

10th Anniversary

2009

The Health Indicators Project

Report From the Third Consensus
Conference on Health Indicators



Statistics
Canada

Statistique
Canada



Canadian Institute
for Health Information

Institut canadien
d'information sur la santé

The contents of this publication may be reproduced in whole or in part, provided the intended use is for non-commercial purposes and full acknowledgement is given to the Canadian Institute for Health Information.

Canadian Institute for Health Information
495 Richmond Road, Suite 600
Ottawa, Ontario K2A 4H6

Phone: 613-241-7860
Fax: 613-241-8120

www.cihi.ca

ISBN 978-1-55465-682-0 (PDF)
ISBN 978-1-55465-681-3 (Print)

© 2009 Canadian Institute for Health Information

How to cite this document:

Canadian Institute for Health Information, *Report from the Third Health Indicators Consensus Conference 2009* (Ottawa, Ont.: CIHI, 2009).

Cette publication est aussi disponible en français sous le titre *Rapport de la troisième Conférence consensuelle sur les indicateurs de la santé (2009)*.

ISBN 978-1-55465-684-4 (PDF)
ISBN 978-1-55465-683-7 (Imprimé)

How to obtain more information

For information about this product or the wide range of services and data available from Statistics Canada, visit www.statcan.gc.ca, or e-mail infostats@statcan.gc.ca, or telephone us, Monday to Friday from 8:30 a.m. to 4:30 p.m., at the following numbers:

Statistics Canada's National Contact Centre

Toll-free telephone (Canada and United States):

Inquiries line	1-800-263-1136
National telecommunications device for the hearing impaired	1-800-363-7629
Fax line	1-877-287-4369

Local or international calls:

Inquiries line	1-613-951-8116
Fax line	1-613-951-0581

Depository Services Program

Inquiries line	1-800-635-7943
Fax line	1-800-565-7757

To access this product

This product, 82-230-X, is available free in electronic format. To obtain a copy, visit www.statcan.gc.ca

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, Statistics Canada has developed standards of service that its employees observe. To obtain a copy of these service standards, please contact Statistics Canada toll-free at 1-800-263-1136. The service standards are also published on www.statcan.gc.ca under "About us" "Providing services to Canadians."

Report from the Third Health Indicators Consensus Conference 2009

Introduction	3
The Health Indicators Project.....	3
The Health Indicator Framework	4
Current Health Indicators.....	6
Health Indicators (as of March 2009)	7
The Third Consensus Conference	9
User Consultation	9
Results from the Consultation.....	9
The Conference	10
Health Indicators: Future Directions	11
Conclusion	12
Appendix 1 – Consultation Results: Health Issues and Indicators	13
Appendix 2 – The Third Consensus Conference - Discussion Notes	20
Appendix 3 – Agenda of the Third Health Indicators Consensus Conference	25
Appendix 4 – Conference Participants	26

Acknowledgements

The Canadian Institute for Health Information (CIHI) and Statistics Canada wish to thank the participants of the 'Third Health Indicators Consensus Conference', as well as representatives from Health Canada, the Public Health Agency of Canada and the regional and provincial representatives who provided the invaluable feedback that forms the basis of the report.

This report could not have been completed without the generous support and assistance of many CIHI and Statistics Canada staff members who worked on the print, translation, communications, web design and distribution; and provided ongoing support to the core team.

Special appreciation goes to Marie Patry, Brenda Wannell, Lawson Greenberg, Robin Landry, Tim Johnston and Linda Lefebvre at Statistics Canada and to Indra Pulcins, Eugene Wen, Zeerak Chaudhary and Carolyn Sandoval from CIHI for their contribution to this print report.

Introduction

Health indicators are measures of health and of the factors which influence health. As such they can be used to inform health policy, manage the health care system, enhance our understanding of the broader determinants of health, as well as to identify gaps in the health status and outcomes for specific populations. While there are countless indicators that could be calculated, the challenge is to identify which are the most important to measure and track; what types of indicators best reflect the needs of those who use them; which of the current indicators are no longer relevant and may therefore be dropped or replaced by more suitable measures; and finally, how can the cross-cutting dimension of equity be addressed in the evaluation of the indicator set. These and other questions were discussed at the Third Health Indicators Consensus Conference, held in March 2009. The results of the conference are summarized in this report.

The Health Indicators Project

The Health Indicators project, which is a collaboration between Statistics Canada and Canadian Institute for Health Information (CIHI), began ten years ago with the objective of providing health regions, health care providers and the public in general with reliable and comparable data on the health of Canadians, the health care system and the determinants of health. The First Consensus Conference on Population Health Indicators was held on May 4, 1999. During this conference, participants agreed on a conceptual model for this project - the Health Indicator Framework along with the initial set of indicators and suggestions for future development. In March 2004, Statistics Canada and CIHI convened the Second Consensus Conference on Population Health Indicators, to guide the further development of health indicators and to introduce the equity dimension explicitly to the framework.

In addition to these events, ongoing consultations with provincial and regional health authorities help to ensure data quality and consistent methods.

In the last decade, over 80 indicators have been developed to measure the health of the Canadian population and the performance of the health care system. The goal of this collaborative project has been to compile indicator data and make the information widely available. The *Health Indicators* Internet publication, accessible from both CIHI and Statistics Canada websites, holds the entirety of regional indicator data produced by the Indicator project.

What is a 'Health Indicator'?

The term *health indicator* refers to a single summary measure, most often expressed in quantitative terms, that represents a key dimension of health status, the health care system or related factors. A health indicator must be informative, and also be sensitive to variations over time and across jurisdictions. Designed to provide comparable information at the health region and provincial/territorial levels, these health indicator data are produced from a wide range of the most recently available sources. The statistics produced support health authorities in their role of monitoring, improving, and maintaining the health of the population and the functioning of the health system.

Indicator selection criteria

- reliable and valid measure of an important health issue;
- clear, interpretable, and actionable;
- based on standard and therefore comparable definitions and methods;
- use data that are available at the national, provincial, territorial, health region and sub-regional

The Health Indicator Framework

The Health Indicator Framework has five dimensions, i.e. Health Status, Non-medical Determinants of Health, Health System Performance, Community and Health System characteristics, and Equity. Participants of past conferences have agreed on an initial core set of indicators which populate the framework.

While the framework has been widely used in guiding indicator development and related discussions, some people may have difficulty distinguishing between the framework itself and the indicators listed within each "cell" of the framework. It might be helpful to clarify that the framework is a conceptual "shelf" that can be used to categorize indicators and to inform indicator selection. It does not refer to a mere indicator list; rather, the listed indicators were developed under the guidance of the framework. They may change frequently to meet the needs from the field, while the framework remains relatively stable. In fact, the International Organization for Standardization (ISO) is in the process of adopting the Health Indicator Framework as a formal international standard.

Health Indicator Framework

HEALTH STATUS			
<i>How healthy are Canadians? Health status can be measured in a variety of ways, including well-being, health conditions, disability or death.</i>			
Well-being	Health Conditions	Human Function	Deaths
Broad measures of the physical, mental, and social well-being of individuals.	Alterations or attributes of the health status of an individual which may lead to distress, interference with daily activities, or contact with health services; it may be a disease (acute or chronic), disorder, injury or trauma, or reflect other health related states such as pregnancy, aging, stress, congenital anomaly, or genetic predisposition.	Levels of human function are associated with the consequences of disease, disorder, injury and other health conditions. They include body function/structure (impairments), activities (activity limitations), and participation (restrictions in participation).	A range of age-specific and condition specific mortality rates as well as derived indicators.
NON-MEDICAL DETERMINANTS OF HEALTH			
<i>Non-medical determinants of health are known to affect our health and, in some cases, when and how we use health care.</i>			
Health Behaviours	Living and Working Conditions	Personal Resources	Environmental Factors
Aspects of personal behaviour and risk factors that epidemiological studies have shown to influence health status.	Indicators related to the socio-economic characteristics and working conditions of the population, that epidemiological studies have shown to be related to health.	Measures the prevalence of factors, such as social support that epidemiological studies have shown to be related to health.	Environmental factors with the potential to influence human health.
HEALTH SYSTEM PERFORMANCE			
<i>How healthy is the health system? These indicators measure various aspects of the quality of health care.</i>			
Acceptability	Accessibility	Appropriateness	Competence
All care/service provided meets the expectations of the client, community, providers and paying organizations, recognizing that there may be conflicting or competing interests between stakeholders, and that the needs of the clients/patients are paramount.	The ability of clients/patients to obtain care/service at the right place and right time, based on respective needs.	Care/service provided is relevant to the clients'/patients' needs and based on established standards.	An individual's knowledge and skills are appropriate to the care/service being provided.
Continuity	Effectiveness	Efficiency	Safety
The ability to provide uninterrupted, coordinated care/service across programs, practitioners, organizations, and levels of care/service, over time.	The care/service, intervention or action achieves the desired results.	Achieving the desired results with the most cost-effective use of resources.	Potential risks of an intervention or the environment are avoided or minimized.
COMMUNITY AND HEALTH SYSTEM CHARACTERISTICS			
<i>These measures provide useful contextual information, but are not direct measures of health status or the quality of health care.</i>			
Community	Health System	Resources	
Characteristics of the community or the health system that, while not indicators of health status or health system performance in themselves, provide useful contextual information.			

EQUITY

Current Health Indicators

Priorities and directions for health indicators work are regularly reviewed to ensure that the indicator data meet the changing needs of users across Canada. As a result of ongoing research and consultations, certain indicators have been added and changed; others have been dropped.

There is potential for an ever-expanding list of indicators which is not ideal. Not only are there limited resources to maintain the latest data, but there is a risk that the set of indicators may be multiple measures for the same issue. Therefore, the exercise of evaluating current indicators goes hand in hand with adding indicators.

In recent years, due to data quality concerns, limited data availability or geographic coverage, the following indicators have been removed from the framework:

- Self-esteem
- Depression
- Smoking Initiation
- Decision Latitude at Work
- Social Support
- May Not Require Hospitalization
- Expected Compared to Actual Stay
- Hip Fracture Hospitalization

Several indicators have been added to the framework, some of which are the result of new questions added to the Canadian Community Health Survey (CCHS) while others represent expanded use of administrative data. Many of these indicators are intended to replace, expand, or more accurately measure an aspect of health formerly represented by an indicator which has been dropped from the framework. These changes have been reinforced by consultation feedback. The following indicators have been added to the framework:

- Perceived Mental Health
- Mood Disorders
- Small for Gestational Age
- Pre-term Births
- Hospitalized Stroke Event Rate
- Hospitalized Acute Myocardial Infarction (AMI) Event Rate
- Sedentary Activity
- Food Security
- Sense of Community Belonging
- Life Satisfaction
- Colorectal Cancer Screening
- Regular Medical Doctor
- Wait Time for Hip Fracture Surgery
- Percutaneous Coronary Intervention (PCI)
- Hospitalized Hip Fracture Event Rate
- Cardiac Revascularization

Refer to the current Health Indicators table which has been updated to reflect these changes to the indicator set:

Health Indicators (as of March 2009)

Health status			
Well-being	Health conditions	Human function	Deaths
<ul style="list-style-type: none"> • Perceived health • Perceived mental health • Perceived life stress 	<ul style="list-style-type: none"> • Adult body mass index • Youth body mass index • Arthritis • Diabetes • Asthma • High blood pressure • Pain or discomfort that prevents activities • Pain or discomfort by severity • Mood disorders • Low birth weight • Cancer incidence • Injury hospitalization • Injuries • Hospitalized stroke event rate • Hospitalized AMI event rate 	<ul style="list-style-type: none"> • Functional health • Two-week disability days • Participation and activity limitation • Life expectancy: <ul style="list-style-type: none"> • Disability-free life expectancy • Disability-adjusted life expectancy • Health-adjusted life expectancy 	<ul style="list-style-type: none"> • Infant mortality • Perinatal mortality • Life expectancy • Total mortality and selected causes • Potential years of life lost (PYLL) by selected causes
Non-medical determinants of health			
Health behaviours	Living and working conditions	Personal resources	Environmental factors
<ul style="list-style-type: none"> • Smoking • Heavy drinking • Physical activity during leisure-time • Breastfeeding practices • Fruit and vegetable consumption 	<ul style="list-style-type: none"> • High school graduates • Post-secondary graduates • Unemployment rate • Long-term unemployment rate • Low income rate • Children in low income families • Average personal income • Median share of income • Government transfer income • Housing affordability • Crime incidents • Adults and youth charged • Food security 	<ul style="list-style-type: none"> • Sense of community belonging • Life satisfaction 	<ul style="list-style-type: none"> • Exposure to second-hand smoke at home • Exposure to second-hand smoke in vehicles and public places

Health system performance			
Acceptability	Accessibility	Appropriateness	Competence
	<ul style="list-style-type: none"> • Influenza immunization • Mammography • Pap smear • Regular medical doctor • Wait time for hip fracture surgery • Colorectal cancer screening 	<ul style="list-style-type: none"> • Caesarean section 	
Continuity	Effectiveness	Efficiency	Safety
	<ul style="list-style-type: none"> • Pertussis (PHAC) • Measles (PHAC) • Tuberculosis (PHAC) • HIV (PHAC) • Chlamydia (PHAC) • Pneumonia and influenza hospitalization • Causes amenable to medical intervention • Ambulatory care sensitive conditions • 30-day acute myocardial infarction (AMI) in-hospital mortality • 30-day stroke in-hospital mortality • Acute myocardial infarction (AMI) readmission rate • Asthma readmission • Hysterectomy readmission • Prostatectomy readmission • Pneumonia readmission 		<ul style="list-style-type: none"> • In-hospital hip fracture • Hospitalized hip fracture event rate
Community and health system characteristics			
Community	Health system	Resources	
<ul style="list-style-type: none"> • Population estimates • Population density • Dependency ratio • Urban and rural population • Aboriginal population • Immigrant population • Internal migrant mobility • Metropolitan Influenced Zones • Lone-parent families • Visible minority population • Teen pregnancy 	<ul style="list-style-type: none"> • Inflow/outflow ratios • Coronary artery bypass graft (CABG) • Percutaneous coronary intervention (PCI) • Cardiac revascularization • Hip replacement • Knee replacement • Hysterectomy • Contact with alternative health care providers • Contact with a medical doctor • Contact with health professionals about mental health • Contact with dental professionals 	<ul style="list-style-type: none"> • Physicians • Nurses • Allied professional • Health expenditures 	
Source(s): Statistics Canada, Canadian Institute for Health Information			

The Third Consensus Conference

User Consultation

In preparation for the Third Consensus Conference, extensive consultations were conducted with the purpose of

- Learning more about data users;
- Ensuring the relevance of current indicators;
- Identifying priority health issues and potential indicators for development; and
- Identifying ways to improve data access/dissemination.

The consultation was initiated as a Web survey inviting input from key stakeholders from across the country. The survey was directed towards individuals who work with health indicators or are involved in health services and/or population health research. The questions in the survey were designed to get feedback on the current set of indicators (including any suggestions for new indicators) and ways to improve access to the data. The Web survey was launched for three weeks in January 2009 during which approximately 200 responses were received.

Separate consultations, covering the same questions, were organized with the Public Health Agency of Canada and Health Canada. Their input was provided in reports and later incorporated into materials developed for the consensus conference discussions.

Results from the Consultation

The first section in the online survey addressed the usage and relevance of the current set of indicators. Overall, it appeared that indicators are used fairly equally as information for the public and the health sector, for policy and planning and for performance management, monitoring and quality improvement. Respondents also noted that indicator data are used for research and teaching purposes as well as for community based health assessments/comparisons (at the regional and provincial levels).

Over half of the respondents revealed that the existing set of health indicators met their data needs, but over 40% felt that additional indicators would be useful. Respondents were asked to provide suggestions for new indicators along with the rationales behind them, resulting in an extensive list. These suggestions were then grouped together into related 'health issues'. These issues and the indicator ideas within them would be used as a part of discussion materials for the consensus conference.

A question discussing a reduction of the current indicator set resulted in only twenty percent of respondents identifying indicators that could be dropped or replaced within the framework.

To better understand priority aspects of the equity dimension across indicators—going beyond the regularly produced breakdowns by age group, sex, health regions—respondents were asked to rank equity-related breakdowns for health indicators. It was found that breakdowns by income, rural/urban, education, Aboriginal population, and census metropolitan area (listed in order of importance) need further development.

Questions in the second section of the survey were designed to identify difficulties accessing health indicator data. Overall, it was found that the Statistics Canada and CIHI websites are used equally to access indicator data with a lesser percentage relying on the print publication. While the majority of respondents reported experiencing no difficulty finding health information released by the Health Indicators Project, one third of respondents experienced problems with navigating the web-sites and finding the most recent or appropriate data.

However, for both websites only 1 in 5 users experienced difficulty in using Statistics Canada data tables and/or the CIHI data interface.

Many activities are currently underway to improve access to health indicators, some of which have been implemented within the Health Indicators release in June 2009.

The Conference

On March 26, 2009, Statistics Canada and the Canadian Institute for Health Information (CIHI) convened the Third Consensus Conference on Health Indicators. This event marked the 10th anniversary of the Statistics Canada and CIHI Health Indicator Project. The purpose of the meeting was to present the current set of indicators designed to support health regions in monitoring the health of the population and the healthcare system as well as to outline priority areas for indicator development.

Various stakeholders were invited to participate from across the health field, including individuals from public health, the healthcare system, and government organizations invested in health (See Appendix 4 – Conference Participants). Participants were presented with an overview of results from the consultation process as well as the latest set of indicators. Using a summary of the health issues identified through these consultations (See Appendix 1 – Consultation Results: Suggested Health Issues & Indicators), participants collaborated on the identification of priority health areas and discussed potential indicators that could be developed within these fields. Information about the work underway developing indicators on health inequality was also presented (See Appendix 3 – Agenda of the Third Health Indicators Consensus Conference.)

Health Indicators: Future Directions

During the conference, group discussions helped to prioritize health areas highlighted by the consultation process, to address current gaps in the Health Indicators Framework, and to communicate indicator development preferences. The groups referred to a summary of the indicator areas suggested during the consultations, and a consensus building process was used to attain a set of health areas deemed most important for future indicator development work.

The priority health areas identified by the group were:

- Health Care Outcomes
- Child and Youth Health
- Mental Health
- Social Determinants of Health
- Healthy Environments
- Aboriginal Health

The conference participants then gathered into new discussion groups in order to identify potential indicators which could best characterize each health issue (again working with summarized feedback from the pre-conference consultations). Participants identified data gaps within each area and suggested indicators that could be developed in the next five years. It was acknowledged that these discussions were only the beginning of the challenging process of developing new indicators. Additional consultation and collaborations with expert groups and with other relevant indicator initiatives will be essential to move forward in the coming years.

In addition to the extensive list of indicators suggested during the discussion sessions, some participants noted that changes to the framework structure may be necessary in the future. This observation included the potential need for removal of blank category cells and/or renaming of some category headings.

The following is a brief summary of the discussion themes surrounding each priority health area. Please refer to Appendix 2 - Consensus Conference - Discussion Notes for a more detailed list of suggested indicators and discussion topics within these priority areas, identified both during the 2009 Consensus Conference and through the consultation process.

1. Health Care Outcomes

As part of the Health Care Outcomes discussion, the group planned to focus on all health care system performance issues, including patient safety, access to care, efficiency of care, appropriateness as well as outcomes. All of the framework categories under Health System Performance were brought into the discussion as areas that could potentially be measured to fully represent the 'outcome' of any one indicator. An important aspect of the discussion focused on 'value for money' associated with these outcome indicators and the importance of adding a standardized cost component to aid in the areas health research and policy.

2. Child and Youth Health

There are clear challenges in terms of sample size and resources for the collection of health indicators for this specific population. Many of the indicator suggestions put forth were under the categories of health conditions, health behaviours, and environmental factors.

3. Mental Health

The area of mental health is particularly challenging for indicator development, as the data available are limited. The group discussed issues and potential indicators related to utilization of services, suicide, prevalence of disorders, dependency behaviours, and the importance of measuring aspects such as stigma and discrimination as well as positive mental health measures.

4. Social Determinants of Health

Discussion covered measures of equity including outcomes of inequality such as reliance on social systems, education, income, housing affordability, nutrition, food security, social capital, homelessness, and numerous other factors related to living and working conditions, and social supports known to have an influence on health.

5. Environmental Health

Indicator areas measuring the built environment (e.g., neighbourhood walkability) and environmental factors (e.g., air and water quality, exposure to contaminants, pesticide use) were explored in the discussion as well as potential data sources and the general problems associated with collecting national level comparable data in these areas.

6. Aboriginal Health

The area of Aboriginal health was identified as being crucial in the expansion of health indicators work. It was noted that in many ways Aboriginal health indicators cut across the entire framework. Furthermore, work to identify indicator data needs should involve collaboration with existing indicator initiatives on Aboriginal Health. As a result, there was no discussion group set up for this topic in particular.

Conclusion

In the ten years since Statistics Canada and CIHI released the first series of health indicator data, indicators have been evolving and expanding to serve a wide range of purposes. Conference participants from diverse health backgrounds have described the many ways in which indicators are used at different health jurisdiction levels. In addition to setting priorities for future development, the third consensus conference provided an opportunity to celebrate 10 years of indicator work between Statistics Canada and the Canadian Institute for Health Information and to reflect on the project's evolution and the challenges that lie ahead.

Each of the indicators identified through the consultations and conference discussions holds importance for some type of research or for a certain organization. The challenge in responding to such a range of suggestions is to pinpoint which indicators are the most relevant given the current health culture and also which indicators can realistically be produced given the existing or potential data sources. Now that priority health areas have been clearly identified by our data users, the next step is to collaborate with other indicator initiatives and use potential data sources for further indicator development. Though not all indicators can be cultivated through this process, we are hopeful that progress will be made in several of these health areas through research, additional consultations and collaboration in the coming years.

Appendix 1 – Consultation Results: Health Issues and Indicators

Health Issue	Indicator areas reported via consultations	Potential Source
Aboriginal Health	Accessibility (i.e. mother tongue, proximity / availability of community services, childhood immunizations) Addictions Domestic violence / abuse Environmental health (i.e. contaminants, climate) Health behaviours (i.e. sexual health practices, consumption of country food) Health conditions (i.e. lung cancer, breast cancer, COPD, injury by intentional / unintentional, co-infections) Infant mortality / live births Living and working conditions (i.e. housing, crime rates, water quantity / quality, adequate sewage) Suicide Wait times for health procedures	Aboriginal People's Survey / CCHS Aboriginal People's Survey / CCHS / Census follow-up / Vital Census follow-up / Vital Aboriginal People's Survey / Census Census follow-up / Vital
Abuse / Violence	Child abuse / neglect Domestic / spousal abuse Seniors abuse (under care)	
Access to Care	Access to 24/7 primary care provider Access to general practitioner Access to specialist Access to medical records / test results Availability of long-term care beds Doctors accepting new patients Awareness of available health services (prevention, health promotion, specialist) Number of legislated health professionals Readmission for medically complex patients Spending on / cost of non-covered services (medications, home care) Wait time (ACSC, ER, CT/MRI scans, surgery: cancer, cardiac bypass, cataract)	CCHS SHS
Allergies	Food allergies Non-food allergies	

Health Issue	Indicator areas reported via consultations	Potential Source
Appropriateness of Care	C-Sections Implementation of best practices / standardized clinical pathways Induced labour Non-urgent ER visits (treatable in community based PHC practices) Proper prescribing / process of care Tonsillectomies	
Built Environment / Healthy Communities	Access to affordable / reliable transportation Crime rates Falls prevention Neighbourhood sprawl Neighbourhood walkability Perception of safety / security Usage of walking / cycling / public transit	Uniform crime reporting survey Victimization Survey Household and the Environment Survey
Cancer screening	Colorectal Prostate	CCHS Theme 2008
Cardiovascular Health	Cholesterol levels Incidence (Atrial fibrillation, CVD, heart disease, PVD, hyperlipidemia) Length of stay for cardiac care Medication use	
Changes Made to Improve Health	Barriers Motivation Possible changes	CCHS Theme 2007/2008 CCHS Theme 2007/2008 CCHS Theme 2007/2008
Childhood development	Breastfeeding dose / exclusivity Breastfeeding duration Breastfeeding initiation Early childhood development Parental preparation (positive parenting) Reaching growth/development milestones	CCHS Core CCHS Core

Health Issue	Indicator areas reported via consultations	Potential Source
Community-Based Care	Availability Clinics Homecare access / public coverage Homecare utilization Hospital discharges to community based organizations Infection rate Interdisciplinary care Length of stay Presence of family caregiver	
Efficiency	Average ALC days per ALC separation Continuity of care / number of transfers Expected vs. actual length of stay Long-term care patients in acute-care beds Number of days pre-surgery (i.e. hip/knee replacement) Optimal use of day surgery Use of electronic health records	
Environmental Factors	Air quality / pollution Biomonitoring (i.e. concentrations of contaminants in the blood) Climate (i.e. Heat deaths, diseases [Lyme] that may be sensitive to climate change) Congenital anomalies Environmentally friendly households / practices Exposure to environmental contaminants (i.e. radon in home) Heavy metals (body burden) Level of heavy industry in the area Neurodevelopmental disorders Perceived environment indicators Pesticide use Public transit participation Smog advisories Sun safety behaviours Water quality Water borne diseases and deaths	Environment Canada Canadian Health Measurements Survey Canadian Perinatal Surveillance System Household and the Environment Survey Canadian Health Measurements Survey Household and the Environment Survey Environment Canada Canadian Health Measurements Survey Environment Canada

Health Issue	Indicator areas reported via consultations	Potential Source
Functional Limitation / Impairment	Access to dental care providers Amount spent on preventative, diagnostic, and therapeutic measures Cataracts Current oral health Health expectancy: DALE / DFLE / HALE (at regional level) Functional / developmental disability Glaucoma Hearing problems Vision problems	CCHS Theme 2007/2008 CCHS Theme 2009/2010 CCHS Theme 2009/2010
Health Care Human Resources	Interprofessional teams Mental health of health care workers Number of nurses and other health care professionals	Canadian Nurses Association
Health Care Outcomes	5 year cancer remissions 30-day mortality (Congestive Heart Failure) Burden Never events Patient perception of quality of / satisfaction with care Perceived health following an intervention Place of death (for health care utilization / needs at end of life) Readmission - (Asthma, CHF, COPD, Diabetes & Unplanned) Unplanned returns to OR per separation day Years incident-free after major chronic disease event	CCHS Theme 2010
Mental Health	Addiction Admissions for MH conditions more appropriately served in community Anxiety disorders ER visits for mental health diagnosis Family-member perception of care Happiness Mood disorders (i.e. depression) Morbidity (DALY, QALY) Psychological distress Readmission Satisfaction with Life Suicide Utilization of services Well-being index	Mental Health Survey 2002 CCHS Core / Mental Health Survey 2002 CCHS Core / Mental Health Survey 2002 Mental Health Survey 2002 CCHS Core Vital Mental Health Survey 2002
Nutrition	Food security Meat / fish / grain / dairy consumption Nutrient intake (i.e. calcium, salt) Nutrition related biomarkers Quality of FVC module Total consumption	CCHS Nutrition CCHS Nutrition Canadian Health Measures Survey Research report CCHS Nutrition

Health Issue	Indicator areas reported via consultations	Potential Source
Obesity	Child / youth / adult obesity Waist circumference (measured / self-reported)	CCHS Core / Canadian Health Measures Survey Canadian Health Measures Survey
Patient Safety	Hospital selected mortality rate In-hospital infection (i.e. MRSA, VRE, C-Diff, ESBL) In-hospital hip fractures per separation day Incidence of adverse events experienced by patients in hospital Medication reconciliation Perception of safety / trust in hospitals or medical professionals Post-operative / surgical site infection Surgical misadventures	
Patient-Centered Planning	Co-morbidity (diabetes & hypertension) Continuity of care Reasons for admission (top 5-10)	
Physical / Sedentary Activity	Active transportation Affordability of sports equipment and activities Physical activity other than during leisure time (i.e. at work) Playing video games Reading Using computer Watching TV / videos	CCHS Core CCHS Theme 2007/2008 (ages <20) CCHS Theme 2007/2008 CCHS Theme 2007/2008 CCHS Theme 2007/2008
Product Safety	Food borne communicable disease Food contaminants Pharmaceutical / Drug adverse reactions Therapeutic and other marketed health products Unintentional poisonings	
Reproductive Health	Abortions Access to appropriate maternal / prenatal care Condom Use Deliveries associated with assisted reproductive technology Failure to conceive after trying for one year or more	CCHS Theme 2009/2010

Health Issue	Indicator areas reported via consultations	Potential Source
	Foetal Alcohol Syndrome Health behaviours of mother (i.e. smoking / drinking) High birth weight Induced labour Number of sexual partners Perinatal complications (post-partum haemorrhage, resuscitation) Pre-conception maternal BMI Small for gestational age STI Incidence Transfers Unplanned pregnancies	Vital CCHS Theme 2009/2010 Vital
Respiratory Health	Chronic obstructive pulmonary disease (COPD) Lung cancer Other chronic diseases related to the respiratory system	CCHS Core (low prevalence) Vital Vital
Seniors / Aging	Accurate prescribing Elder abuse Falls Hospitalizations Institutionalization rate Medication use (potential overuse / inappropriate use) Osteoporosis Seniors living alone	Census
Social Health Determinants	Education Employment Social capital Social desirability / peer pressure Social policy Social support Volunteering	

Health Issue	Indicator areas reported via consultations	Potential Source
Socioeconomic Deprivation	Disability limiting access to food stores Health services care gaps (by population) Healthy food basket cost Homelessness or relative homelessness Housing (affordability, crowding, conditions) Illiteracy / innumeracy Income related food security Lack of transportation limiting access to food stores Precarious employment Proximity of stores selling healthy and affordable food	CPI / Survey on Household Spending Census / Survey on Household Spending Adult Literacy and Life Skills Survey CCHS Theme 2007/2008 Labour Force Survey
Workforce Health	Absenteeism Availability and use of employer health benefits Coverage and use of employee and family assistance programs Decision latitude at work Health supports at work Overtime Shift work Unpaid labour (housework, caregiving) Work stress Workers' Compensation Claims Workplace safety (i.e. accident / injury rates)	CCHS Theme 2007/2008
Youth Health	Increase/Decrease in teen drinking and driving Teen drinking Teen pregnancy Teen substance abuse	

Appendix 2 – The Third Consensus Conference - Discussion Notes

Summary of suggested new indicators for priority areas identified during the 2009 Consensus Conference and through the consultation process:

1. Health Care Outcomes

Effectiveness

Clearly defined outcomes of health programs are necessary to determine if these desired outcomes are being met.

- ACSC prevalence ratio
- ACSC readmission rates
- Readmissions after psychiatric evaluation -To measure effectiveness of mental health treatment before and after crisis level
- Addiction and recovery rates - As a measure of how long patient has abstained from a substance
- Post-intervention functional health status (functional recovery?)
- Cancer remissions
- Stages of cancer
- Survival rates (or deaths) per cancer stage

Efficiency

- Long term care patients in acute-care beds (cross-cut under accessibility and appropriateness)

Patient Safety

- HSMR
- in-hospital infection rates
- in-hospital hip fractures per separation day
- incidence of adverse events, medication reconciliation
- Surgical site infection, surgical misadventures, etc.

Accessibility

- Access to community health care services

Continuity

- Balanced scorecard approach. Need to connect across the disease and care process.
- Distribution across stages of disease

Financial aspect of health care system indicators

Idea was raised that there is a need to show economic/financial relevance in these areas: what are the costs of the indicator measurements (i.e. what are the costs associated with the efficiency indicators)?

Add a standardized costing component, creating composite indicators that help decision makers.

- Influenza immunization coverage with hospitalizations for influenza and expenditures (for immunization and care) across the country
 - How much immunization is enough to prevent a single incident of flu?
- Perceived health as it relates to health care expenditures
- Costs of acute care and ER visits
 - Ontario, Alberta and British Columbia have some of these measures.
 - Case-costing data needs to be linked to the outcome
 - There are many sources which investigate case costs in the UK and Sweden.

2. Child and Youth Health

Health Conditions

- *Congenital anomalies*, information is currently being collected through the Canadian Perinatal Surveillance System
- *Blood lead levels in children*, information on blood lead levels is being collected through the Canadian Health Measures Survey
- *Neurodevelopmental disorders*, information collection is being planned by PHAC (CPSS)
- ADD, ADHD, Autism, rates and access to support services

Health Behaviour

- *Adherence to sun safety guidelines*, information is available in the Canadian Health Measures Survey and the Canadian Community Health Survey.
- *Unintentional injuries* (CIHI, Vital Statistics)
- *Immunization rates*
- *Positive parenting* (NLSCY)

Environmental Factors

- *Awareness of smog advisories or poor air quality alerts*, information is being collected through the Households and the Environment Survey.
- *Food insecurity/nutrition* (Canadian Community Health Survey, National Longitudinal Survey of Children and Youth (NLSCY))
- *Access to medical professionals*
- *Access to quality childcare*

3. Mental Health

Utilization of services

- Admissions & Readmissions (in hospital in DAD)
- Length of stay
- Cost (admin point of view)
- Type of services and where they are getting it
- ER visits

Disorders (prevalence)

- Anxiety
- Mood disorders
- Depression
- Seasonal depression
- Bipolarity
- Schizophrenia
- Psychological distress (precursors)
- Concurrent disorders or addictions (comorbidity)

Dependency

- Prescription drugs addictions (hospitalization from DAD)
- Gambling
- Alcohol
- Technology addictions

Positive Mental Health

- Happiness
- Satisfaction with life
- Well-being Index
- Community belonging
- Distress
- DALY, QALY – of people with mental health problems

Suicide

- Attempted suicide (through DAD)
- Thoughts of suicide
- Suicide death

Stigma / Discrimination

4. Social Determinants of Health

Three categories:

1. Variables needed for reporting of discrete levels of social indicators
2. Basket of variables that will together focus on a specific indicator
3. Variables used for stratification for indicators

Discrimination index (analogous to work done in the USA)

- racialized discrimination
- will allow for link to aboriginal health and recent immigrants
- income and racialization in urban areas

Gender inequity index (analogous to work done in Sweden)

- stand alone – analogous to human development index

Equity Sensitive Indicators

- gender based
- Need to look at indicators themselves as to whether they are gender masking
- utilization versus need – access to health services

Social Capital (need to look at the main drivers of social capital)

- social networks
- cohesion
- community resources
- citizen engagement
- trust in government

Reliance on social systems

- financial assistance
- transition of going on and off social systems and financial systems
- % of people unemployed that are eligible for EI (looking at system response)

Education

- school readiness
- proportion of population with certain academic achievement at certain ages

Housing affordability

- including waitlists for social housing
- core housing need index (from CMHC) which looks at affordability, suitability, and need for major repairs
- structural indicators – housing affordability, housing stock

Volunteering

Nutrition

- Nutritious Food basket
- Food security -- summary measure versus the factors that influence it
 - cost, market basket measure through HRSDC
 - proximity to stores where healthy food is available

Voter participation

- civic engagement
- sense of belonging

Employment

Income

Homelessness

Health benefit coverage for those employed

- dental care coverage
- prescription drug coverage

5. Environmental Health

Built Environment (refers to “man-made” surroundings)

- Housing quality/Crowding Indicator
- Walkability Indicators (availability of sidewalks, perceived safety, etc)
- Modal Split Indicator (commute to work – dual mode)

Environmental Factors (need to investigate new data sources)

- Air quality indicators
- Boiled Water Advisories
- Exposure to contaminants
- Water-borne diseases and deaths
- Chemical Spills
- Cosmetic Pesticide Use
- Unintentional Injuries – including poisoning.
- Community Safety Index (sun safety behaviour, rates of melanoma)

Appendix 3 – Agenda of the Third Health Indicators Consensus Conference

Lord Elgin Hotel - Ontario Room
Ottawa, Ontario - March 26, 2009

8:30 Arrival and Refreshments

9:00	Welcome and Opening Remarks	Gary Catlin & Helen Angus
9:15	Overview of the Conference and Introductions	Paula Stanghetta
9:25	Keynote Address	Michael Wolfson
9:45	Equity dimension: Panel and discussion	Cory Neudorf & Trevor Hancock
10:25	Consultation results and proposed indicator changes	Eugene Wen & Brenda Wannell

10:45 Break

11:00	Small group discussion – Part 1 Identify priority areas (health issues)	All
12:00	Group check-in	All

12:30 Lunch

1:30	Small group discussion – Part 2 Identify best indicators to develop within priority areas	All
------	--	-----

2:45 Break

3:00	Debrief on process and results	All
3:15	Dissemination plans	Julie McAuley & Indra Pulcins
3:30	Summary	Paula Stanghetta
3:45	Closing Remarks	Gary Catlin & Helen Angus

4:00 Adjourn

Appendix 4 – Conference Participants

Name		Region/Organization
Angus	Helen	Canadian Institute for Health Information
Bains	Nam	Ontario Ministry of Health and Long Term Care
Barré	Louis	Canadian Institute for Health Information
Bourdages	Josée	Ministère de la santé et des services sociaux du Québec
Boyne	John	New Brunswick Department of Health
Briggs	Tom	Alberta Health Services
Casey	Jill	Nova Scotia Department of Health
Catlin	Gary	Statistics Canada
Charlton	Pat	Prince Edward Island Ministry of Health
Chaudhary	Zeerak	Canadian Institute for Health Information
Dale	Vincent	Statistics Canada
Danielson	Danton	Health Quality Council
Dean	Stafford	Alberta Health Services
DesMeules	Marie	Public Health Agency of Canada
Driscoll	Eric	Public Health Agency of Canada
Gong	Yanyan	Canadian Institute for Health Information
Greenberg	Lawson	Statistics Canada
Grenier	Louise	Champlain Health Integration Network
Gyorfi-Dyke	Elizabeth	Health Consultant
Hancock	Doris	Newfoundland and Labrador Department of Health and Community Services
Hancock	Trevor	Pan-Canadian Public Health Network
Harvey	Jean	Canadian Population Health Initiative (CPHI)
Hooper	Michelle	Health Canada
Irwin	Glenn	Health Canada
Johnston	Tim	Statistics Canada
Kmetic	Andrew	Provincial Health Services Authority
Landry	Robin	Statistics Canada
Lanouette	Mireille	Hôpital régional Dr-Georges-L.-Dumont
Lefebvre	Linda	Statistics Canada
Legge	Rachel	The Moncton Hospital
Malazdrewicz	Deborah	Manitoba Health
Marcuzzi	Annette	Canadian Institute for Health Information
Mazan	Ryan	Department of Health and Social Services of Nunavut
McAuley	Julie	Statistics Canada
McMahon	Ron	Nunavut Bureau of Statistics
Mitchell	Jonathan	Accreditation Canada
Neudorf	Cordell	Saskatoon Health Region
Patry	Marie	Statistics Canada
Patychuk	Diane	Steps to Equity
Pietrusiak	Mary-Anne	Durham Region Health Department

Name		Region/Organization
Pulcins	Indra	Canadian Institute for Health Information
Russell	Katherine	Ottawa Public Health
Séguin	Jacinthe	Health Canada
Sparling	Heather	Manitoba Health and Healthy Living
Spayne	Mary	Canadian Partnership Against Cancer
Spinks	Michael	South East Local Health Integration Network
Stratton	Julie	Region of Peel, Public Health
Strong	David	Alberta Health Services
Taylor Clapp	Susan	Public Health Agency of Canada
Tchouaffi	Paul	Government of Nunavut Territory
Traverse	Dawn	Alberta Health Services
Tremblay	Sylvain	Statistics Canada
Trumble Waddell	Jan	Public Health Agency of Canada
Turcotte	Sue	Mississauga Halton Health Integration Network
Vaughn	Martha	Health Canada
Vircavs	Rick	Saskatchewan Health
Wannell	Brenda	Statistics Canada
Wen	Eugene	Canadian Institute for Health Information
Werker	Denise	Public Health Agency of Canada
Williams	Kim	Statistics Canada

