacted to see if they had a few questions that they needed to have answered to help with their own programming.

In addition, the Mandatory Health Programs and Services Guidelines (MHPSG) 1997 were reviewed and data sources were listed related to objectives, standards and requirements, to determine where there were data gaps that could be addressed in the RRFSS. Draft versions of the revised program standards for chronic diseases and reproductive health were also reviewed. A document was also produced that compared MHPSG objectives, and requirements and standards with the availability of relevant data. This document is not included but is available upon request. This document was originally based on the 1997 MHPSG and was then revised using reports from the technical review committees 2000. However, these reports have not yet been approved, and some objectives have not been operationalised. The CCHS has questions related to most Mandatory objectives; it is far less complete at the level of requirements and standards. Information relating to activities associated with requirements and standards may be obtainable through program management data at the local health unit. However, with the emphasis shifting to short-term outcome objectives for accountability and benchmarking, there is an increasing need for information related to short-term outcomes, often most easily obtained through population surveys.

Once general topics had been agreed upon, the specific questions were developed. It was very helpful to record any associated mandatory objective or standard and requirement (apart from questions arising from local partners). It was also found to be essential to state the program specific use for the information. This helped decide whether the information was needed or just "nice to know". The stated purpose was also useful for the Institute for Social Research when they reviewed our proposed questions as it made it easier for a survey methodologist to decide whether a question was likely to yield the required information.

Issues of special interest emerged throughout the questionnaire development. With a limit of 100 questions (see data collection below) not all issues could be accommodated. There were also some issues, such as related to reproductive health and violence in the home, where a general population survey over the phone was not considered the best method to obtain the required information. Throughout the process it was necessary to balance needed changes with the necessity to keep indicators constant over time and to have some questions that were the same as in other major surveys to assist comparisons. Where possible questions were taken from previously used instruments and an attempt was made to find out if the questions had been validated.

The three health units agreed on most topics, but wanted to make the instrument as generally useful to other health units as possible. The questions were therefore arranged into a core set of modules considered to be of general interest, optional modules and a small set of single questions that were included in the "question databank". There were some optional modules that all three health units were using. By the end of November, a

draft questionnaire was completed for the three health units. Sixty questions in the core with approximately the same number of optional questions arranged in modules, with each health unit asking approximately 40 questions from the optional sections. Health units did not have to use all questions within an optional module, but agreed to only drop questions at the end of a module because of context and skip patterns. The draft questionnaire was pre-tested by ISR in December and changes were made based on interviewer feedback.

In November/December 6 more health units joined the RRFSS with the intention of starting data collection in January (Middlesex-London, Niagara, Peel, Halton, York Region and Sudbury). ISR was only able to include for January the 3 health units that chose their questions from the existing questionnaire (all the core questions plus optional modules) and that signed contracts in time. Three other health units started in February and two are so far intending to start during the year. Question choices from the 9 health units for RRFSS as of March 2001 were summarized by the ISR (Appendix 2).

In December, a large group of interested parties began meeting by teleconference. ISR expressed the need for the group of health units to coordinate their requests to ISR. They also appointed an additional person to work part time on this project. In response it was decided to create a Working Group consisting of current RRFSS partners and a smaller Advisory Group that would rotate, but that started with representatives from the original three health units plus Peel, with a chairperson. This group liaises with ISR over question content. If an individual health unit wishes to have new questions, they first send these questions to the Working Group. If no other health unit is interested in these questions, then the health unit deals directly with ISR for these questions. Otherwise, a sub-group is formed to develop the questions. Subgroups are also formed when questions do not seem to be working well, such as the fruit and vegetable questions. These groups can then ask for advice from experts in the field, and of course, from their program staff.

Sudbury required a French version of the questionnaire. This takes longer to prepare as it needs to be first translated into French and then translated back into English to check for meaning. ISR arranged for the initial translation and a French version (based on Sudbury's questions) will be available to other health units for the April cycle.

Corrections to the questionnaire have been made based on observation of interviews and on continual feedback from ISR. All new questions or new versions of questions are tested on a sample of respondents prior to starting data collection. However, the cognitive testing of questions was not possible at this time, given the rapid expansion of RRFSS to other health units and the strike at York University. Consultation with experts from Canada and elsewhere for face validity of the questions is also necessary for some modules and for the development of others such as a physical activity module.

Data collection

2.2

The Institute for Social Research at York University administers the questionnaire, one hundred completed surveys a month per participating health unit. The cost of the survey is \$38,500 for 1,200 completed interviews, of approximately 100 questions, an average of 20 minutes for each interview. This cost is paid by each participating health unit. Each month the ISR sends via Email to each participating health unit a total-to-date SPSS data file and a copy of the CATI questionnaire for the month. The data file contains a weight variable that accounts for the number of eligible respondents in the household and the number of separate household phone-lines. ISR was not asked to provide a weight that accounts for the actual age and sex distribution of the population. (This weight can be applied later, if required, during the analysis.)

Sampling of households with telephones is random within each health unit region. The sampling frame is all residential telephone numbers within the region. This excludes cellular telephone numbers and fax numbers. Non-residential numbers are excluded as non-eligible when dialed. The monthly sample chosen is larger than the required number of completed interviews to allow for non-working and non-residential numbers as well as non-responses and refusals.

Up to 15 callbacks are made, mostly on separate calling occasions, including during the evening, during the day and on weekends. Most numbers for the month are called in the first few days and this allows about 4 weeks for call-backs, particularly “ring no answer” calls, before a number gets its final disposition. A supervisor verifies 10% of calls.

ISR records the final disposition for each phone number selected and summarizes these statistics, along with a description of the sampling methods, in a report at the end of the year.

Analysis and dissemination

2.3

The Central East Health Information Partnership (CEHIP) organized a three-month contract position to develop an automated system for analyzing the data and making the information available in a user-friendly form on the web. The system was developed June to August 2000, and is based on syntax files in SPSS for Windows that produce data tables and charts in html format for the web. The project used the data from the pilot project, but the idea was to establish a system for routine analysis of RRFSS data. Final editing of the syntax files for the pilot was completed at DRHD, and output is available on the CEHIP web site. Although the 2001 data collection will include html files for the web, the emphasis at present is on developing syntax files for the 2001 data that can be run by the epidemiologist for the local health unit staff. At the start of the project, and each month, sample sizes will be small, and confidence intervals large. There is information that may be useful for managers that is not suitable for general release due to small numbers. Html files will gradually be produced from the syntax files as sample size

increases, and these files will be sent to CEHIP who has offered to maintain the web site for this project.

Weighting of the data currently uses two alternate approaches. The household weight takes account of the probability of being chosen within a household. This weight is used for all self-reported data, but not for proxy information about the household or about children living in the household. The second weight uses this first weight but weights up to the total population by age and sex. This gives a better idea of numbers involved in the total population. The weighting to the total population will only give a better prevalence estimate than the simpler household weight if the estimated population of the region is correct (based on post-censal estimates) and if the sampling of the population for the survey under or over represented certain age groups or gender. In order to estimate confidence limits, the weights used to weight up to the population must then be uniformly reduced by a factor that restores the original sample size to the records in total. The data received from the ISR will include the household weight but not the population weight. The population weight can be added by health units or centrally, although reliable estimates of the population for 2001 by age and sex are not yet available.

For estimates involving the total household, such as smoke free homes, no weighting is needed. If an estimate of actual number of households involved is needed the estimate can be multiplied by the number of households from the previous census.

Proxy responses about children in the household do not need to be weighted if responses are reported by household. For instance, the percentage of households with a child under one year who rides in a car and the corresponding percent of households where the child under one is correctly seated while riding in a car. It would also be possible to use the reported number of children in the household to calculate child specific rather than household estimates, but the analysis must account for the cluster sampling.

The central analysis of the data, currently undertaken at DRHD is overseen by the Analysis Group (Durham, Simcoe and Peel) with the assistance of a biostatistician from Toronto. Pre-determining the analysis for each question (as shown in the Data Dictionary) before data collection helped to modify some questions. Some syntax files were set up using the pretest sample from December, but now that the first data set has been received, further modifications and additions are underway. Each time the questionnaire is modified, the analysis also needs to be considered and modified.

Quality Assurance

2.4

Quality assurance is important for all phases of the system, including questionnaire design, data collection, data analysis and dissemination of the information.

Questionnaire design:

The design of individual questions, the sequence of questions and introductions are all important. Where possible, questions were taken directly from other major surveys. We were interested in establishing the validity and reliability of these questions (acknowledging that the context may not be similar). Studies of BRFSS questions are listed on the BRFSS web site. Relevant articles were obtained and referenced in the Data Dictionary where applicable. A recent report on the reliability of self-reported behavioral

health risk factors from Australia, based on CATI telephone interviews similar to the BRFSS system, showed moderate to almost perfect reliability for health risk factor questions, and the highest reliability for demographic variables. Self-reported co-morbidity variables were less consistently reliable (5). The accuracy of self-reported health behaviors and risk factors is more questionable and also more difficult to measure. A literature review of cancer and heart disease risk factors used strict criteria for the inclusion of studies, including an adequate gold standard for comparison (6). Social desirability bias in the self-reports and telescoping of time probably contributed to the underreporting of risk. This report did not distinguish between self reports over the telephone versus in-person. An extensive review of self-reported risk factors, particularly via the telephone, has been compiled by BRFSS staff and will be published in *Epidemiologic Reviews*. Health Canada compiles questions used in National Canadian health Surveys (7). They are working on a review of the reliability and validity of these questions, particularly those used in current surveys. These reviews will be useful for assessing some of the RRFSS questions.

The face validity of questions in the RRFSS was assessed by the epidemiologists and program staff as well as by ISR staff. A check list for survey questions is a useful tool for increasing the clarity of the question (8). We are planning to test certain modules through face-to-face cognitive focus groups using a random sample of adults from areas close to the interviewing centre. In addition, respondents are asked at the end of interviews about questions they had difficulty understanding or responding to, and observation of interviews and feedback from interviewers also leads to some correction of questions.

Cancer Care Ontario analysed the RRFSS pilot database for errors and inconsistencies. The information from this project was intended to inform future rounds of the RRFSS. Certain questions had a high proportion of 'don't know' responses and these questions have been revised or removed. The CCO analysis also showed that more information should be given to the interviewers for some questions such as the geography (names of places) of the health units involved (9). The ISR is a scientific rather than commercial survey house, and encourages experimentation with survey order etc. Reliability studies would not be difficult on a sample of respondents, if it is decided that this is worthwhile, but validation of questions against gold standards is not feasible at this time.

Data collection:

Computer Assisted Telephone Interviewing (CATI) allows built-in edit checks during data entry that increase the accuracy of the data. During the survey it will be necessary for ISR to keep complete records of the monthly sample and all the possible call dispositions. The database received back from the ISR contains administrative information for each completed survey such as the number of phone calls needed to obtain the response.

Data analysis:

It is hoped that by automating and documenting most of the analysis, errors and inconsistencies will be minimized. Any errors detected can be corrected centrally.

Evaluation

2.5

Overall evaluation of the project:

An evaluation sub-group has been formed from the Working Group to consider the evaluation of the RRFSS project, using the CDC's Guidelines for Evaluating Surveillance Systems as a framework (with modifications). In addition, each health unit will have to evaluate the RRFSS from their own perspective and these evaluations will contribute to information for the overall evaluation.

Evaluation at the health unit level:

An advisory group at DRHD has overseen the development of a model for RRFSS data dissemination within the health department, including a plan to evaluate the effectiveness of the model. The model was based on information from the literature and from three focus groups of health department staff. The resulting documents and project plan have been shared with other health departments. The most important outcome is the use of the data at the program level. Programs with program specific RRFSS questions will be asked to complete a form for each set of relevant questions (one indicator) describing actions taken as a result of obtaining the information, and this information can be used to evaluate the usefulness of the data for programs. Question groups that have not resulted in action will be candidates for removal from the questionnaire. In addition, the description of program activities associated with an indicator will help in analyzing and interpreting the data in terms of time, place and target groups.

Other outcome objectives of the health unit specific evaluation mostly relate to staff's knowledge and attitudes towards the information they receive, and process indicators relate to data dissemination and to health unit practices designed to increase use of RRFSS data by program staff.

Human Resources

2.6

The RRFSS increases efficiency through a cooperative system, and contracts out the data collection to survey experts. However, human resources are necessary at all stages of the system.

Each RRFSS participating health unit has contributed staff time to discuss the questionnaire and to decide on optional modules and any health unit specific questions. Health units have also developed or adopted new modules or questions, sometimes in collaboration with one or two other health departments.

Each RRFSS participating health unit has at least one designated one person to be the RRFSS representative on the Working Group between health units and to co-ordinate the response within the health unit. These representatives may also be part of a smaller sub-group such as the advisory group or analysis group or they may be on a topic specific group.

The Chair of the Advisory and the Working Group is a coordinator function, organizing and chairing meetings and communicating with each health unit and with the ISR. Minutes of meetings are usually taken by another member of the group, but they are edited and sent out by the Chair. This role is essential for the cohesive functioning of the RRFSS group.

A summer employment opportunity and a student practicum at DRHD, have also been funded from the MOHLTC contract. The students documented and updated the Data Dictionary for RRFSS questions, conducted literature searches, and wrote and updated the document in appendix 1 (RRFSS questions in relation to the CCHS and the BRFSS). One position acted as the coordinator and secretariat for the three original health units while they developed the questionnaire during the summer. The other position has contributed to the data analysis and developed a model for RRFSS data dissemination within DRHD that has been shared with other health units.

Other documentation that has been necessary includes "Frequently Asked Questions" about RRFSS which was first developed at Simcoe County District Health Unit and which is available at the CEHIP web site.

Data analysis, including the development of syntax files for automated analysis is being undertaken at DRHD. The original templates for this analysis and the web-based display were developed by the Central East Health Information Partnership (CEHIP), and CEHIP has offered to update the web site as new html output files are produced with samples that are large enough for distribution. The Toronto Health Department has offered assistance to the Analysis Group in the form of statistical advice, syntax for bootstrap analysis of RRFSS data, plus simple explanations of complex issues (such as sampling and weighting) that can accompany RRFSS output. Regional Municipality of Peel Health Department is also assisting with syntax files.

Consultants at the PHB of the MOHLTC also contributed time to this project during the development of some RRFSS modules and the PHB has offered advice and encouragement for this phase of the project.

Ethics

2.7

Ethics approval for this project was received from York University's Ethics Review panel via the Institute for Social Research. Individual health units may or may not choose to submit this project for ethics approval at the local level. Respondents are not asked for their name, address or day of birth and the phone number is not retained in the database. Respondents are asked to give their month and year of birth (to calculate their age), and the postal code and municipality of residence so that different geographic aggregations are possible, such as urban/rural.

An agreement is in process between the partners to share record-specific data with each other, but not to publish information about other areas without their consent. Partners are continuing to discuss issues in relation to sharing of data and confidentiality. There is a recognition that as a publicly funded organization there is an obligation to share information with others for legitimate purposes.

Future Considerations for RRFSS

Questionnaire Development

3.1

Questionnaire development will remain an important part of the system. The questionnaire will need to address emerging issues in public health, accommodate future changes such as revisions to the Mandatory Health Programs and Services Guidelines and adapt to complementary sources of information, such as the CCHS. As more partners join the survey, there will be an increasing need to refine the system for questionnaire development. The process for adding or removing questions will need to be explicit. Questionnaire validity and reliability will need the input of subject specialists and survey methodologists.

An Advisory Group was formed amongst Working Group members. The purpose of this group is to facilitate questionnaire development between all Working Group members and the survey house. It may also be necessary to form a subject specialist Advisory Group, including PHB consultants. In addition, individual sub-groups are formed from amongst RRFSS partners for module specific development. These groups often ask for external expertise. For example, the current fruits and vegetable group is a collaborative project between ISR, RRFSS partners, CCO and the CCHS.

Lessons may be learned from the BRFSS experience, but the RRFSS project is not at the same stage, and may not go entirely in the same direction. The BRFSS has two advisory groups involved in questionnaire development. A 6-member group represents the states, and a program group has one member from each of CDC's programs (mostly disease based, such as AIDS, cancer etc).

Most new modules are introduced by a program. Anyone wishing to introduce a new module has to justify the questions in relation to established criteria. The questions should have been cognitively tested, as a minimum, before they are sent to the states for approval. At the annual BRFSS meeting, state representatives have a chance to ask questions about the new questions prior to voting on them. States have about 6 weeks before attending the annual meeting to assess the optional and proposed new modules that their state wishes to use.

At the local level, partnerships with other health and social services agencies are important if these data are to be used in the community. It may be reasonable to offer agencies questions on a cost recovery basis. Agencies wanting questions across the Province (or country) might be able to buy into the survey at the appropriate level. However, the RRFSS question criteria (2.1) should still apply. This approach is now used in the states for the BRFSS at the local level for local level questions. At the National level, the CDC has charged interest groups that require new modules for the core sections and financial contributions to the BRFSS have come from different programs within the CDC. The RRFSS partners are working on a systematic approach to dealing with

requests for buying questions. However, the questionnaire is currently 19 minutes and should not expand much beyond 20 minutes. In most instances, questions added mean that questions have to be removed. Ultimately the control of questions is at the local level.

It is intended that the RRFSS should be as flexible as possible to allow for the inclusion of emerging issues. However, continuity of questions is also important to assess trends and make comparisons. Questionnaire development is very time consuming and major revisions should only be made annually. However, small additions and deletions should be possible monthly for any partner or for all partners. The consequences of changes for the data analysis should be considered in advance.

There are language barrier issues that need to be resolved, particularly for a possible Toronto sample. The ISR administers the Centre for Addictions and Mental Health's ongoing adult survey of drug use in Ontario. Refusals due to language problems only account for a small percentage of refusals for Ontario. However, the percentage in Toronto is known to be higher. The ISR and Sudbury Health Department organized the translation of the Sudbury version of the RRFSS into French but translations take time and are not as rapidly updated.

As well as cognitive testing of all new questions, and annual cognitive testing of the revised questionnaire, it may be necessary to consider the validity of questions against a gold standard or some standard external measure. The need for simple but valid and reliable questions to measure physical activity and nutrition has been acknowledged as a barrier to ongoing surveillance, and is currently being considered both in Canada and in the United States. It will be necessary to follow the literature, consensus conferences, and speak with key researchers. Where possible RRFSS working groups and staff will document this research and make use of questions that are recommended from the research. The Prevention Centers Program in the US provides some money to researchers who compete to conduct validity and reliability studies on BRFSS modules. The research is peer reviewed. All papers related to BRFSS question validation is referenced on the BRFSS web-site. A similar system in Canada / Ontario would greatly enhance the quality of survey questions and allow sharing of information.

Data collection

3.2

The ISR is conducting the interviews for all the current RRFSS partners, but the ISR would not be able to handle the system if all health units in Ontario participated unless this happened gradually. Expansion of ISR's services to accommodate this expansion would only be worthwhile if the system is on-going. We were strongly advised by BRFSS staff to use a single survey house if at all possible. The flexibility, scientific attention to detail, and advice provided by ISR has been an important factor in the success of this project so far.

In the states they use 3 main survey houses that cover 20 states and the rest of the states use local survey houses, some of which are in Universities. Some state health departments do their own data collection - although BRFSS staff strongly advised us against going this route. The BRFSS staff manage to coordinate the activities of all the data collection groups through on-going communications (Email, memos, telephone), site visits and through approximately 2 days of meetings for survey staff at the BRFSS annual workshop. However, this additional coordinating role is costly. There are also differences in data collection quality across the states.

Data analysis

3.3

A statistical advisory group (as used for the BRFSS) would assist with some of the academic issues around sampling and analysis, particularly if the RRFSS expands substantially. The assistance of one biostatistician at present is greatly appreciated.

Agreement on the definition of indicators and analysis of these indicators must be done in collaboration with work from provincial and national organizations, including the Provincial Indicators Working Group; The Canadian Health Indicators project (CIHI, Statistics Canada); National Research Council's Performance Measures panel (10).

A summary of data analysis procedures as well as the central creation of syntax files to assist analysis should assist the standardization of approaches to analysis. It is also very important to run frequencies and cross-tabulations on the first month's data after any changes to the questionnaire, so that obvious discrepancies are dealt with as soon as possible. Valid responses and skip patterns are built into the CATI system, but there can be coding errors or omissions. Interpretation of the results and timely feedback is therefore essential.

A data analyst will be needed to analyze the data centrally. It is not clear how this will be funded, or where the person is best located.

Dissemination of information

3.4

Dissemination of the RRFSS information to program staff has been considered in chapter 2. The web will allow wider distribution of information than to just the RRFSS partners. Web-based technology is developing rapidly and may offer options that will substantially improve the utility of the data for users. In addition to other forms of documentation, pointed, attractive documents and scientific papers should be considered.

Quality Assurance

3.5

An essential factor in progress towards quality assurance will be complete and updated documentation of all procedures in the form of detailed procedure manuals and accountings of actual practice. Procedure manuals will be needed for the health unit coordinators, questionnaire development, functioning of committees, timelines for the project interviewer notes, sampling and disposition codes, data analysis. A general users guide that includes these sections has been found very helpful for the BRFSS. The users guide is available through their web page. This would be helpful for health units considering joining in the process and for those using the data as well as for the staff involved.

The need for fostering partnerships and building networks has been previously described as part of our current activities. However, this will continue to be of major importance if resources and knowledge are to be used wisely. RRFSS depends on partnerships between interested health units. Important partners may include local agencies (e.g., District health Councils), The MOHLTC, provincial agencies (e.g. Cancer Care Ontario and Centre for Addictions and Mental health), and possibly partnership with national initiatives. The Central East Health Information Partnership (CEHIP) has assisted with data analysis and dissemination of the RRFSS pilot. The RRFSS Pilot in 1999 was coordinated by a National RRFSS Working Group. Although this group has not met since summer 2000, it will be important to remain part of any national working group.

Development of simple questions for telephone interviews need to be informed by relevant research in Ontario, Canada, the USA and other countries. The Ontario network should include the PHRED program, The Centre for Addictions and Mental Health, Cancer Care Ontario and other centres where public health or health promotion research is conducted. Nationally, it is important that contacts with those involved with the Canadian Community Health Survey (CCHS) are strengthened to promote mutual sharing of information and experiences. The RRFSS could be a vehicle to try out and validate new questions of interest to Ontario and possibly the larger public health community. The RRFSS is modeled after the US Behavioral Risk Factor Surveillance System (BRFSS). BRFSS staff have provided in-depth consultation to the RRFSS and it will be important to maintain this communication, such as through RRFSS representation at the annual BRFSS meeting in the US.

The MOHLTC has been a partner in the pilot project and in the current phase. They might also choose to become a partner in the RRFSS in the sense of collecting a provincial sample of the RRFSS, a sample of 100 a month as for other partners. This could provide information for the entire province and provide a useful comparison for other areas. The data would provide the Ministry with baseline information and then ongoing trend data in areas where the need for information has been identified. This need has been identified by some of the Technical Advisory Committees and the PHRED accountability project. Some optional questions on the provincial sample could address questions of emerging importance to the MOHLTC. The Ontario sample could either be a random sample or a stratified random sample, stratified by the seven MOHLTC regions (based on a larger sample). However, a simple random sample would make comparisons between Ontario and other health units simpler. For comparison purposes, a sample of 100 per month for Ontario would be sufficient as the precision of estimates are limited by the size of the smallest sample. The sample size could increase in later years if necessary.

As with other current partners, if the MOHLTC chooses to have an Ontario RRFSS sample, a system would need to be in place within the MOHLTC to coordinate optional question choices, feedback information from the survey and update the questionnaire. The MOHLTC would also need to develop an evaluation plan that might be different from those used by health units. One person would need to be the RRFSS representative at the Ministry, a position that might be full time, given the complexity of the organization. [It is difficult to estimate the size of this task, especially from outside the organization. The RRFSS coordinator might become involved in related projects such as benchmarking, accountability, technical reviews. It is even possible that two positions might be needed].

The exact role of CEHIP in relation to this project will partially be determined by how this project develops amongst HIU partners and how relationships are worked out between

Branches of the Ontario Ministry of Health. At present, the RRFSS has not been identified by the CEHIP Advisory Board as a key project.

The Public Health Research Education and Development (PHRED) program is another potential partner. The PHRED program could make a valuable contribution in the area of instrument development and validation. In particular they could advise on questionnaire development and assist the coordinator and advisory groups through literature reviews and through research connections to keep current with research developments related to survey questions. Four PHRED units are already RRFSS partners and contribute to the Working Group and sub-groups, such as the evaluation group, flu module group.

Human Resources

3.7

Health unit Coordinators. Each RRFSS partner requires one coordinator that is the main contact person for the survey for their agency. This person should liaise with program managers and program staff to ensure that they are involved in both the development of the questionnaire and the use of the resultant information.

The RRFSS Coordinator should be a salaried position, but it is not clear where the person is best located (Health Unit, PHRED health unit, MOHLTC, HIU, ISR?). This person would coordinate the development of the questionnaire through communications with all partner agencies and through the meetings of the health unit and the program working groups. If other provinces become involved in this process, the provincial coordinator would also liaise with other provincial representatives and Health Canada. The coordinator will also liaise with the survey house on behalf of all the partners and working groups. Duties would include visits to observe the interviewing and to discuss the survey with the interviewers. The coordinator will also oversee the production of manuals and the signing of data release contracts. All RRFSS meetings, including those of the Statistical Advisory Board would be organized and attended by the Coordinator. The coordinator would be responsible for making sure all aspects of the project are on course, including data analysis and information dissemination. Clerical support for this position would increase the efficiency of the coordinator.

Data analyst. The data analyst will set up syntax files for future cycles of the RRFSS, both for health units to use, and for the production of html files for the web. This person would attend the meetings of the Statistical Advisory group to obtain directions for improving the system of data analysis. The data analyst would also be available to answer queries from health units in relation to analysing the RRFSS data. The data analyst will preferably be familiar with time trend analysis.

	Approximate annual cost
Coordinator	\$55,000 +15%
Assistant	\$30,000 +15%
Data analyst	\$55,000 +15%
Dissemination of information (half time position)	\$25,000 +15%
Data collection for Ontario sample (for 100 per month, based on a sampling frame of all Ontario)	\$50,000
New and revised question validation	\$15,000
Office supplies	\$10,000
Software	\$ 5,000
Computers for core staff	\$10,000
Mileage (cost will depend on location of participating health units)	\$10,000
Meetings including conference calls	\$10,000

ALL ITEMS ARE ONLY APPROXIMATE COSTS.

Priority should be given to the coordinator and the data analyst

References

- (1) Public health Branch, Ministry of Health. Mandatory health Programs and Services Guidelines. Toronto:Ministry of health, Public health Branch, 1997.
- (2) National Health Surveillance Working group. Partnering for quality, timely surveillance leading to action for better health. Ottawa: Office of National Health Surveillance, Health Protection Branch, Health Canada, May 1999.
- (3) PHRED Partners. Towards outcome measurement for Ontario Boards of health: a planning and evaluation model via an analysis of the Ontario Mandatory Health Programs and Services Guidelines. Ottawa: Public Health Research, Education and Development Program, November 2000.
- (4) Stewart PJ, Sales P. Evaluation of the Rapid Risk Factor Surveillance System. Final Report. Ottawa: Community Health Consulting, May 2000.
- (5) Starr GJ, Dal Grande E, Taylor AW, Wilson DH. Reliability of self-reported behavioural health risk factors in a South Australian telephone survey. Australian and New Zealand J Public Health, 23(5):528-530, 1999.
- (6) Newell SA, Girgis A, Sanson-Fisher RW, Savolainen NJ. The accuracy of self-reported health behaviors and risk factors relating to cancer and cardiovascular disease in the general population: a critical review. Am J Prev Med, 17(3):211-229, 1999.
- (7) Kendall O, Lipskie T, MacEachern S. Canadian Health Surveys, 1950-1997. Chronic Diseases in Canada, 18(2):70-90, 1997.
- (8) Willis GB, Lessler JT. Question Appraisal System BRFSS-QAS. North Carolina: Research Triangle Institute, May 1999.
- (9) Theis B, Frood JJ, Nishri ED, Marrett L.. Evaluating a Risk Factor Survey Questionnaire. Oshawa, Ontario: APHEO Conference 2000 presentation, November 2000.
- (10) National Research Council. Assessment of performance measure for public health, substance abuse and mental health. Perrin EB, Koshel JJ (eds). Washington, DC: National Academy Press, 1997.

APPENDIX 1

RRFSS questions in relation to the CCHS and BRFSS

APPENDIX 2

RRFSS Questionnaire Map March 2001

APPENDIX 3

Sample from the Data Dictionary for the RRFSS 2001

**Full Data Dictionary can be found at
<http://www.cehip.org>
(frequently updated)**