APHEO
Association of Public Health Epidemiologists in Ontario
"To advance and promote the discipline and professional practice of epidemiology in Ontario public health units."
www.apheo.on.ca

Project: Core Indicators for Chronic Disease and Risk Factor Surveillance

Core Indicators for Public Health in Ontario

July 4, 2008 – July 3, 2009

CONTACT INFORMATION

Mary-Anne Pietrusiak, MHSc (Chair, Core Indicators project)
Epidemiologist
Durham Region Health Department
Mail: PO Box 730, Whitby, ON L1N 0B2
Courier Address: 605 Rossland Road East, 2nd Floor, Whitby, ON, L1N 0B7
Phone: 905-668-4113, ext. 3185
Fax: 905-666-6214
E-mail: mary-anne.pietrusiak@durham.ca

Joanna Oliver, M.Sc. (APHEO President)
Epidemiologist
Halton Region Health Department
1151 Bronte Road
Oakville, ON, L6M 3L1
Tel: 905-825-6000 ext. 7330
Toll Free: 1-866-442-5866
TTY: 905-827-9833
Fax: 905-825-8588
E-mail: Joanna.Oliver@Halton.ca

TABLE OF CONTENTS

A. Introduction

This report summarizes the activities and accomplishments of the Core Indicators for Public Health in Ontario (Core Indicators) project and specifically, the work on chronic disease and risk factor surveillance that was funded by the Public Health Agency of Canada (PHAC). Funding for this project came from the Enhanced Surveillance for Chronic Disease Grant and Contribution Program to the Association of Public Health Epidemiologists in Ontario (APHEO). Funding was for one year, from July 4, 2008 to July 3, 2009. The formal name for this project is Core Indicators for Chronic Disease and Risk Factor Surveillance, but became commonly known as the Core Indicators PHAC (CIP) project. The CIP project is one specific component of the larger Core Indicators project.

Organization Mandate

APHEO is a non-profit organization of approximately 75 full members who practice epidemiology in Ontario's public health units, as well as more than 100 affiliate members. APHEO's first meeting was in 1991. The group meets quarterly to discuss matters related to public health epidemiology, manages a listserv and website, and hosts an annual conference.

APHEO's Mission

To advance and promote the discipline and professional practice of epidemiology in Ontario public health units.

APHEO's Vision

The excellent leadership and professional expertise of APHEO advances public health in Ontario.

APHEO's Values

As a professional organization APHEO believes in:

- improving the health of the population;
- a public health system in which Epidemiologists are integral;
- supporting a participatory network of people with an interest in public health epidemiology;
- high standards for the practice of public health epidemiology;
- demonstrating leadership; and
- innovation.

The Core Indicators project is one of the main initiatives of APHEO. The project standardizes definitions and calculation methods for over 120 public health indicators for use at the public health unit level in Ontario and makes available accompanying resources. Documents are housed on the APHEO website (see http://www.apheo.ca/index.php?pid=55). Core Indicators enhances accurate and standardized community health status reporting across public health units.

Background

The Core Indicators project began in 1998 with the formation of the Provincial Health Indicators Work Group, subsequently renamed to the Core Indicators Work Group (CIWG). The CIWG created indicators and accompanying resources to support public health epidemiologists in Ontario. Since 2006, various sub-groups have been formed to revise and update existing indicators as well as to create new indicators. Three sub-groups were formed to revise indicators on cancer, smoking, ultraviolet radiation, nutrition, physical activity, healthy weights, leading causes of mortality and leading causes of hospitalization. A new sub-group was formed this year to address 'The Built Environment'. Four sub-groups were specifically involved with the CIP project: 1) Cancer, Smoking and Sun Safety, 2) Healthy Eating and Active Living (HEAL), 3) Leading Causes and 4) The Built Environment.

The Core Indicators project is referenced in health reports and related documents, including the Population Health Assessment and Surveillance Protocol of the Ontario Public Health Standards (OPHS). The Core Indicators are also referenced in products produced by the Health Analytics Branch, MOHLTC, such as the Health Analyst's Toolkit. The APHEO website has over 4,000 unique visitors every month, with the indicators and its accompanying resources among the most accessed pages.

Partners

Members of the Core Indicators project are located in public health units, research units, non-governmental organizations, government, academia and other types of organizations. External consults are also made during indicator development with experts from a wide range of organizations. The project brings together ideas and knowledge from several different perspectives, including policy, academia and practice. The full list of members and partners is provided in Appendix 1.

Resources

The organizations of partners provide numerous in-kind resources for the Core Indicators project. The disadvantage of the grassroots approach, however, is

that changes, updates and enhancements to the Core Indicators take months or years to accomplish. Through the acquisition of funding from PHAC's Enhanced Surveillance for Chronic Disease Grant and Contribution Program, Core Indicators was able to expedite the process of updating, revising and creating new products by hiring a Project Manager from July 4, 2008 to July 3, 2009. A Steering Committee was created to lead the CIP project. The role of this committee was to recruit a Project Manager and be a reporting mechanism for the new position regarding budget and the status of deliverables.

Briefly, the role of the Project Manager in the CIP project was to coordinate the project and assist in deliverable completion. This involved: setting timelines; scheduling meetings and teleconferences; creating agendas; recording meeting minutes; sending out calls for external review and coordinating this process; posting indicators and resources on the APHEO website; coordinating French translation; assisting in indicator and resource development and writing; revising or creating SPSS syntax files; coordinating a strategic direction session for Core Indicators; finding members for the new subgroup on 'The Built Environment' and managing start-up activities; managing the budget; identifying, managing and reporting project dependencies to the CIWG and the CIP project Steering Committee; communication; planning; workload prioritization; ensuring that deliverables were achieved; and promoting the project at various venues.

Office space, a desktop computer, office supplies, printing and photocopying, telephone services and supervision was provided for the Project Manager through in-kind contributions by Durham Region Health Department. Direction was also provided by sub-group leads in-kind from the following organizations: York Region Community and Health Services Department, Public Health Agency of Canada, Simcoe Muskoka District Health Unit and the Ministry of Health and Long-Term Care. Teleconference services were provided by the Ministry of Health Promotion in-kind.

Objectives

The overall objective of the CIP project was to standardize definitions and calculation methods for chronic disease and risk factor indicators to build capacity for chronic disease surveillance.

This was achieved with the following specific objectives:

- To provide accurate information that can be used by public health epidemiologists and others to generate chronic disease and risk factor indicators
- To ensure that this information is readily accessible
- To advocate that public health units have access to good quality data for chronic disease and risk factor surveillance

- To encourage public health units and others to use the same definitions and methods when generating chronic disease and risk factor indicators
- To increase awareness of Core Indicators for chronic disease and risk factor surveillance
- To report the accomplishments of this project

In addition to providing definitions and calculation methods, the indicators provide information on what data source is most appropriate for a given chronic disease or risk factor, the limitations of the data, how to analyze the data appropriately and how to interpret the information. The use of standard methods for defining, analyzing and reporting indicators produces consistent measures that are useful not only for program planning and evaluation, but also for public health messaging.

The Core Indicators are in the process of being aligned with the new OPHS, which establish requirements for the fundamental public health programs and services carried out by boards of health. Public health units must conduct population health assessment and surveillance as part of the OPHS. The Core Indicators assist with this work by providing indicators that operationalize the outcomes and requirements. New indicators are required to address existing data gaps based on the OPHS.

B. Deliverables and Activities

Over the duration of this project (July 4, 2008 - July 3, 2009), work was completed in the following categories: operational activities; creation of policies, procedures and an organizational chart; a strategic direction session; the formation of a new sub-group; indicator creation and revision; creation of new resources (including syntax files); French translation of deliverables; improving data quality and access to data; and promotional activities.

Operational Activities

Each of the four sub-groups involved in the CIP project, the Core Indicators Work Group, the CIP Steering Committee and APHEO held meetings over the course of this project. On average, each sub-group met once a month with the exception of the new sub-group, The Built Environment, which met more often during its start-up phase. The Steering Committee (or a small group of members from this committee) met at the start and at the end of the project. Some members of the Steering Committee were also in a supervisory role and thus monitored the project by e-mail and telephone. Project updates were also given at the APHEO general meetings. Discussions and decisions were documented in meeting minutes. Minutes were posted on APHEO's website

(http://www.apheo.ca/index.php?pid=53) and a listing of meeting dates is provided in Table 1.

Table 1. Listing of Meetings for Groups, Sub-groups, Committees and APHEO (July 4, 2008- July 3, 2009)

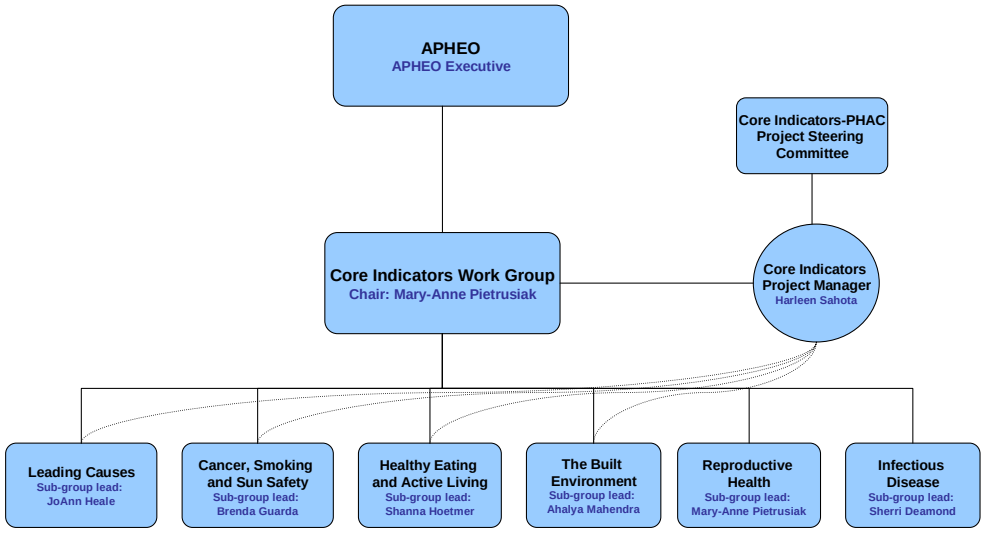
Group	Meeting Dates
APHEO General Meetings	• May 27, 2009 • February 6, 2009 • November 21, 2008 • September 26, 2008
CIP Steering Committee	• May 13, 2009 • July 11, 2008
Core Indicators Work Group	• June 1, 2009 • April 8, 2009 • February 19, 2009 • November 27, 2008 • October 30, 2008 • September 19, 2008
The Built Environment Sub-Group	• April 21, 2009 • March 31, 2009 • February 27, 2009 • February 18, 2009 • February 2, 2009
Leading Causes Sub-Group	• February 12, 2009 • November 27, 2008 • September 15, 2008
Cancer, Smoking and Sun Safety Sub-Group	• June 10, 2009 • May 21, 2009 • April 29, 2009 • March 5, 2009 • February 11, 2009 • December 8, 2008 • October 29, 2008 • September 24, 2008
Healthy Eating Active Living Sub-Group	• June 9, 2009 • May 22, 2009 • April 16, 2009

	• March 12, 2009 • February 12, 2009 • December 1, 2008 • November 3, 2008 • September 29, 2008 • August 25, 2008 • July 24, 2008

Policies and Procedures

Three policies and procedures were completed during the course of this project: 1) Core Indicators Sub-Group Terms of Reference; 2) Core Indicators Membership Policy and Procedures; 3) Core Indicators Organizational Chart (see Figure 1). All three have been approved by the Core Indicators Work Group.

Figure 1: Core Indicators for Public Health in Ontario – Organizational Chart



Note: In addition to this internal structure, members of the Core Indicators for Public Health in Ontario project liaise with external organizations as necessary and as required.

Strategic Direction Session

A strategic direction session was held in Toronto, Ontario on December 5, 2008. All members of the Core Indicators project were invited. A facilitator (Kim Bergeron) was hired to facilitate the session. Prior to the session, two on-line surveys on the project were conducted using survey monkey – one was

completed by the APHEO membership and the other by Core Indicator group members. The agenda for the strategic direction day included presentations on the history of the Core Indicators project and various initiatives to better understand the "Lay of the Land" (1. APHEO's 2008 Strategic Directions, 2. Core Indicators-PHAC project, 3. Ontario Public Health Standards, 4. Public Health Performance Indicators, 5. Ontario Agency for Health Protection and Promotion), as well as results from the two on-line surveys. These presentations laid the groundwork and led into activities for developing the strategic direction, specifically a visioning exercise to identify a strategic direction, small group work to identify challenges, solutions and priorities to achieve the vision and next steps. Participants were also requested to complete an evaluation form for the session. A final report was written by the facilitator and is available through the APHEO website (see http://www.apheo.ca/index.php?pid=50).

New Sub-Group

A new sub-group dedicated to the topic of 'The Built Environment' was formed to address outcomes and requirements in the OPHS on this topic. Kim Bergeron was hired to produce three background papers to inform indicator development because of the novelty of this subject area in public health:

1. Environmental Scan of Provincial Policies, Position Statements, Briefing Documents and Legislation Related to The Built Environment and Six Lifestyle Factors: A Summary Report
2. A Review of the Literature on the Effect of The Built Environment on Five Chronic Disease Risk Factors (from the Chronic Disease Prevention chapter of the OPHS) for Public Health Professionals Interested in Surveillance: A Summary Report
3. Investigating Infrastructure Data Sources: A Summary Report

The role of the sub-group from January to March 2009 was to work with the consultant (edit documents, provide contacts and provide guidance/direction from a public health perspective). A strategic direction session for this new sub-group will be held in Toronto, Ontario on July 17, 2009 to identify specific areas for indicator development and a strategy. A strategic direction session is needed for this sub-group to narrow down this broad and novel subject area and to develop a work plan that will help to prioritize indicator development.

Indicators

Twenty-five chronic disease and risk factor-related indicators underwent revision and three new indicators were created as part of this grant. Best practices for indicators (e.g. definitions, calculation methods, data sources) were reviewed, evaluated and incorporated, where necessary. Literature reviews and internet

searches of government documents and other grey literature were conducted as required. Analysis was conducted as required to evaluate different methodologies. Twenty-three indicators underwent external review and two were updated without external review (chronic disease hospitalization and chronic disease mortality). Revisions for these two indicators primarily consisted of updating International Classification of Disease (ICD) codes, adding references and indicator comments and updating the format. The APHEO listserv was used to obtain opinions on which disease categories should be captured by these two indicators.

Two indicators were discontinued as a result of the decisions that were made during the revision process: 1) Clinical Breast Exams, and 2) Physical Activity Frequency.

The following indicators have been revised:

1. Adolescent BMI
2. Adult body mass index (BMI)
3. All Cause Hospitalization
4. All Cause Mortality
5. Cancer incidence
6. Cancer mortality
7. Cervical cancer screening
8. Chronic disease hospitalization
9. Chronic disease mortality
10. Chronic health problems prevalence
11. Cost of a nutritious food basket
12. Drinking and driving prevalence
13. Food insecurity
14. Heavy drinking episodes
15. Leisure-time physical activity
16. Low-risk drinking
17. Minors' access to tobacco
18. Non-smoker second-hand smoke exposure
19. OBSP mammography
20. Screening mammography
21. Smoke-free homes
22. Smoking status
23. Ultraviolet radiation exposure
24. Underage alcohol drinking
25. Vegetable and fruit consumption

Three new indicators have been created:

1. Smoking attributable mortality
2. Colorectal cancer screening
3. Smoking cessation

Resource Documents

A new resource on direct and indirect standardization was completed. A paper entitled "Standardization of Rates" and accompanying sample calculations were posted on the APHEO website. CIWG recommendations were also drafted. This paper discusses indirect and direct standardization including the intricacies of these methodologies, such as how to choose a standard population and handle small numbers of events.

Syntax files were completed to accompany four indicators: Adult BMI, Adolescent BMI, Food Insecurity and Low Risk Drinking. The syntax files were written in SPSS, a statistical program used in public health units. The four syntax files that were completed are:

1. A syntax file was written to calculate food insecurity status for the 2005 Canadian Community Health Survey (CCHS) data set using a new methodology which is found on the 2007 data set. The syntax file was adapted from the SAS syntax file from Statistics Canada.

2. A syntax file was created to calculate the proportion of respondents exceeding and meeting the low risk drinking guidelines.

3. Two other syntax files have been written to calculate BMI: one for CCHS 2000/01 and one for 2003. With the release of new guidelines in 2003, BMI calculations were extended for the population from ages 20-64 to ages 18 and older. Also, there was a change in the rounding convention in 2005. For these reasons, BMI categories were re-derived so that there would be consistent methodology across all CCHS cycles. Adolescent BMI was re-derived for the 2000/01 and 2003 CCHS data sets using a new international standard which was used to calculate adolescent BMI on the 2005 data set.

Reference documents were created to accompany indicators. For the Cancer Incidence and Mortality indicators, a chart entitled "Comparisons - Differences in Canadian Cancer Incidence/Death definitions" was created. For the Smoking Attributable Mortality indicator, a spreadsheet providing sample calculations was included. For the All Cause Mortality indicator, a reference document outlining recommendations on Leading Cause Groups for Mortality Tabulation was created.

Translation

All indicators and this final report were translated into French as part of this project. The Standardization of Rates paper was also translated into French with in-kind resources from Statistics Canada.

Data Quality and Access to Data

Consultations with various organizations were conducted to improve data quality and access to data. Statistics Canada provided clarification on aspects of the CCHS including:

- Release guidelines.
- Using caution when comparing CCHS 2000-01 data with other years of CCHS data because of changes in the mode of data collection.
- Changes in how Statistics Canada now handles respondents who did not state a response for a question ("Not Stated").

Information gathered during the consultation process has been documented in a newly developed "Analysis Check List" that highlights various aspects of both the CCHS and the Rapid Risk Factor Surveillance System (RRFSS).

The School Health Action, Planning and Evaluation System (SHAPES) was investigated for possible inclusion in the Core Indicators as a new data source for obtaining health status measures for youth. Due to only one year of data being available, and no clear indication from the University of Waterloo regarding additional data collection, this potential new data source for indicators was placed on hold at this point in time.

A request was placed to the Institute of Clinical and Evaluative Sciences (ICES) to calculate cancer screening data at the public health unit level, using the same algorithms used for Cancer Care Ontario (CCO) and the Cancer System Quality Index. ICES agreed that the analyses conducted for the Local Health Integration Networks would also be conducted for public health units. ICES uses OHIP billing data for indicators whereas the Core Indicators normally use survey data. Having the ICES calculations at the public health unit level will provide adjunct measures to the Core Indicators.

Promotion Activities

The Core Indicators project was promoted through publications and presentations to increase awareness and encourage adoption of the indicators. Indicators, resources and reports were posted on the internet (APHEO website) to increase availability, access and awareness. Announcements related to the project, such as announcing completed indicators or resources, and advertisements seeking external reviewers, were circulated by e-mail to specific stakeholders or on listservs in the health sciences.

Presentations were delivered at the following venues:

Date	Venue	Title of Presentation	Format of Presentation
May 2009	National Surveillance Advisory Committee on Substance Use meeting	Core Indicators for Public Health on Alcohol and Substance Use	Oral presentation
May 2009	Association of Public Health Epidemiologists in Ontario/ Canadian Society for Epidemiology and Biostatistics joint conference	New Products in the Core Indicators Project	Oral presentation
February 2009	Symposium of The Canadian Alliance for Regional Risk Factor Surveillance (CARFFS)	Core Indicators for Chronic Disease and Risk Factor Surveillance	Oral presentation
October 2008	Ontario Public Health Association	Core Indicators for Public Health in Ontario	Poster presentation
October 2008	Durham Region Health Department Research and Knowledge Exchange Symposium	Core Indicators for Public Health in Ontario	Poster presentation

Core Indicators was also incorporated into the Population Health Assessment and Surveillance protocol of the OPHS (http://www.ontario.ca/publichealthstandards) which health units must adhere to starting in January, 2009. In the Data Access, Collection and Management section of the protocol, Core Indicators is referenced as follows:

> "The board of health shall use standard definitions of variables and health indicators, where available and appropriate, to collect and access population health data and information. The Association of Public Health Epidemiologists in Ontario (APHEO), Statistics Canada, and the Canadian Institute for Health Information provide standard definitions for population health assessment and surveillance indicators which shall be used where available." (p.7)

In the Data Analysis and Interpretation section of the protocol, Core Indicators is referenced as follows:

> "The board of health shall use standard definitions of variables and health indicators, where available and appropriate, to conduct data analysis and interpretation of population health data and information. The APHEO, Statistics Canada, and the Canadian Institute for Health Information provide standard definitions for population health assessment and surveillance indicators which shall be used where available." (p.8)

In summary, all product requirements for this grant were completed. Additional products such as the Strategic Direction report and three reports on 'The Built Environment' were also produced in addition to the grant requirements. Some tasks which could not be addressed due to lack of time include: updating a resource on "Optional content in the CCHS: who chose what?", creating a resource on confidentiality issues, and organizing a workshop with public health epidemiologists to solicit feedback on revised indicators. However, some of the information that would have been put in the "Who Chose What?" resource was added to specific indicators as well as some information about confidentiality issues. The proposal also had listed the task of investigating the usefulness and cost of a Content Management System for the APHEO website as part of this project. This was completed prior to receiving the PHAC grant with funding from the Ministry of Health Promotion. A Content Management System was indeed implemented for the APHEO website, which subsequently allowed improved access and editing capability to the CIP project.

C. Results

Indicators and resources for chronic disease and risk factor surveillance were revised and/or created from July 4, 2008 to July 3, 2009. Using the Core Indicators section of the APHEO website, public health epidemiologists and others can access these documents to facilitate the use of consistent, standardized definitions for chronic disease and risk factor surveillance in Ontario public health units. By standardizing indicators, comparable health status measures across health unit jurisdictions can be produced. Standardized indicators which produce comparable measures across health units allow public health epidemiologists and others to learn from one another by guiding and informing decision-making in policy and program planning.

Through the promotion and dissemination activities, public health epidemiologists and others now have an increased awareness of the Core Indicators for Public Health in Ontario project and the APHEO website. Core Indicators has been incorporated into the Ontario Public Heath Standards and thus is likely to remain a key reference on health status indicators for public health epidemiologists in Ontario. Increased awareness and the accessibility of this information on the internet will assist in the adoption of indicators across Ontario in an attempt to have standardized health status assessment and reporting.

Through consultations and communications with Statistics Canada, University of Waterloo (for SHAPES), ICES and RRFSS, improvements in data quality and access to data were addressed. By clarifying data quality issues with Statistics Canada and documenting this information in indicators, public health epidemiologists can use this information to guide data manipulation, analysis and interpretation. For example, by documenting how Statistics Canada handles 'Not Stated' respondents and highlighting changes in the mode of data collection for the CCHS, this provides epidemiologists with information on how to improve data quality, analysis and interpretation.

Through requesting indicator calculations at the public health unit level from ICES, the already-developed Core Indicators health status measures for cancer screening can be compared or be used as an adjunct measure to the health measures obtained using the ICES calculations.

Also, Core Indicators now has documents to guide day-to-day operations such as policies, procedures, an organizational chart and a strategic direction. A new sub-group has been created to address outcomes and requirements in the OPHS on 'The Built Environment.'

D. Dissemination and Evaluation

Dissemination of Results

Indicators and resources were disseminated through publications and presentations to encourage adoption of the indicator definitions and methods. Indicators, resources and reports were posted on the internet (APHEO website) to increase availability, access and awareness. Announcements were made on the APHEO listserv as indicators and resources were completed and posted on the APHEO website. The presentations are listed above.

Core Indicators was also incorporated into the Population Health Assessment and Surveillance protocol of the OPHS which came into effect in January, 2009. This will increase awareness of the project. Core Indicators will be referenced in an upcoming report by the Healthy Living Issue Group of the Public Health Network (anticipated to be released externally in summer 2009) called "Bringing Health to the Planning Table: A Profile of Promising Practices in Canada and Abroad."

Tools to Measure Achievement

Achievements in this project are documented here using three methods:

1. Documents that reference the Core Indicators,
2. The posting of deliverable documents on the APHEO website, and
3. An analysis of the APHEO website statistics.

As previously mentioned, the Core Indicators project is now referenced in the Population Health and Surveillance Protocol of the OPHS. All deliverables can be accessed through the Core Indicators section of the APHEO website at: http://www.apheo.ca/index.php?pid=55.

Website Statistics

The Core Indicators website is nested within the APHEO website. The APHEO website currently receives approximately 4,000 unique visitors to the site each month and the Core Indicators pages receive about 75% of the APHEO website traffic. The APHEO website underwent a major transformation in April 2008; as a result, traffic statistics are not comparable before and after this change because of the site configuration.

Although web traffic statistics are generally difficult to interpret, we have used this information to provide a basic understanding of website use. From July 2008 to May 2009, the number of hits, visits and unique visitors increased (see Figures 1 and 2) with peaks in March 2009. Some of this increase could be due to Core Indicator group members editing various indicators and resources. The bulk of

this work has occurred since January 2009. As well, in February and March, public health epidemiologists were asked by the Ministry of Health and Long-Term Care to validate results from a provincial public health report. At this time, there was a lot of discussion on the APHEO listserv about indicator definitions, which likely also generated increased visits to the Core Indicator website.

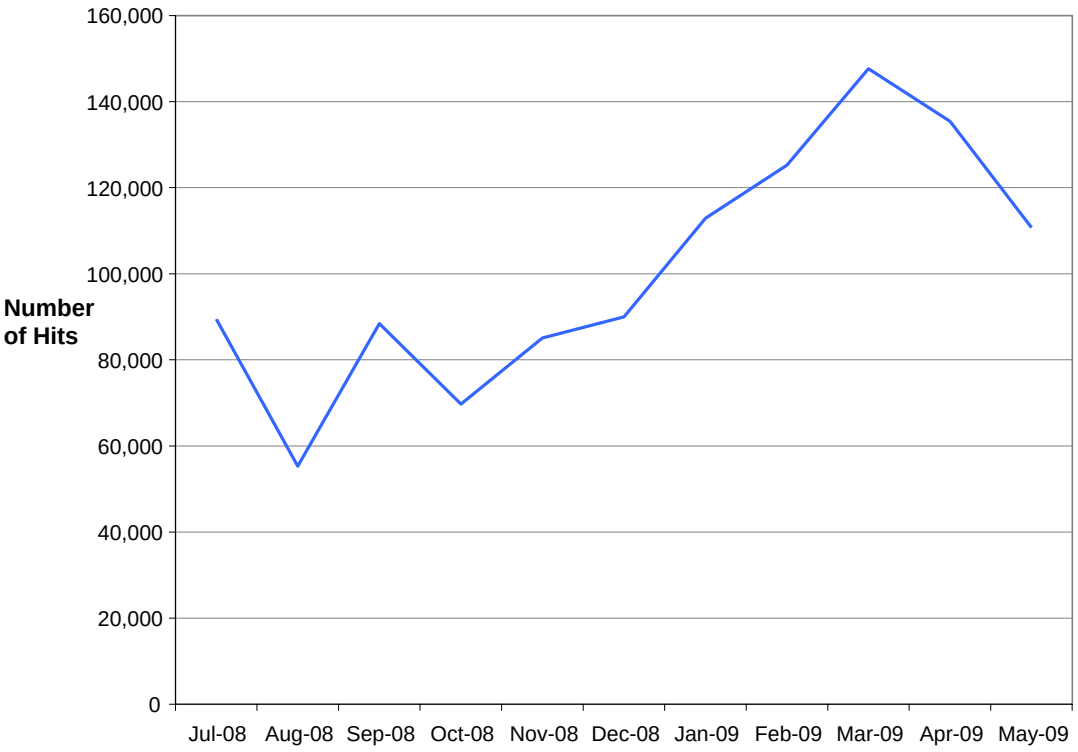


Figure 2. Web Hits for the APHEO Website July 2008 - May 2009

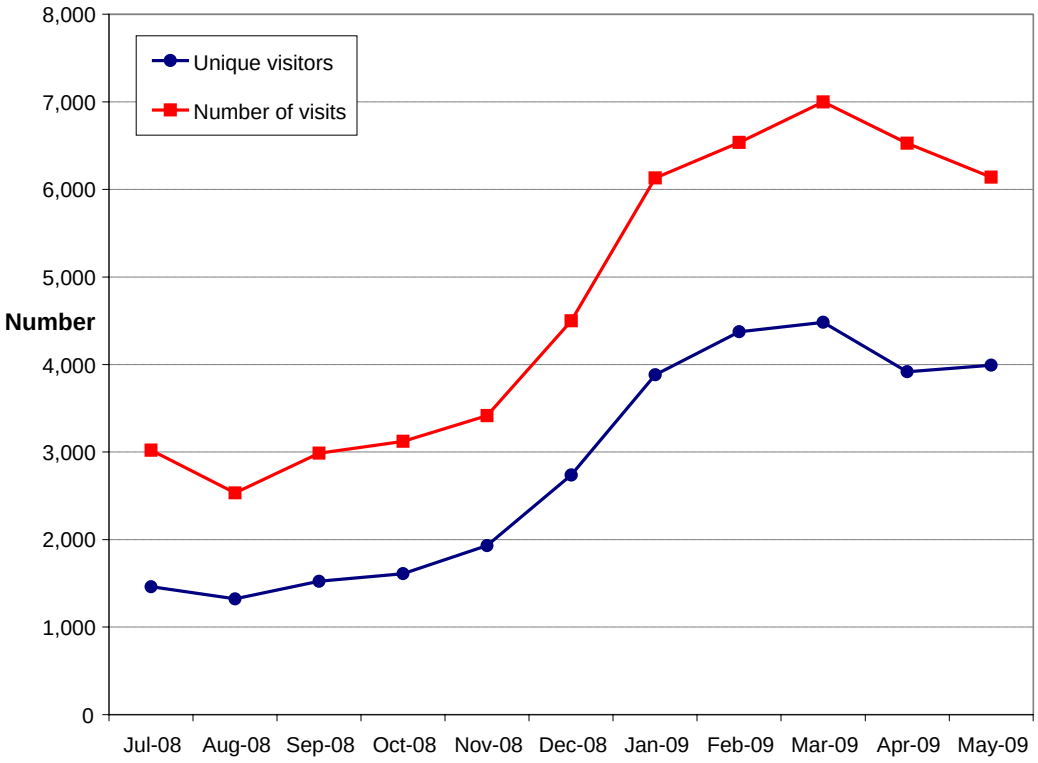


Figure 3. Web Traffic Statistics for APHEO Website July 2008 - May 2009

The number of page-specific hits from January 5 to June 5, 2009 is shown in Table 2 on the following page. Only the Core Indicator pages receiving at least 200 hits are shown. The page with the highest number of hits was "Methods for Calculating a Moving Average", which is referenced and linked to a page on Wikipedia. Other pages receiving a large number of hits included those that underwent a considerable amount of work as a result of this project, specifically those indicators related to healthy weights, alcohol and nutrition. While we do not know how many of these hits were due to work group members completing edits versus users looking for information, this does indicate that considerable activity was generated as a result of this project. It will be useful for the Core Indicators project to continue to monitor activity after the editing has been completed to see how many hits these pages are receiving. The information is also useful to help prioritize other indicators that should be reviewed and updated as necessary (e.g. deft/DMFT Index for oral health) since there are indicators that are currently receiving a lot of hits but have not yet been revised.

Table 2. Core Indicator Page-Specific Hits, January 5, 2009 – June 5, 2009

Page	# Hits	Comment
10 Methods for Calculating Moving Averages	843	Linked to Wikipedia
5D Adult Body Mass Index (BMI)	680	* Edited as part of CIP PHAC project
5D Adolescent Body Mass Index	646	* Edited as part of CIP PHAC project
5B Underage Alcohol Drinking	645	* Edited as part of CIP PHAC project
6C deft/DMFT Index	610	
5D Vegetable and Fruit Consumption	577	* Edited as part of CIP PHAC project
10 Standardization of Rates	532	* Edited as part of CIP PHAC project
10 Data Citation Notes	528	
10 The Canadian Community Health Survey	495	
4A Chronic health problems prevalence	493	* Edited as part of CIP PHAC project
2A Food Insecurity	482	* Edited as part of CIP PHAC project
10 Geography in Ontario	481	
5C Leisure Time Physical Activity	479	* Edited as part of CIP PHAC project
10 Integrated Public Health Information System	475	
4B Cancer Incidence	473	* Edited as part of CIP PHAC project
5A Smoking Status	469	* Edited as part of CIP PHAC project
8 Enteric Disease Hospitalization	468	
8 Infectious Disease Incidence	436	
5B Heavy Drinking Episodes	433	* Edited as part of CIP PHAC project
6B Pregnancy Rate	428	
8 Infectious Disease Mortality	428	
6C Child and Adolescent Mortality	420	
3 All-Cause Mortality	410	
4A Chronic disease mortality	398	* Edited as part of CIP PHAC project but after June 5
2A Cost of a Nutritious Food Basket	389	* Edited as part of CIP PHAC project
7 Attempted Suicide Hospitalization	381	
1 Population Growth	372	
10 International Classification of Diseases (ICD-10)	367	
6B Total Fertility Rate	341	
10 Immunization Records Information System	338	
5B Low-Risk Drinking	337	* Edited as part of CIP PHAC project
4B Cervical Cancer Screening	336	* NEW as part of CIP PHAC project
6C Breastfeeding Initiation and Duration	335	
4B Cancer Mortality	333	* Edited as part of CIP PHAC project
10 Calculating Potential Years of Life Lost (PYLL)	320	
1 Dependency Ratios	316	
6B Age of Parent at Infant's Birth	316	
5B Drinking and Driving Prevalence	314	
2A Unemployment Rate	313	
6B Birth Weights	313	
10 Live Birth Data	313	
10 Methods for Age Standardizing Survey Data	312	
6B Crude Birth Rate	311	
10 Integrated Services for Children Information System (ISCIS)	310	
7 Suicide Mortality	307	

Page	# Hits	Comment
6C Early Childhood Tooth Decay	305	
4A Chronic disease hospitalization	304	* Edited as part of CIP PHAC project but after June 5
5A Minors Access to Tobacco	297	* Edited as part of CIP PHAC project
10 Mortality Data	297	
2B Municipal Drinking Water Quality	296	
4C Injury Hospitalization	293	
4C Injury Mortality	290	
6B Fertility Rates	288	
10 'The Built Environment' Resources	286	NEW resources, posted April 2009
10 Life Table Template	285	
10 Dental Health Data	284	
1 Population by Age and Sex	280	
6B Smoking During Pregnancy	278	
5A Non-smoker Second-Hand Smoke Exposure	277	* Edited as part of CIP PHAC project
6A Number of Sexual Partners	273	
6B Neonatal and Infant Mortality	268	
4C Alcohol-Related Injury and Mortality from Motor Vehicle Traffic Collisions	265	
6B Perinatal Mortality	263	
4B Screening Mammography	260	* Edited as part of CIP PHAC project
8 Childhood Vaccination Coverage	257	
2A Low Income Rate	256	
3 All-Cause Hospitalization	253	* Edited as part of CIP PHAC project
6B Therapeutic Abortions	252	
4C Motor Vehicle Traffic Collisions Injuries	248	
6B Congenital Infections	245	
10 Population Estimates	238	
3 Need for Assistance with Activities of Daily Living (ADL)	231	
10 Ontario Health Survey (OHS) - 1996/97 OHS, 1990 OHS	220	
5A Smoke-free Homes	219	* Edited as part of CIP PHAC project
1 Projected Population Growth	214	
8 Pelvic Inflammatory Disease Hospitalization	214	
4B OBSP Mammography	213	* Edited as part of CIP PHAC project
2A Single Parent Families	207	
1 Urban and Rural Population	206	
2B Air Quality	206	
10 Standardization of Rates - Member Page	204	* Created, part of CIP PHAC project

E. Budget

Overall Project Budget, July 2008 to July 2009

	ACTUAL	ORIGINAL BUDGET
PERSONNEL		
Epidemiologist (1.0 FTE, 12 months)	$67,429.30	$75,000.00
Benefits (15%)	$10,200.00	$11,250.00
Facilitator fees for strategic direction day	$4,102.57	$0.00
Personnel Subtotal	**$81,731.87**	**$86,250.00**
TRAVEL for Project Manager position (transportation, food, hotels and registration fees)		
Conferences	$1,640.41	$1,000.00
APHEO General Meetings	$23.28	$0.00
Working Group Meetings	$0.00	$200.00
Travel Subtotal	**$1,663.69**	**$1,200.00**
APHEO MEMBERSHIP FEE for Project Manager position		
2008	$25.00	$0.00
2009	$25.00	$0.00
APHEO Membership Fee Subtotal	**$50.00**	$0.00
WORKSHOP		
Meeting space, materials, refreshments	**$0.00**	**$1,500.00**
STRATEGIC DIRECTIONS SESSION		
Catering	**$235.49**	**$0.00**
MATERIALS AND SUPPLIES		
French Translation:		
French translation of revised and new indicators (*note: 28 indicators out of the original 30 were translated because two were discontinued*), French translation of new resources (three reference documents created to accompany three indicators), French translation of final report	**$13,756.05**	**$14,500.00**
Equipment:		
Laptop computer	**$1,998.07**	**$3,500.00**
GRAND TOTAL	**$99,435.17**	**$106,950.00**

In-Kind Resources		
Teleconferences (approximately 35)	$2,700.00	$2,700.00
Rent, Utilities and Administrative Support	$10,500.00	$10,500.00

Supervision (CIWG Chair, Sub-Group Leads - .1 FTE)	$7,800.00	$7,800.00	
APHEO Website maintenance	$2,000.00	$2,000.00	
French translation of Standardization of Rates paper (10,500 words)	$2,100.00	$2,000.00	
Strategic Directions session- catering and meeting space	$1,095.00	$0.00	
Software license for statistical software	$2,000.00	$2,000.00	** note, this was not originally budgeted as in-kind*
Content Management Software for posting Indicators and Resources	$1,500.00	$1,500.00	** note, this was not originally budgeted as in-kind*
Telephone – long distance	$200.00	$200.00	** note, this was not originally budgeted as in-kind*
Office supplies	$150.00	$150.00	** note, this was not originally budgeted as in-kind*
Printing and photocopying	$200.00	$200.00	** note, this was not originally budgeted as in-kind*
PC terminal and LAN access	$3,500.00	$3,500.00	
In-Kind Resources Total	**$33,745.00**	**$32,550.00**	

F. Self-evaluation

The information in this self-evaluation portion derives from written feedback received from group members who were asked the questions: "What did your organization learn about what worked and what didn't work?" and "What would your organization do differently if the project were to continue or if the project were to be done again?" As well, we held a two-hour teleconference that asked close out questions regarding project management components, the indicator development phase, indicator writing phase, indicator review phase, project communication, decision-making structure as well as other suggestions and comments. This information is summarized below.

Our Strengths

The strength of the Core Indicators project is that it is worthwhile – it provides important information that public health epidemiologists and others rely on to do their work. Rather than many people defining indicators on an individual basis, it makes sense to pool resources and define indicators in a standardized fashion by drawing upon experts in public health units, provincial and federal government, academia and non-governmental organizations. People genuinely appreciate the Core Indicators.

Funding by PHAC allowed the Core Indicators project to hire a Project Manager (PM) for one year to coordinate and assist with this work. This position was key to achieving all that was done in the past year. A full-time epidemiologist was vital to the success of this project because so many skills (e.g. coordination, analysis, writing, communication) were required – the project needed a dedicated, full-time position. The PM was a catalyst to keep the project moving and was integral for the many connections between people and groups. The following quote summarizes the sentiment:

> "Harleen kept us on track and ensured we met our timelines. It was very helpful to have someone take care of the 'administrative' aspects, such as organizing meetings, agenda, typing up minutes, searching for external reviewers, ensuring indicators conform to the template. With CIWG and sub-group membership being on a volunteer basis, the existence of a project manager is crucial. If it wasn't for Harleen, I think my sub-group would be very far from finishing!!"

Other project management components were also crucial, namely the sub-group leads and the Core Indicators Work Group (CIWG). The leads managed the sub-groups and carried out a lot of the actual indicator preparation and review work.

The CIWG had the important function of overseeing all other aspects of the Core Indicators work. The sub-groups looked to the CIWG for feedback and direction.

The Durham Region Health Department (DRHD) and the support of its Medical Officer of Health were essential in making the project a reality. The DRHD housed the PM and provided in-kind services to the position, including office space, telephone, computer and email account. The PM was able to take training courses offered by the Region at no charge. The DRHD also provided staff time, specifically from Mary-Anne Pietrusiak and Sherri Deamond, who managed the project and the PM position. A program assistant also provided some administrative support related to hosting the PM position at DRHD. It was important to have the PM on-site and in close proximity to the Chair of the CIWG due to the complexities of the project, e.g. dealing with many sub-groups, details required in the indicators, being able to make changes as new information became available. Initially, we considered a number of models as to where the PM would be located. If we had had the PM located elsewhere for this first contract, it would have been more difficult to complete the project.

In terms of indicator development, writing and review, the strength of the project was in the volunteers dedicated to the work. There were four sub-groups working on 24 indicators as well as numerous other resources. Each sub-group had a different history and mix of people and disciplines. What worked well was to assign a small group of two or three people to work on an indicator together, optimally a mix of epidemiologists and content experts. This made the work more manageable and easier to plan. A small group was also more accountable and engaged in the process.

The PM's persistence in getting volunteers to follow timelines, finding reviewers and constantly communicating what needed to be done helped the project succeed. Project communication was key, specifically: meeting minutes and action items; project plans with timelines; and regular touch base meetings between the PM and leads, and the PM and CIWG Chair.

Areas for Improvement

While volunteers are the strength of this project, they can also provide challenges. The main challenge that this project encountered was engaging so many volunteers, who have busy work lives, to take significant amounts of time to work on this project. Volunteers are needed to research the indicator background, consult with experts, complete analysis, and make decisions on the best approach to take, write the indicator, obtain feedback on drafts and make final changes. A lot of this work is incredibly detailed. An indicator that seems straightforward could have many conflicting opinions.

This volunteer work was difficult to manage for a number of reasons. The process would often take a long time, during which some sub-group members would change jobs and leave the group as a result. Not all members worked for public health, so they might not have had as much of a vested interest in the project. Members have other competing duties and events such as the H1N1 outbreak can shift priorities so that there is little to no time to work on the CIP project. This also put the PM in a difficult position since she was trying to "manage" people over whom she had no authority. This was compounded by four different sub-groups who worked in four different ways. As well, there was not sufficient managerial and administrative support for the PM, since that was also done on a "volunteer" basis.

Another stage of the process that was challenging was obtaining external reviewers to provide feedback on the drafts. Reviewers were obtained by soliciting volunteers on the APHEO listserv and as well as by directly contacting specific experts in the field. Finding reviewers was particularly difficult towards the end of the project when many indicator drafts were being completed simultaneously.

Given all of the work and all of the people, communication proved difficult at times. Some members complained of too many emails. At times, it was difficult keeping track of the most recent draft of an indicator and what specific decisions had been made and why.

Lessons Learned

A variety of improvements could be made to make the project run smoother in the future. Many of these suggestions will be considered by the CIWG and sub-groups as they continue to work on the Core Indicators project.

The critical item needed to ensure the future success of the Core Indicators project is having sufficient resources. A full-time dedicated PM is important, along with some administrative and managerial support. Perhaps an organization such as the Ontario Agency for Health Protection and Promotion can provide these resources. The Agency could accommodate unique models for completing the work, e.g. secondments so that certain components could be completed and they would still be able to maintain the volunteer structure that brings expertise from many sources together.

Other suggestions for improvement focused on the organizational structure of the project. It may be more appropriate for the CIWG to be renamed an advisory committee or steering committee, since that seems to be more of its role. The CIP Steering Committee, which was established to manage the PHAC project, was useful for hiring the PM position but played a minimal role afterwards; it was

the CIWG that actually managed the project. The CIP Advisory Committee just added more meetings.

The sub-group members need more orientation to the Core Indicators project. An orientation package and process needs to be developed. A CIWG update at each sub-group meeting would be useful. As part of the orientation, sub-group members and their employers must understand the commitment and amount of work involved in being part of the group. Those recruited to help with the indicators must be made aware up front of the workload involved and what their commitment and contribution will be. Content experts need not think that they cannot contribute as much as the epidemiologists – their input is important for making a clear, understandable and useful product. They can contribute to certain parts of writing the indicator, even if they are unable to do actual analysis.

It is important to establish timeframes and a specific work plan for completing the indicators. Small teams of two or three worked well to work on each indicator. The sub-groups need templates for meeting minutes so that everyone captures the same type of information and action items in similar formats.

Another suggested improvement is the use of technology so that there is one draft that everyone is working from and not multiple versions being emailed out. This was investigated at one time but this needs to be examined more closely. Some possible tools include: Canadian Network for Public Health Intelligence (CNPHI); Googledocs; Ontario Public Health Portal.

It was felt that occasional face-to-face meetings were important for the sub-groups, particularly for new ones starting out, e.g., a kick off meeting. The sub-groups do all their work by teleconference and email. A face-to-face meeting can help build rapport and allow the sub-group to step back to determine their direction.

Since a lot of time and effort was made in selecting and recruiting external reviewers, members had a few suggestions for improving this part of the process, including:

- Develop and maintain an inventory of key public health experts by area of expertise – something that can be referred to as needed. This way, we won't have to scramble to find reviewers at the last minute.
- Re-evaluate whether a CIWG member needs to review each indicator.
- Determine specifically what kind of a review we need from reviewers.
- Since many external experts are used in the indicator development phase, consider whether a broader APHEO member review is the only review that is needed.

- Distribute a quarterly email indicating numbers of reviewers needed and areas of expertise- this will give people more advance notice.

It is also important to document the names of those who provided particularly valuable input on specific indicators, in order to go back to these people when the indicator is being updated again, or when similar indicators are being created. The list could also include people who were members of the sub-groups and did a significant amount of work on specific indicators and know the information inside and out.

Finally, because this project relies so heavily on volunteers, it is important that this work be recognized. The employers of these volunteers, e.g. Medical Officers of Health, should be sent a letter by the CIWG Chair or APHEO President to acknowledge the contribution of their employees. This is particularly fitting for the sub-group leads who spent a significant amount of time and effort on the Core Indicators project.

Conclusion

The CIP project proved to be an important catalyst for the Core Indicators project. In one short year, many people were fully engaged in this project. APHEO appreciates PHAC's support for this important work.

Appendix 1- Acknowledgements (July 4, 2008-July 2009)

Chair: *Mary-Anne Pietrusiak*, Durham Region Health Department

Subgroup Leads:

Healthy Eating and Active Living-
Shanna Hoetmer, York Region Community and Health Services Department
Cancer, Smoking and Sun Safety-
Brenda Guarda, Public Health Agency of Canada
The Built Environment-
Ahalya Mahendra, Public Health Agency of Canada, Ontario and Nunavut Region
Leading Causes-
JoAnn Heale, Ministry of Health and Long-Term Care

Project Manager: *Harleen Sahota*, Association of Public Health Epidemiologists in Ontario

Website Administrator: Lee Sieswerda, Thunder Bay and District Health Unit

Core Indicators Work Group:

Mary-Anne Pietrusiak (Chair), Durham Region Health Department
Sherri Deamond, Durham Region Health Department
Shanna Hoetmer, York Region Community and Health Services Department
Carol Paul, Ministry of Health and Long-Term Care
Brenda Guarda, Public Health Agency of Canada
Julie Stratton, Peel Health Department
JoAnn Heale, Ministry of Health and Long-Term Care
Brenda Wannell, Statistics Canada
Susan Bondy, University of Toronto
Ahalya Mahendra, Public Health Agency of Canada, Ontario and Nunavut Region
Katherine Russell, Ottawa Public Health
Elizabeth Rael, Ministry of Health Promotion
Anjali Misra, Institute for Clinical Evaluative Sciences

Thanks to Nam Bains, Mitsi Cardinal, Lisa Hall, Jane Hohendel and Karey Iron for their contributions on this group.

Sub-Group Members:

Cancer, Smoking and Sun Safety Sub-Group-

Brenda Guarda (Lead), Public Health Agency of Canada
Beth Theis, Cancer Care Ontario *Ali Artaman*, Windsor Essex County Health Unit
Carol Paul, Ontario Ministry of Health and Long-Term Care
Katherine Russell, Ottawa Public Health
Jolene Dubray, Ontario Tobacco Research Unit
Elizabeth Rael, Ministry of Health Promotion
Susan Bondy, University of Toronto

Thanks to John Barbaro and Scott Leatherdale for their contributions on this group.

Healthy Eating and Active Living Sub-Group-

Shanna Hoetmer (Lead), York Region Community and Health Services
Rebecca Truscott, Cancer Care Ontario
Elsa Ho, Ontario Ministry of Health and Long-Term Care
Ahalya Mahendra, Public Health Agency of Canada, Ontario and Nunavut Region
Peggy Patterson, Renfrew County and District Health Unit
Jennifer Skinner, Haliburton, Kawartha, Pine Ridge District Health Unit
Fangli Xie, Durham Region Health Department

Thanks to Krystina Nickerson, Natalie Greenidge, Lauren Josselyn, Sujitha Ratnasingham and Wendy Young for their contributions on this group.

Leading Causes Sub-Group-

JoAnn Heale (Lead), Ministry of Health and Long Term Care
Brenda Guarda, Public Health Agency of Canada
Elizabeth Rael, Ministry of Health Promotion
Julie Stratton, Region of Peel Health Department
Katherine Haimes, Ottawa Public Health

Thanks to Jane Hohenadel and Rachel Savage for their contributions on this group.

The Built Environment Sub-Group-

Ahalya Mahendra (Lead), Public Health Agency of Canada, Ontario and Nunavut Region
Kristie Daniel, Halton Region Health Department
Donna Howard, Ministry of Health Promotion
Anne-Marie Holt, Haliburton Kawartha Pine Ridge District Health Unit
Sarah Maaten, Elgin St. Thomas Health Unit
Deborah Moore, Niagara Region Public Health
Megan Williams, Simcoe Muskoka District Health Unit

Thanks to Daniel Corsi and Samara Foisy for their contributions on this group.

Reviewers and Contributors:

Amanda Tavares, Region of Waterloo Public Health
Anjali Misra, Institute for Clinical Evaluative Sciences
Anna Chiarelli, Cancer Care Ontario
Beth Theis, Cancer Care Ontario
Brenda Wannell , Statistics Canada
Carol Paul, Ministry of Health and Long-Term Care
Chee Wong, Ministry of Health Promotion
Dawn Marvin, Ministry of Health and Long-Term Care
Deborah Carr, Oxford County, Public Health & Emergency Services
Denise De Pape, BC Ministry of Healthy Living and Sport
Diane Nishri, Cancer Care Ontario
Doug Manuel, Ottawa Health Research Institute

Elizabeth Rael, Ministry of Health Promotion
Ellen Chan, Ministry of Health and Long-Term Care
Emma Tucker, Halton Region Health Department
Erin Pichora, Cancer Care Ontario
Frank Shi, Eastern Ontario Health Unit
Heather Thomas, Middlesex-London Health Unit
Jaime Chow, Durham Region Health Department
Jay Onysko, Public Health Agency of Canada
Jennifer Jenkins, Halton Regional Health Department
Jennifer Skinner, Haliburton, Kawartha, Pine Ridge District Health Unit
JoAnn Heale, Ministry of Health & Long Term Care
John Barbaro, Simcoe Muskoka District Health Unit
Julie Mandeville, Statistics Canada
Julie Stratton, Region of Peel Public Health
Karey Iron, Institute for Clinical Evaluative Sciences
Katherine Russell, Ottawa Public Health
Kathy Moran, Regional Municipality of York
Katrice Edgar, Public Health Services Department, City of Hamilton
Krista Burns, Ministry of Health Promotion
Laurie Elit, McMaster University
Lee Sieswerda, Thunder Bay District Health Unit
Lisa Pogany, Public Health Agency of Canada
Loraine Marrett, Cancer Care Ontario
Lorna Larsen, Ministry of Health Promotion
Mary O'Brien, Halton Region Health Department
Mary-Anne Pietrusiak, Durham Region Health Department
Maurizzio Colarossi, Region of Peel Public Health
Michael King, Sudbury & District Health Unit
Michael Spinks, South East LHIN (formerly Cancer Care Ontario)
Norman Giesbrecht, Centre for Addiction and Mental Health
OPHA Food Security Workgroup
Pat Vanderkoy, Region of Waterloo Public Health
Robbi Howlett, Cancer Care Ontario
Robert Mann, Centre for Addiction & Mental Health
Saira Bahl, Cancer Care Ontario
Scott Leatherdale, Cancer Care Ontario
Shailee Tanna, Middlesex-London Health Unit
Shanna Hoetmer, York Region Community and Health Services
Shawn O'Connor, Centre for Addiction and Mental Health
Sherri Deamond, Durham Region Health Department
Stephen Drew, Region of Waterloo Public Health
Susan Bondy, University of Toronto
Suzanne Sinclair, Kingston, Frontenac and Lennox & Addington Public Health

Sylvain Tremblay, Statistics Canada
Verna Mai, Cancer Care Ontario
Vicky Majpruz, Cancer Care Ontario
Vikki Edwards, City of Hamilton Public Health Services
Youth and Adult Substance Misuse working groups and Injury Prevention, Durham Region Health Department