Pan-Canadian Public Health Network

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Indicators of Health Inequalities

A report from the
Population Health Promotion Expert Group
and the
Healthy Living Issue Group
for the
Pan-Canadian Public Health Network

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The Indicators of Health Inequalities report is a report of the Population Health Promotion Expert Group (PHPEG) of the Pan-Canadian Public Health Network (PHN). The purpose of the report is to identify pan-Canadian indicators that can be used to measure and report on inequalities in health and in key determinants of health in Canada.

The Indicators of Health Inequalities report was approved by the Public Health Network Council on February 3, 2010, and the Population Health Promotion Expert Group and the Surveillance and Information Expert Group were directed to work together and with key stakeholders in implementing the recommendations in the report.

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Members of the Indicators Joint Working Group were integral in the development of this report:

- **Trevor Hancock (Chair),** Public Health Consultant; British Columbia Ministry of Healthy Living and Sport
- **Michelle Bourgoin,** Director of Wellness; New Brunswick Department of Wellness, Culture and Sport
- **Michael Hayes,** Associate Dean & Professor, Faculty of Health Sciences, Simon Fraser University
- **Jean Harvey,** Director, Canadian Population Health Initiative (CPHI); Canadian Institute for Health Information (CIHI)
- **Lynn Langille,** Co-ordinator, Health Disparities, Chronic Disease and Injury Prevention; Nova Scotia Health Promotion and Protection
- **Leanne Boyd,** Director, Policy Development, Research and Evaluation; Healthy Child Manitoba Office
- **Joel Kettner,** Chief Medical Officer of Health; Manitoba Health
- **Karen Serwonka,** Policy Analyst, Population Health Promotion, Office of the Chief Medical Officer of Health, Public Health Division; Manitoba Health & Healthy Living
- **Hope Beanlands,** Scientific Director, National Collaborating Centre for Determinants of Health

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Previous work conducted by GPI Atlantic was used as a basis for this work. Statistics Canada, in particular Brenda Wannell in Health Indicators, provided valuable information and extensive advice on the indicator development work.

Elizabeth Gyorfi-Dyke was contracted to contribute to the researching and writing of this report.

The opinions expressed herein are those of the Indicators Joint Working Group and do not necessarily represent the views of the Public Health Agency of Canada, the provincial/territorial jurisdictions, or other organizations and specific individuals that contributed to this project.

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1. Introduction and Background

This report for the Pan-Canadian Public Health Network identifies potential indicators for health inequalities. The report outlines the background for the development of this work, the process to date, and the suggested indicators.

Significance of Disparities in Canada

Health disparities "refer to differences in health status that occur among population groups defined by specific characteristics" [1, 2]. There is ample Canadian evidence that health disparities exist in Canada. Determinants of health, such as income, education, social gender, Aboriginal status, ethnicity/culture, and immigrant status, are key factors in the health of Canadians [1, 3-5]. For example, people with low income have poorer health than those with a high income [6]. However, it is not just the differences between the richest and the poorest - there is also a gradient; that is, the richest are healthier that the next richest, and the middle class are healthier than the poorer groups [7].

"The most important consequences of health disparities are avoidable death, disease, disability, distress and discomfort; but it is clear that disparities are also costly for the health system and Canadian society as a whole. Health disparities are inconsistent with Canadian values, threaten the cohesiveness of community and society, challenge the sustainability of the health system, and have an impact on the economy. These consequences are avoidable and can be successfully addressed, but they nevertheless persist and, in some cases, are growing across the country". [1].

Nationally, health inequalities have been a focus over the past few years, with conferences (e.g. Canadian Public Health Association Conference) and various reports [5, 8] focused on health inequalities. The first Chief Public Health Officer (CPHO) report, released in 2008, focused on health inequalities [4]. A number of provinces and regions have also been focusing on health inequalities [9-11]. Other organizations that focus on broader issues of Canada's future prosperity and sustainability, such as the Conference Board of Canada, are also drawing attention to the impact of health inequalities on Canada's overall economic well-being.

The Need for Indicators on Health Inequalities

The Health Disparities Task Group (HDTG) of the Advisory Committee on Population Health and Health Security (ACPHHS) held a forum in 2004 on health disparities to provide input into a discussion paper on disparities. Recommendations at this forum included the need for indicators on disparities [12]. The discussion paper of the HDTG was published in December 2004 [1, 2]. Recommendations from this report included the need to "develop indicators to measure the impact of health disparities on the economy, community and individual well-being" (p. 23). The report identified four areas of disparities that should be a focus given their significance in Canada: gender, geography, Aboriginal Peoples, and socio-economic status (SES).

Based on the recommendation in the HDTG report, the Public Health Network (PHN) Council directed the Population Health Promotion Expert Group (PHPEG) to develop a list of pan-

Canadian indicators that measure the level of health inequalities and the reduction of health inequalities in Canada. The purpose of these indicators would be to facilitate collaborative and efficient action on population health promotion and enable jurisdictions to assess progress in the reduction of health inequalities. The PHPEG has been working on this for the past two years, and the review and identification of indicators of health disparities is a key deliverable in the PHPEG's 2008-2009 work plan.

In addition, the Healthy Living Issue Group (HLIG) is responsible for reporting to the PHN Council through the PHPEG on progress in meeting the targets and outcomes contained in the Integrated Pan-Canadian Healthy Living Strategy (PCHLS) [13]. The two outcomes of the PCHLS are to improve health outcomes and to reduce health disparities. Therefore, to further facilitate the accomplishment of these mandates, the PHPEG and the HLIG formed an Indicators Joint Working Group in the summer of 2008 for the purpose of developing a top 10-20 list of indicators of inequalities in health status and of inequalities in the determinants of health.

There have been many other calls globally and nationally to conduct work on indicators of health inequalities. For example, in the 2008 final report *Closing the Gap* by the WHO Commission on the Social Determinants of Health (CSDH) [14], one of the action areas identified was to "Ensure that routine monitoring systems for health equity and the social determinants of health are in place, locally, nationally, and internationally" (p. 179). Hence, the development of indicators for health inequalities will serve to respond to the CSDH report.[1] Other countries, such as the United States [15] and the United Kingdom [16] already collect and report on indicators for inequalities in health. In Canada in April 2008, the Senate Subcommittee in Population Health released its *Issues and Options* paper, asking "should Canada establish a national information database system on the health of the population and on health disparities"? [8]. In the Senate Subcommittee final report, released in early June 2009, one of the recommendations outlined "that the Population Health Promotion Expert Group accelerate its work to complete within the next 12 months the development of a national set of indicators of health disparities" [28, p. iii]**.**

The Second Consensus Conference on Population Health Indicators (hosted by Statistics Canada and CIHI) took part in March 2004 in Ottawa. One of the main objectives of this meeting was to "introduce the equity dimension of the Health Indicator Framework and begin a dialogue on ways in which this could be measured" [17]. The following were identified as important areas of stratification for this equity lens: income (identified as "most important"), age, gender, education, ethnicity, and rural/urban. The report noted that "conference participants expressed unanimous support for applying equity measures across all dimensions of the framework" [17]; however, limited work on the equity lens has been done to date.

The next section will examine the work of the PHPEG and the Indicators Joint Working Group.

[1] The recommendation from the CSDH will be discussed later in this report.

2. Process to Date

Over the past two years, a comprehensive and inclusive approach has been taken to develop a short-list of indicators on inequalities of health.

An initial PHPEG workshop in October 2006 established the groundwork for developing a set of health disparities indicators. The purpose of this workshop was "to develop a set of indicators to measure the extent of health disparities and their impacts on the economy, community and individual well-being and in relation to the health sector and the social determinants of health". The workshop identified the following three broad categories of indicators:

- Indicators of inequalities in the determinants of health;
- Indicators of inequalities in health status;
- Indicators of the impact of health inequalities on the economy, communities, individuals, and the health care system.

The area focused on "the impact of health inequalities on the economy, communities, individuals and the health care system" (also referred to as "inequalities in consequences of ill health") requires further planning and resources, and hence is not included as part of this current process. The focus of the current work is on "inequalities in health status" and "inequalities in the determinants of health".

Subsequent to this workshop, the PHPEG commissioned a report from GPI Atlantic to provide analysis and suggestions for a common set of measurable health disparities indicators (headline indicators), and a feasible approach to their implementation in the Canadian context. This report, *Health Disparities Indicators: Background Report for Developing Health Disparities Indicators in Canada,* was received in July 2008 [18].

To further facilitate this work, in January 2009, a one-day workshop was held with experts from across Canada to engage in a discussion to form a short-list of 10-20 measurable indicators of inequalities in health status and of inequalities in the determinants of health [19]. The criteria applied by workshop participants required that the indicators:

- be important and actionable;
- capture the essence of the issue;
- have a clear and accepted normative interpretation;
- be valid and reliable; and
- use data that are available at national, provincial, territorial, and regional and sub-regional levels, or which are feasible to develop.

From this workshop, a draft short-list of indicators was further refined.

More work was then done to develop the indicators, which will be outlined in more detail below. Most recently, the PHPEG shared the draft short-list of indicators with participants at the CIHI and Statistics Canada 3rd National Consensus Conference on Population Health Indicators that took place March 26, 2009. The intent was to ensure the indicators for health inequalities process was taken into account at this important meeting, including in any work and decisions that will flow from it.

Based on this work to date, the Indicators Joint Working Group has developed a recommended top 10-20 list of indicators of inequalities in health status and of inequalities in the determinants of health and accompanying narrative report. This report, along with the top 10-20 indicators, will be submitted to the pan-Canadian Public Health Network Council for their review.

3. Short-List of Indicators of Health Inequalities

> ***"Statistics are human beings with the tears wiped off".***
> Paul Brodeu, *Outrageous Misconduct*

Organization of Indicators

As identified above, the 2008 final report *Closing the Gap* by the WHO Commission on the Social Determinants of Health (CSDH) [14] identified the need to "Ensure that routine monitoring systems for health equity and the social determinants of health are in place, locally, nationally, and internationally" (p. 179). Specifically, this included the recommendation that "National governments establish a national health equity surveillance system, with routine collection of data on social determinants of health and health inequity" (p. 180). The report outlined a suggested "comprehensive national health equity surveillance framework…for which indicators will need to be developed using a participatory process at the international and national level" (p. 181-182). This framework and corresponding categories are based on the available evidence on the importance of these indicators for health inequalities. (See Appendix A for relevant extracts and figures from this report.)

Thus, the suggested indicators outlined in the present report are grouped based on the categories outlined in the CSDH comprehensive national health equity surveillance framework. This includes health outcomes (mortality, early childhood development (ECD), mental health, morbidity and disability, self-assessed physical and mental health, and cause-specific outcomes) and determinants of health (health behaviours, physical and social environment, working conditions, health care, social protection, gender, social inequities, and socio-political context). Given the need for developing a comprehensive and yet parsimonious set of indicators, as a general rule indicators are not included in more than one category. For example, injuries are included under "mortality" and therefore not under either morbidity or cause-specific outcomes. In addition, it is important to note that while some of these indicators (e.g. mortality and morbidity) are collected by Ministries of Health in provinces and territories in Canada, others, such as early childhood development and water quality, are not.[2]

Suggested Short-List of Indicators

In addition to reflecting the work of the CSDH, the indicators are also intended to reflect the best available evidence, such as the known social gradient for many of the major chronic diseases in Canada [20], the cancers with the highest number of new cases and deaths in Canada [21], as well as areas where politicians have intense interest (e.g. lifestyle behaviours). While presented individually, the indicators are inter-related in many ways. For example, the indicator for being overweight/obese is related to the indicators for nutrition and physical activity, as well as the

[2] However, what is and is not included in the portfolios of Ministries of Health in various provinces and territories in Canada differs.

indicator on walking/biking to work. The indicator on dental insurance can be correlated with the indicators on ability to chew or pain/discomfort in teeth and gums. Indicators on mental illness are inter-related (e.g. suicides and perceived mental health), even though each is under a different category based on the CSDH framework. In fact, a number of indicators could fit under more than one category in the CSDH framework. Indicators on mammography and pap smears relate to the indicator on childhood immunization given their preventive focus. As well, certain indicators are proxy measures for larger issues. For example, use of a specialist and visits with a dental professional represent indicators of access to insured and uninsured health services respectively [22].

Following the process to develop a draft list of indicators identified above, indicators were further refined through discussions with various experts (such as the Institute for Work and Health for the workplace indicators). Based on a recommendation from the January 2009 workshop, the use of indices is recommended. Feedback from the Public Health Network Council from a meeting held at the end of March was also incorporated where possible. Further details on the indicators are outlined in the next section.

Table 1 lists the indicators that are being recommended, along with a definition and source. While some of the indicators are quite developed, with agreed upon definitions and available data sources, others will require future work to further refine. Typically, the indicators under the category "inequality in health status" are further developed and defined compared to those in the category "inequality in health determinants". It was suggested that this might be due to the fact that various jurisdictions in Canada have been collecting data on health status for a longer period of time than much of the data for indicators on health determinants.

The development of suggested indicators did not include the development of targets, which is outside the scope of this work. However, (and as recommended by the report of the Senate Subcommittee on Population Health [28])**,** it is expected that these indicators will be used to measure progress over time, whether by examining ranges, degrees of difference, or absolute difference, for example. In addressing inequalities, it is important to level the bar (decrease inequalities between groups) as well as raise the bar (increase everyone's overall health and well-being) [23].

Note that indicators using the Canadian Community Health Survey (CCHS) or other Statistics Canada surveys rely on self-reported data. In addition, indicators using data that are from core CCHS questions, that is, they are asked of everyone regardless of province/health region, are labeled "CORE". Those questions that are only asked on the CCHS during a particular themed survey are labeled "THEME". And those questions that are optional, that is regions or provinces can choose to ask these, are labeled "OPTIONAL".

Table 1: Proposed Indicators of Inequalities in Health Status and Inequalities in Determinants of Health

Proposed Indicator (Categories from WHO CSDH)	Indicator Definition and Source
INEQUALITIES IN HEALTH STATUS	
1. MORTALITY	
Life expectancy at birth at 65	Life expectancy is the number of years a person would be expected to live, starting from birth (for life expectancy at birth) or at age 65 (for life expectancy at age 65), on the basis of the mortality statistics for a given observation period. **Source:** Statistics Canada, Vital Statistics, Death Database
Infant mortality rate (IMR) presented as: - Crude IMR; and - IMR for live births ≥ 500 grams	Infants who die in the first year of life, expressed as a count and a rate per 1,000 live births. Indicator of infant mortality rate (IMR) ideally presented as: Crude IMR. **Source:** Statistics Canada, Vital Statistics, Birth and Death Databases; and IMR for live births greater than or equal to 500 grams. **Source:** Birth-death linked file, PHAC (Health Surveillance and Epidemiology Division)
Heart disease	Crude rate and age-standardized rate of death from diseases of the circulatory system per 100,000 population: for all diseases of the circulatory system (ICD–10 I00 to I99), ischaemic heart disease (ICD–10 I20 to I25), cerebrovascular diseases (ICD–10 I60 to I69) and all other circulatory diseases (ICD-10 I00 to I02, I05 to I09, I10 to I15, I26 to I28, I30 to I52, I70 to I79, I80 to I89, I95 to I99). **Source:** Statistics Canada, Vital Statistics, Death Database
Lung cancer	Crude rate and age-standardized rate of death from lung cancer per 100,000 population (ICD–10 C33 to C34). **Source:** Statistics Canada, Vital Statistics, Death Database
Unintentional injury	Crude rate and age-standardized rate of death from unintentional injuries per 100,000 population. Unintentional injuries includes injuries due to causes such as motor vehicle collisions, falls, drowning, burns, and poisoning, but not medical misadventures/complications (ICD–10 V01 to X59, Y85 to Y86). **Source:** Statistics Canada, Vital Statistics, Death Database
2. Early Childhood Development	
Early Development Instrument	Domains include: - Physical health and wellbeing (physical readiness for school day, physical independence, gross and fine motor skills) - Social competence (overall social competence, responsibility and respect, approaches to learning, and readiness to explore new things) - Emotional maturity (prosocial and helping behaviour, anxious and fearful behaviour, aggressive behaviour, and hyperactivity and inattention) - Language and cognitive development (basic literacy, interest in literacy/numeracy and memory, advanced literacy, and basic numeracy) - Communication skills and general knowledge "Children who fall in the lowest 10th percentile for a given domain are deemed 'vulnerable' in that area. Children who are vulnerable in more than one domain are categorized as 'vulnerable' in terms of their development upon entry into school" [24]. Conducted on all kindergarten school children (ages 5-6). Currently used only in BC, MB, and ON (and Montreal). Expectation that this will be expanded to other provinces/territories in future. **Source:** EDI (Early Development Instrument)
3. MENTAL ILLNESS	

Proposed Indicator (Categories from WHO CSDH)	Indicator Definition and Source
Suicides	Crude rate and age-standardized rate of suicide death (ICD–10 X60 to X84, Y87.0) per 100,000 population. **Source:** Statistics Canada, Vital Statistics, Death Database
Hospitalization composite indicator for mental health disorders	Age-standardized acute care hospitalizations for mental illness (includes sub-categories affective disorders, anxiety disorders and substance-related disorders) per 100,000; acute care admissions only – mental health cases in stand-alone psychiatric facilities not included. ICD-9/10 codes available from CIHI. **Source:** Discharge Abstract Database (CIHI), Ministère de la Santé et des Services Sociaux du Québec; Census 2001 and 2006 (Statistics Canada)
4. MORBIDITY AND DISABILITY	
Low birth weight presented as: - fetal growth restriction; and - pre-term birth	Live births less than 2,500 grams, expressed as a percentage of all live births with known birth weight. Fetal growth restriction is represented by **rate of small-for-gestational-age**: number of live births whose birth weight is below the standard 10th percentile of the sex-specific birth weight for gestational age, as a proportion of all live births in a given place and time; and, preterm birth is represented by **preterm birth rate**: number of live births with a gestational age at birth of less than 37 completed weeks, as a proportion of all live births in a given place and time. **Source**: Statistics Canada, Vital Statistics, Birth Database or PHAC
Disability rates - Proportion of population with limiting long-term illness	Population aged 12 and over who reported being limited in selected activities (home, school, work and other) because of a physical condition, mental condition, or health problem which has lasted or is expected to last six months or longer. **Source (s):** Statistics Canada, Canadian Community Health Survey (CORE)
Overweight and obesity, Body Mass Index (BMI) (HLS Target); Proportion of overweight adults in the population, aged 18 and over (BMI = 25-29.9); Proportion of obese adults (BMI≥30) in the population	Typically calculated from self-reported height and weight (except CCHS 2.2). Body Mass Index (BMI) is a method of classifying body weight according to health risk. It is calculated for the population aged 18 and over, excluding pregnant females and persons less than 3 feet (0.914 metres) tall or greater than 6 feet 11 inches (2.108 metres). BMI is calculated as follows: weight in kilograms divided by height in metres squared. The index is: under 18.5 (underweight); 18.5 to 24.9 (normal weight); 25.0 to 29.9 (overweight); 30.0 to 34.9 (obese-Class I); 35.0 to 39.9 (obese-Class II); 40 or greater (obese - Class III). **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
5. SELF-ASSESSED PHYSICAL AND MENTAL HEALTH	
Perceived health	Population aged 12 and over who reported perceiving their own health status as being either excellent, very good, good, fair or poor. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Perceived mental health	Population aged 12 and over who reported perceiving their own mental health status as being excellent, very good, good, fair or poor. Perceived mental health provides a general indication of the population suffering from some form of mental disorder, mental or emotional problems, or distress, not necessarily reflected in self-reported (physical) health. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
6. CAUSE-SPECIFIC OUTCOMES	
Chronic conditions o Cancer Total for all cancers Specific site codes: -colon/rectum (ICD–O–3 C18.0 to C18.9, C19.9, C20.9, C26.0)	**Cancer:** Age-standardized rate of new primary sites of cancer (malignant neoplasms) per 100,000 population. **Source:** Statistics Canada, Vital Statistics, Cancer Database, Canadian Cancer Registry

Proposed Indicator (Categories from WHO CSDH)	Indicator Definition and Source
-lung (ICD–O–3 C34.0 to C34.9) -female breast (ICD–O–3 C50.0 to C50.9) -prostate (ICD–O–3 C61.9).	
Chronic conditions o Diabetes o Asthma o Arthritis	**Diabetes**: Population aged 12 and over who reported that they have been diagnosed by a health professional as having diabetes. Notes: 1) CCHS does not differentiate between type 1 and type 2 diabetes; 2) Includes females aged 15 and over who reported that they have been diagnosed with gestational diabetes. CCHS has the capacity to exclude females with gestational diabetes from the prevalence estimate, if desired. **Source:** Statistics Canada, Canadian Community Health Survey (CORE) **Asthma**: Population aged 12 and over who reported that they have been diagnosed by a health professional as having asthma. **Source:** Statistics Canada, Canadian Community Health Survey (CORE) **Arthritis:** Population aged 12 and over who reported that they have been diagnosed by a health professional as having arthritis. Arthritis includes both rheumatoid arthritis and osteoarthritis, but excludes fibromyalgia. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Incidence of selected notifiable infectious diseases • Tuberculosis • Newly notified HIV infections • Clinically notified cases of Chlamydia	**Tuberculosis:** Number of new cases of tuberculosis reported in a given year. **Source:** PHAC **HIV:** Number of new positive HIV cases in a given year (excluding anonymous testing). Information is based on those who have been tested for HIV. **Source:** PHAC **Chlamydia:** Number of new cases of chlamydia reported in a given year. **Source:** PHAC
Child Immunization rates -DPT -MMR	Coverage estimates for diptheria, pertussis and tetanus (DPT) by 2nd birthday. Coverage estimates for a single dose of measles, mumps and rubella (MMR) vaccine by 2nd birthday. **Source:** PHACs National Immunization Coverage Survey
Oral health o Ability to chew o Pain/discomfort in teeth/gums (within past month)	Proportion of population aged 12 years of age and older who identify no limitation in chewing ability (derived). Proportion of population aged 12 years and older who reported that they have not experienced any oral or facial pain or discomfort in last month. **Source:** Statistics Canada, Canadian Community Health Survey (THEME)
INEQUALITIES IN HEALTH DETERMINANTS	
A: DAILY LIVING CONDITIONS	
Health behaviours	
Smoking status	Population aged 12 and over who reported being either a current smoker (daily or occasional) or a non–smoker (former or never smoked). Does not take into account the number of cigarettes smoked. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Dietary practices – consumption of fruit and vegetables (healthy food choices) – Healthy Living Strategy (HLS) Target is 5 or more servings/day)	Population aged 12 and over, by the average number of times per day that they reported consuming fruits and vegetables. Measure does not take into account the amount consumed. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)

Proposed Indicator (Categories from WHO CSDH)	Indicator Definition and Source
Leisure time physical activity (HLS target)	Population aged 12 and over who reported a level of physical activity, based on their responses to questions about the frequency, nature and duration of their participation in leisure time physical activity. Respondents are classified as active, moderately active or inactive based on an index of average daily physical activity over the past 3 months. For each leisure time physical activity engaged in by the respondent, an average daily energy expenditure is calculated by multiplying the number of times the activity was performed by the average duration of the activity by the energy cost (kilocalories per kilogram of body weight per hour) of the activity. The index is calculated as the sum of the average daily energy expenditures of all activities. Respondents are classified as follows: 3.0 kcal/kg/day or more = physically active; 1.5 to 2.9 kcal/kg/day = moderately active; less than 1.5 kcal per day = inactive. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Alcohol use (heavy drinking)	Population aged 12 and over who reported being current drinkers and who reported drinking 5 or more drinks on at least one occasion per month in the past 12 months."Heavy drinking" is defined as current drinkers who reported drinking 5 or more drinks on one occasion, 12 or more times a year. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Breastfeeding practices	Self-reported breastfeeding practices of women aged 15 to 55 who had a baby in the previous five years. Categories include 'did not breastfeed', 'initiated breastfeeding', 'breastfed for at least four months', 'breastfed for at least four months exclusively', 'breastfed for six months', and 'breastfed for at least six months exclusively'. These benchmarks are former (four months exclusive breastfeeding) and current (six months exclusive breastfeeding) Health Canada recommendations. 'Initiated breastfeeding' refers to women who breastfed or tried to breastfeed their last child even if only for a short time. 'Exclusive breastfeeding' refers to an infant receiving only breast milk, without any additional liquid (even water) or solid food. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Physical and social environment	
Core Housing Need	A household is said to be in core housing need if its housing falls below at least one of the adequacy, affordability and suitability standards and it would have to spend 30% or more of its total before-tax income to pay the median rent of alternative local housing that is acceptable. (Adequacy – does not require any major repairs; affordability – costs less than 30% of before-tax household income; suitability – enough bedrooms for the size and make-up of resident household). Excludes non-family households led by maintainers aged 15-29 years of age attending school full-time. **Source:** Candian Mortgage and Housing Corporation (CMHC) based on Census and Survey of Labour and Income Dynamics (SLID) (Statistics Canada)
Water quality: Number of boil water advisory days	Number of boil water advisory days amongst municipalities that answered that they had problems with water supply quality at any time since (last survey year). **Source:** Municipal Water and Wastewater Survey (conducted every 2-3 years); Environment Canada
Walk/bike to work	People whose principal mode of transportation used to travel between a person's place of residence and workplace is either walking or riding a bicycle (self-report). **Source:** Statistics Canada, Census
Exposure to second-hand smoke at home	**Exposure to second-hand smoke at home:** Non-smoking population aged 12 and over who reported that at least one person smoked inside

Proposed Indicator (Categories from WHO CSDH)	Indicator Definition and Source
Exposure to second-hand smoke in vehicles and public places	their home every day or almost every day. **Exposure to second-hand smoke in vehicles and public places**: Non-smoking population aged 12 and over who reported being exposed to second-hand smoke in private vehicles and/or public places everyday or almost every day during the past month. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Sense of community belonging	Population aged 12 and over who reported a sense of belonging to their local community as being very strong, somewhat strong, somewhat weak or very weak. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Working conditions	
Workplace stress	Aged 16-74 who have worked at a job or business at any time in the past 12 months; in terms of their main job or business in the past 12 months if they reported that most days at work were: not at all stressful or not very stressful OR quite a bit stressful or extremely stressful. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Job strain	This variable indicates whether the respondent reports experiencing job strain. Job strain is measured as a ratio of psychological demands and decision latitude, which includes skill discretion and decision authority. Based on WSTT401-406 and 409. Respondents less than 15 years old or more than 75 years old and respondents who have not worked at a job or business at any time in the past 12 months were excluded from the population. **Source:** Derived variable from Canadian Community Health Survey, Statistics Canada (OPTIONAL)
Health care	
Use of specialists (indicator of use/access for insured services)	Population aged 12 and over who reported having seen or talked to any other medical doctor or specialist, such as a surgeon, allergist, orthopaedist, gynaecologist/urologist, or psychiatrist (about their physical, emotional or mental health) in past 12 months. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Visits with a dental professional last 12 months (indicator of use/access for uninsured services)	Population aged 12 and over who reported that in the past 12 months they have seen, or talked to, a dentist, dental hygienist or orthodontist. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Presence of dental insurance (indicator of use/access for uninsured services)	Population aged 12 and over who reported that they have insurance that covers all or part of their dental expenses. **Source:** Statistics Canada, Canadian Community Health Survey (OPTIONAL)
Preventive health services (indicator of access to preventive services): • Mammography screening (50-69) • Pap screening (18-69)	**Mammography:** Women aged 50 to 69 who reported when they had their last mammogram for routine screening or other reasons. **Pap smear:** women aged 18-69 who reported when they had their last Pap smear test. **Source:** Statistics Canada, Canadian Community Health Survey (THEME)
Social protection	
Eligibility for EI	Calculation of beneficiaries-to-unemployed (B/U) ratio. (Beneficiaries is defined as total regular beneficiaries in reference week (unemployed, not in labour force or employed). Unemployed is all unemployed. **Source:** Statistics Canada, EI Coverage Survey (a sub-sample of the Labour Force

Proposed Indicator (Categories from WHO CSDH)	Indicator Definition and Source
	Survey); also reported by Human Resources and Skills Development Canada (HRSDC)
Access to subsidized child spaces per child under age 6	Centre-based full- and part-time day child care for aged 0-5 and % of children aged 0-5 for whom there is a regulated child care space. Number of children receiving subsidies. **Source:** Early Childhood Education and Care in Canada by Martha Friendly et. al. at the Childcare Resource and Research Unit (using questionnaire/telephone interviews with P/T)
B: STRUCTURAL DRIVERS	
Gender Equality Index (Sweden)	Sweden's gender equality index includes people with post-secondary education (%, difference between men and women), people in gainful employment (%, difference), job seekers (%, difference), average income from gainful employment (dollars per inhabitant, difference), people with low income (% below 50% of median income), unequal sex distribution by industry (%, difference), and days of parental leave benefit (%, difference). **Potential Source:** Statistics Canada, Census
Social inequities	
Children in low income families	Population of children aged 17 and under living in economic families with incomes below Statistics Canada's low-income cut-offs (LICO). The cut–offs represent levels of income where people spend disproportionate amounts of money for food, shelter, and clothing. LICOs are based on family and community size; cut-offs are updated to account for changes in the consumer price index. **Source:** Statistics Canada, Census
Deprivation Index	Index contains two elements: material deprivation and social deprivation. Material deprivation examines deprivation of modern day goods and conveniences, and is measured by proportion of persons with no high school diploma, employment to population ratio, and average income of persons aged 15+. Social deprivation measures the fragility of the social network, and includes the proportion of persons 15+ who are separated, widowed, or divorced; living alone; and in single-parent families. **Source:** Census (Statistics Canada); index developed by Institut national de santé publique du Québec (INSPQ)
Homelessness rate	Definition needs to be developed. Currently only collected by certain municipalities with inconsistent methodologies/definition. Only Vancouver, Toronto, Edmonton, Calgary, Saskatoon and Hamilton collect socio-demographic characteristics. **Source:** Various municipalities
Working poor	Proportion of full-time employees aged 18 to 64 years of age who reported earning at or below minimum wage. Excludes self-employed and full-time students. **Source:** Labour Force Survey, Statistics Canada
Food security	Proportion of the population who reported experiencing multiple food deprivation issues, such as use of food banks, going without fresh fruit and vegetables, and buying cheap food to make ends meet. Food security – new module in 2005 **Source:** Statistics Canada, Canadian Community Health Survey (THEME)
Socio-political context *(civil rights, employment conditions, governance and public spending priorities, macro-economic conditions)*	
At this point, there are no indicators for inclusion here. Indicators related to Aboriginal Peoples may be considered here in the future. Much the same considerations may need to be applied for indicators for ethno-racial and	

Proposed Indicator (Categories from WHO CSDH)	Indicator Definition and Source
immigrant status.	

The overall appropriateness of this short-list of indicators was affirmed at the Statistics Canada/CIHI 3rd National Consensus Conference on Health Indicators held in March 2009, where participants identified the top priority areas for indicators as: Aboriginal Health, mental health, social determinants of health/socioeconomic deprivation, built environment/environmental factors, children's health/childhood development, and health system outcomes.

Disaggregation of Indicators

"Socio-economic status (SES), Aboriginal identity, gender and geographic location are the most important factors associated with health disparities in Canada. The consequences of health disparities are most pronounced in the lowest 20% of the SES scale and for Aboriginal peoples. Because they are more often and more severely sick or injured, people in the lowest quintile of income groups use approximately twice as much in the way of health care services as those in the highest quintile. On the basis of an estimation of health care resources used by Canadian households, approximately 20% of total health care spending may be attributable to income disparities. Despite this higher overall use of health services, health disparities persist among lower SES groups". [1].

The CSDH [14] suggests that indicators be stratified based on different groups, including by: sex; education, income, occupation, and/or ethnicity; region; and Aboriginal status (p. 181). Hence, for the present report, where possible, we have sought indicators that may be disaggregated by factors such as sex, age, income, education, employment/occupation, immigrant status, Aboriginal status, ethnicity, by various geographies (including as local a geography as possible), and by other factors (e.g. disability and/or sexual orientation). Based on this, please see Appendix B for the *Matrix of Indicators of Health Inequalities by Areas of Disaggregation.*

Appendix B shows the indicator list in more detail, including identifying:

- Whether the data are currently collected in Canada and/or the indicator is developed and currently reported on.
- Where there is consistency with:
    - the Statistics Canada (STC) and Canadian Institute for Health Information (CIHI) Population Health Indicator Framework. STC/CIHI have a Population Health Indicator Framework that includes many similar indicators to those proposed in this report. Hence, overlap has been identified in Appendix B as applicable. Currently, STC/CIHI disaggregate and report these indicators by age, sex, and health region.
    - the comparable indicator project (also previously known as PIRC/PRTWG). The mandate to develop comparable indicators on health status, health outcomes, and quality of service were first agreed to by First Ministers in 2000, with further development work started in 2003. The most recent edition (2008) includes data from jurisdictions that chose to participate [25].

    - the framework recommended by the WHO Commission on Social Determinants of Health entitled *Towards a Comprehensive National Health Equity Surveillance Framework* [14];
- whether data can be disaggregated according to age, income, education level, employment/occupation, sex, Aboriginal status,[3] ethno-racial status, urban/rural, province/territory, health authority level, small area geography,[4] and other significant stratifications (e.g. disability, sexual orientation). In developing these indicators, Statistics Canada was consulted at length a number of times to ascertain availability of data and feasibility of the disaggregation of these indicators. However, robust indicators were not excluded if data were not available.

There are a number of realities with the data that have to be taken into account. For example:

- **Individual-level versus neighbourhood level characteristics:** For some indicators, individual level characteristics (e.g. self-reported income, education levels) are available. In other cases, neighbourhood level characteristics will need to be used. This is also the case for indicators of inequalities in other countries [15].
- **Definition Issues:** Clarifications of definitions for disaggregation will need to be made; for example, Statistics Canada suggests that the census metropolitan area and census agglomeration **i**nfluenced **z**one (MIZ) classification be used for the urban/rural disaggregation.

Additional gaps and challenges are identified in the next sections.

Status of Indicators

As described above, Appendix B outlines the various indicators and the ability to disaggregate these by various categories of inequalities. Appendix C summarizes the status of the proposed indicators, outlining:

- whether the data are currently collected across Canada,
- if the data are currently collected, if it is routinely collected,
- if the data are currently collected, who holds the data,
- if the data are not available, who might collect any new data, and
- if the data are not available, what additional work is required to develop the indicator (e.g., definition development, data source development)

For most of the indicators identified, data are currently available (even if not for all categories of disaggregation, as detailed in Appendix B). For data that are currently available, data are housed mostly at Statistics Canada (using the Census, CCHS, and Vital Statistics). However, even if data are available, time and resources will be needed to analyze the data for each indicator, particularly given the various categories of disaggregation.

In addition to the gaps identified in Appendix B and C, there are a number of other gaps and challenges outlined in the next section.

[3] Where possible, disaggregation by First Nation, Inuit, and Métis is sought.
[4] This has been left generic, as some data are available only at the CMA level, while others may be available at neighbourhood levels depending on N.

Gaps and Challenges

There are a number of gaps in the existing data, and addressing these gaps will be important to ensure relevant indicators for health inequalities.

In general, developing indicators is complicated and complex, and takes time and resources. This is augmented when developing indicators of health inequalities. In some cases, we are constrained by what data are available. However, this does not mean that we should be complacent. In many cases, priority should be given to further refining indicators and developing data sources as required.

A major issue when looking at indicators of inequalities is the limitations with data sources that directly relate to inequalities. For example, most of the indicators identified use the Canadian Community Health Survey (CCHS) as the source. However, the CCHS excludes First Nations on reserve, people living in the Territories, and homeless people - some of the very populations that are facing health inequalities. Generally, population surveys also do a poor job of reaching new immigrants and the very poor.

Indicators for Aboriginal Peoples

In particular, one major issue remaining with the work outlined in this report is with regards to indicators for Aboriginal Peoples. While disaggregation by Aboriginal status may be done on the above indicators where data are available (and further disaggregation by the more meaningful groupings of First Nations, Métis, and Inuit where possible), work done by the Aboriginal Health Data and Indicators Federal/Provincial/Territorial (F/P/T) Task Group found that there is a lack of common data across provinces/territories for Aboriginal People's health. Data sources that can be further explored include Basic Departmental Data from Indian and Northern Affairs Canada (INAC), First Nations and Inuit Health Branch (FNIHB) in-house statistics, and survey data from the First Nations Regional Health Survey, the Aboriginal Peoples' Survey and the Aboriginal Children's Survey.

In addition, Aboriginal Peoples face separate issues that require indicators to accurately measure inequalities, such as their experience with residential schools, effects of colonialization, self-determination, and cultural continuity. Some of these indicators may fit best under the category of "socio-political context". To develop these indicators, Aboriginal Peoples will need to be engaged, including forming partnerships with Aboriginal groups and working closely and linking with the work of the Aboriginal Health Data and Indicators F/P/T Task Group. This same work would need to be undertaken with groups focused on ethno-racial and immigrant status.

Work has been done by FNIHB to explore the overlap between the WHO's CSDH national health equity surveillance framework and First Nations' frameworks on wellness. More information on this work can be found in Appendix D.

Other Data Issues

As with any indicator project, there are many other data issues that will need to be taken into account. For example:

- The data are limited in terms of **how much disaggregation** can be done. Cross-tabulations will have to be limited to one or two variables in most cases. For example, data may be

"disaggregatable" to a health region level by sex, but not by sex and income. This is limited by the N (N=number). Similarly, level of geography is also limited by N, and in some cases, the lowest level of geography cannot be ascertained until more detailed work is completed. In many cases, multiple years of data will be required to get a large enough N. While possible, this takes more time and resources.

- **Other gaps in terms of disaggregation** also need to be addressed. Out of the approximately 50 indicators, more than 80%[5] of the indicators can be disaggregated by sex, age, income, and education. However, this is much lower (about 60%) for disaggregation by Aboriginal status, ethno-racial status, immigrant status, and employment/occupation.[6] Based on this, more work needs to be done to ensure data are available for disaggregation by all of these important categories.
- Data using the CCHS is **self-reported.**
- Work needs to continue on ensuring **pan-Canadian collection of data** in areas where there is limited data. A particular gap is the fact that the major data source for these indicators, the CCHS, excludes on-reserve, people living in the Territories[7], the homeless, and may exclude some new immigrants and people with low incomes.
- In addition, some data are **not routinely collected** (e.g. themes in CCHS) or is only collected by provinces or regions that opt in to collect this data (e.g. optional modules in CCHS). While the idea of combining multiple years of data to increase the likelihood of disaggregation was identified above, combining multiple years is very difficult with theme surveys, and impossible with optional modules. There is often a tradeoff required between getting the data as often as we would like (frequency of reporting) and how detailed the reporting is (e.g., to what geography, and by what groups, and can it be disaggregated) [26].
- There is a high **non-response rate** for the income question on the CCHS, which is used for many of the indicators. Statistics Canada has done work to illustrate that those who do not respond to the income questions do differ from those who do respond with regards to some of the key indicators under discussion.
- For many indicators, as outlined in Appendix B and C, data are available (e.g. via Census) but **custom-tabulations** will have to be ordered. This takes time and resources.
- When using **income quintiles**, these are place-specific income quintiles, not pan-Canadian quintiles, and therefore they will not be comparable (e.g. across regions).
- **Ongoing review and revision of the indicators**, ensuring that the indicators produced are high quality, and evaluating their usefulness, will also be required.

As mentioned above, while some of the indicators are quite defined, others require more development in future work that the Population Health Promotion Expert Group /Public Health Network may wish to undertake. The Pan-Canadian Public Health Network may decide to start work using the indicators that are fully developed and have available data, while continuing to

[5] These are crude numbers/approximations. They include indicators that cannot be disaggregated by these factors such as disaggregation of mammography/pap smears by sex.

[6] For indicators from CCHS, disaggregation by employment could include whether respondent has a job or not, and/or the kind of work they do. However, standard classifications are not used in CCHS. Hence, this is a further limitation.

[7] The territories are included in the CCHS cycles with core and optional items but are excluded from the themed surveys conducted on alternate years.

work on addressing these critical gaps. This will be further addressed in the recommendations section.

> ***"Everything that can be counted does not necessarily count; everything that counts cannot necessarily be counted".***
> Albert Einstein

Other Indicator Work Currently Underway

There are many opportunities for the Pan-Canadian Public Health Network to work with others on these indicators. Throughout this report, work by Statistics Canada/CIHI on the Population Health Indicator Framework has been identified. In preparation for the Statistics Canada/CIHI 3rd National Consensus Conference on Health Indicators held in March 2009, survey participants identified the following as the "most important" for future equity lens indicator stratification: income, rural/urban, education, Aboriginal populations, and census metropolitan area (CMA). (Age, gender and health regions are already included in STC/CIHI work) [27]. Hence, equity is a focus for Statistics Canada and CIHI going forward. For example, Statistics Canada is releasing life expectancy, low birth weight, and all-cause mortality by income in fall 2009. Another priority for Statistics Canada is stratifying CCHS data by an equity lens. Hence, to maximize resources, it will be critical to connect with Statistics Canada and CIHI's work.

In addition, in developing this report, a number of other groups working on related indicator projects were identified including:

- The Surveillance and Information Expert Group, given their work in surveillance, was mentioned as a potential collaborator.
- The Aboriginal Health Data and Indicators Federal/Provincial/Territorial (F/P/T) Task Group recently released a report examining the availability of data for indicators on Aboriginal health. Issues of lack of common data across provinces/territories were raised. Linkages with this task group will be critical for additional work on indicators related to Aboriginal People's health.
- The Federation of Canadian Municipalities (FCM) annual reports on indicators on quality of life, including indicators on housing, homelessness, income and water quality at the CMA level. (See www.fcm.ca/english/qol/indicators.html);
- Human Resources and Social Development Canada (HRSDC) indicators for well-being, (including indicators on health, housing, leisure, and environment). See http://www4.hrsdc.gc.ca/home.jsp?lang=en. These indicators are at a national level, with some provincial reporting. In the future, HRSDC would like to drill down to municipal level data (CMA) on some of their 72 indicators, perhaps working with FCM;
- The Canadian Index on Well-Being, housed at the Atkinson Charitable Foundation, recently released a national indicator system that measures "progress" in a non-economic way. See www.atkinsonfoundation.ca/ciw for more information.
- The Canadian Council on Social Development's (CCSD) Canadian Social Data Strategy (CSDS). See http://www.ccsd.ca/subsites/socialdata/home.html. This project is part of the "data liberation movement" to get local information (e.g. on socio-economic status) for people to use at low or no cost. This is consistent with the Community Accounts recommendation by the Senate Subcommittee on Population Health ("That the Government of Canada support the development and implementation of Community Accounts, modelled

on the Newfoundland and Labrador CA, in all provinces and territories" [28, p. iii]).

Partnering with groups who are working on similar indicator projects may prove beneficial, reducing duplication, maximizing resources, and removing silos between health and other ministries. These partnerships will be critical to moving the work forward.

Recent Developments

The work outlined in this report, and recommendations outlined in the next section, address the recommendation from the recently released Senate Subcommittee on Population Health report: "That the Population Health Promotion Expert Group accelerate its work to complete within the next 12 months the development of a national set of indicators of health disparities" [28, p. iii].

4. Recommendations for the Pan-Canadian Public Health Network

The Population Health Promotion Expert Group (PHPEG) endorses the work of the Indicators Joint Working Group and recommends that the Public Health Network Council:

1) Adopt the indicators proposed in this report as the foundation of a national set of indicators of inequalities in health status and inequalities in determinants of health.
2) Invite the appropriate organizations and jurisdictions to consider the following implementation activities:
   - Statistics Canada and the Canadian Institute for Health Information (CIHI) move forward on refining and finalizing indicators that require additional work, as identified in the report.
   - Statistics Canada convert several theme or optional Canadian Community Health Survey (CCHS) questions to core questions, namely those needed to produce the set of indicators outlined in this report (oral health, job strain, dental insurance, mammography and Pap screening, and food security).
   - Statistics Canada and CIHI work closely with Aboriginal partners, including the Aboriginal Health Data and Indicators F/P/T Task Group, to develop further indicators to adequately capture inequalities for Aboriginal populations.
   - Statistics Canada and CIHI work closely with partners working on ethno-racial and immigrant issues to develop further indicators to adequately capture inequalities for these populations.
   - Statistics Canada, CIHI, and PHAC work together to produce the first pan-Canadian report on indicators of inequality in health in a timely manner (ideally within one year), reporting on indicators of inequality that are already developed and have a clear data source.
3) Considers whether to undertake the development of the third category of indicators of inequalities, that of "the impact of health inequalities on the economy, communities, individuals and the health care system" (also referred to as "inequalities in consequences of ill health") by the PHN or another appropriate group/institution, as this, in the opinion of the PHPEG, will require substantial time and resources.

5. Conclusions

This report outlines the suggested short-list of indicators of inequalities in health status and inequalities in determinants of health for review by the Pan-Canadian Public Health Network.

As identified above, there are a number of challenges to overcome in the development of this work. In addition, decisions need to be made on the frequency of reporting, as well as who would be responsible for the development and funding of the indicators as outlined in the recommendations.

This work is a step in the right direction to address the recommendations of both the WHO Commission on the Social Determinants of Health and the Health Disparities Task Group reports.

Appendix A: Excerpts on the Recommendation for a National Health Equity Surveillance System (Final Report from the WHO Commission on the Social Determinants of Health)

Excerpt from WHO CSDH Report [14, pp. 179-180]

The Commission recommends that:

16.2 National governments establish a national health equity surveillance system, with routine collection of data on social determinants of health and health inequity (see Rec 10.3).

A health equity surveillance system routinely collects, collates, and disseminates information on health, health inequities, and health determinants in a coherent fashion. Many countries and international organizations already collect data on the social determinants of health in one form or another. National and global health equity surveillance systems can build on these existing efforts, and would add two important things.

First, while most existing data systems only present country averages, a health equity surveillance system would present data stratified by social groups within countries, and would include measures of inequity in health and determinants between these groups. Second, while data on different social determinants of health are currently dispersed across a multitude of information systems, a health equity surveillance system would bring together in one place data on a broad range of social determinants of health.

Building a minimum health equity surveillance system

It is recommended that all national governments build towards a comprehensive health equity surveillance system (see Box 16.3), where necessary with technical assistance from WHO.

Such a surveillance system can be built progressively, depending on a country's stage of development and existing health information system. The first requirement is that governments ensure the availability of basic mortality and morbidity data, stratified by socioeconomic group and by regions within countries. Experience from work for the EU shows consistently that countries without basic data on mortality and morbidity by socioeconomic indicators are incapable of moving forward on the health equity agenda (Mackenbach & Bakker, 2003); the same is arguably true for countries outside the EU. A framework for a minimum health equity surveillance system is presented in Box 16.2.

In order to build a minimum health equity surveillance system, all countries need to:

- immediately build routine health statistics where they do not exist; even in areas of conflict/emergency, cluster sample health and living conditions surveys can be feasible (Burnham, 2006; UNDP & Ministry of Planning and Development Corporation, 2005), albeit difficult;
- improve routine health statistics in such a way that it will be possible to follow health and mortality trends separately for men and women and for different social strata, using nationally representative data;

- where reliant on surveys, improve:
    - representativeness – nationally representative while also addressing the problem of missing data for vulnerable groups such as the homeless, mobile groups, Indigenous Peoples;
    - statistical power – sufficient to disaggregate the majority of health outcomes and determinants for relevant social strata, and to monitor time-trends in health inequity;
    - data quality and methods – reliability, validity, sample and estimation methods, statistical techniques;
    - consistency/comparability of data collection – to allow for comparisons over time and across countries;
    - geo-referencing – to facilitate data linking;
    - frequency with which surveys are conducted - ideally at least every five years;
- improve knowledge about health and mortality across all ages and social strata in poor countries.

Survey data, in particular the DHS, have been invaluable for the description of inequities in childhood mortality and its determinants in low- and middle-income countries. Their widespread use shows that such surveys are feasible in these countries. It is important to set up systems that will provide information on adult health as well, for example by extended DHS.

The health equity surveillance system should be coordinated nationally so that it can be useful for national and local health policy-makers. Governments, where necessary with help from donors, should provide sufficient long-term core funding to a central agency that coordinates national health equity.

BOX 16.2: A MINIMUM HEALTH EQUITY SURVEILLANCE SYSTEM

A minimum health equity surveillance system provides basic data on mortality and morbidity by socioeconomic and regional groups within countries. All countries should, as a minimum, have basic health equity data available that are nationally representative and comparable over time. Ideally, mortality is estimated on the basis of complete, good-quality registries of vital events, while morbidity data could be collected using health interview surveys (Kunst & Mackenbach, 1994). In many low- and middle-income countries, health surveys will remain an important source of information on mortality in the near future.

Health outcomes:

mortality: infant mortality and/or under-5 mortality, maternal mortality, adult mortality, and LEB;

morbidity: at least three nationally relevant morbidity indicators, which will vary between country contexts and might include prevalence of obesity, diabetes, undernutrition, and HIV;

self-rated mental and physical health.

Measures of inequity:

In addition to population averages, data on health outcomes should be provided in a stratified manner including stratification by:

sex;

at least two social markers (e.g. education, income/wealth, occupational class, ethnicity/race);

at least one regional marker (e.g. rural/urban, province);

Include at least one summary measure of absolute health inequities between social groups, and one summary measure of relative health inequities between social groups (see Box 16.3).

Good-quality data on the health of Indigenous Peoples should be available, where applicable.

(WHO Commission on Social Determinants of Health, 2008, pp. 181)

BOX 16.3: TOWARDS A COMPREHENSIVE NATIONAL HEALTH EQUITY SURVEILLANCE FRAMEWORK

HEALTH INEQUITIES

Include information on:

health outcomes stratified by:

- sex
- at least two socioeconomic stratifiers (education, income/wealth, occupational class);
- ethnic group/race/indigeneity;
- other contextually relevant social stratifiers;
- place of residence (rural/urban and province or other relevant geographical unit);

the distribution of the population across the sub-groups;

a summary measure of relative health inequity: measures include the rate ratio, the relative index of inequality, the relative version of the population attributable risk, and the concentration index;

a summary measure of absolute health inequity: measures include the rate difference, the slope index of inequality, and the population attributable risk.

HEALTH OUTCOMES

mortality (all cause, cause specific, age specific);

ECD;

mental health;

morbidity and disability;

self-assessed physical and mental health;

cause-specific outcomes.

DETERMINANTS, WHERE APPLICABLE INCLUDING STRATIFIED DATA

Daily living conditions

health behaviours:

- smoking;
- alcohol;
- physical activity;
- diet and nutrition;

physical and social environment:

- water and sanitation;
- housing conditions;
- infrastructure, transport, and urban design;
- air quality;
- social capital;

working conditions:

- material working hazards;
- stress;

health care:

- coverage;
- health-care system infrastructure;

social protection:

- coverage;
- generosity.

Structural drivers of health inequity:

gender:

- norms and values;
- economic participation;
- sexual and reproductive health;

social inequities:

- social exclusion;
- income and wealth distribution;
- education;

sociopolitical context:

- civil rights;
- employment conditions;
- governance and public spending priorities;
- macroeconomic conditions.

CONSEQUENCES OF ILL-HEALTH

economic consequences;

social consequences.

(WHO Commission on Social Determinants of Health, 2008, pp. 182)

Appendix B: Matrix of Indicators of Health Inequalities by Areas of Disaggregation

General notes: * Multiple years (administrative data)/multiple cycles (survey data) required to produce reliable indicators at this level of detail. This may be the case for others in this chart also not identified – this can be confirmed once data are examined in greater detail
✓ feasible to produce, although will take resources to do so including combining multiple years (although multiple years is not possible with "theme" or "optional" CCHS data); also because of N, cross tabulations will have to be limited to one or two variables in most cases–depends on limits of data source
✓✓ data are available at this level
✖ not available
n/a not applicable
? unknown – more work would need to be done including accessing the data and doing some analysis
^ Overlaps/similar to indicator in PRTWG/PIRC Comparable Indicator work. These are reported at P/T level only

Can be collected by

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
INEQUALITY IN HEALTH STATUS																	
1. MORTALITY (ALL CAUSE, CAUSE SPECIFIC) *(**Note:-administrative databases, such as vital statistics, do not record income, education, Aboriginal status, etc. of events. Aggregations by socio-economic status are therefore created using postal codes representing place of residence that are associated with census data (income/education/etc.) at the dissemination area level… referred to as the ecological method to assign SES. (Employment/occupation and immigrant status are not calculated given this ecological method). These breakdowns for mortality have also been achieved (Russell Wilkins) using the Canadian Mortality Study which is based on ten years of deaths (1991 to 2001) linked to 1996 Census, however, this database only covers non-institutionalized persons aged 25 and over, and more importantly, not necessarily maintained for ongoing indicator production.*																	
Life expectancy at birth at 65	**yes**	**yes^**	**yes**	**n/a**	✓	✓	✖	✓✓	✖[12]	✖	✖	✓	✓✓	✓✓*	✓*	✖	Life expectancy is the number of years a person would be expected to live, starting from birth (for life expectancy at birth) or at age 65 (for life expectancy at age 65), on the basis of the

[8] In many cases, if Aboriginal status is available, this may be further broken down by First Nations, Inuit and Métis, although there are limits based on N. For CCHS data, Aboriginal status is for off-reserve only.
[9] Urban/rural may be defined different ways – e.g., CCHS have various geo-identifiers and CMA/MIZ may be more meaningful than a simple urban/rural split.
[10] "Small area" has not been defined, as the smallest geography possible is the aim. Disaggregation to small populations may be limited by sample size depending on prevalence/response to various categories in the survey data. The information provided here is the best estimate at this time.
[11] Note that indicators using the CCHS and other Statistics Canada surveys are self-reported. In addition, indicators using data that are from core CCHS questions, that is, they are asked of everyone regardless of province/health region, are labeled "CORE". Those questions that are only asked on the CCHS during a particular themed survey are labeled "THEME". And those questions that are optional, that is regions or provinces can choose to ask these, are labeled "OPTIONAL".

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
																	mortality statistics for a given observation period. **Source:** Statistics Canada, Vital Statistics, Death Database
Infant mortality rate (IMR) presented as: - Crude IMR; and - IMR for live births ≥ 500 grams[13]	**yes**	**yes^**	**yes**	✓✓	✓	✓	✖	✓✓	✖	✖	✖	✓	✓✓	✓✓*	✓*	✖	Infants who die in the first year of life, expressed as a count and a rate per 1,000 live births. Indicator of infant mortality rate (IMR) ideally presented as: Crude IMR. **Source:** Statistics Canada, Vital Statistics, Birth and Death Databases; and IMR for live births greater than or equal to 500 grams. **Source:** Birth-death linked file, PHAC (Health Surveillance and Epidemiology Division)
Heart disease	**yes**	**yes^**	**yes**	✓	✓	✓	✖	✓✓	✖	✖	✖	✓	✓✓	✓✓*	✓*	✖	Crude rate and age-standardized rate of death from diseases of the circulatory system per 100,000 population: for all diseases of the circulatory system (ICD–10 I00 to I99), ischaemic heart disease (ICD–10 I20 to I25), cerebrovascular diseases (ICD–10 I60 to I69) and all other circulatory diseases (ICD-10 I00 to I02, I05 to I09, I10 to I15, I26 to I28, I30 to I52, I70 to I79, I80 to I89, I95 to I99). **Source:** Statistics Canada, Vital Statistics, Death Database

[12] Statistics Canada, under contract with Health Canada, is currently working on vital stats indicators (life expectancy, total mortality, and by selected causes, infant mortality, and low birth weight births) for Inuit lands. These data are feasible because the Inuit regions can be defined geographically. However, they are not available for Métis or First Nations.

[13] ON data for this indicator not comparable due to data quality issues

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
Lung cancer	**yes**	**yes^**	**yes**	✓	✓	✓	✖	✓✓	✖	✖	✖	✓	✓✓	✓✓*	✓*	✖	Crude rate and age-standardized rate of death from lung cancer per 100,000 population (ICD–10 C33 to C34). **Source:** Statistics Canada, Vital Statistics, Death Database
Unintentional injury	**yes**	**yes**	**yes**	✓	✓	✓	✖	✓✓	✖	✖	✖	✓	✓✓	✓✓	✓*	✖	Crude rate and age-standardized rate of death from unintentional injuries per 100,000 population. Unintentional injuries include injuries due to causes such as motor vehicle collisions, falls, drowning, burns, and poisoning, but not medical misadventures/complications (ICD–10 V01 to X59, Y85 to Y86). **Source:** Statistics Canada, Vital Statistics, Death Database
2. Early Childhood Development																	
Early Development Instrument - Physical health and wellbeing (physical readiness for school day, physical independence, gross and fine motor skills) - Social competence (overall social competence, responsibility and	**yes in some areas**	**no**	**yes**	**n/a**	✓	✓[14]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✖	"Children who fall in lowest 10th percentile for a given domain are deemed 'vulnerable' in that area. Children who are vulnerable in more than one domain are categorized as 'vulnerable' in terms of their development upon entry into school" (Hertzman and Williams, CMAJ, 2008). Conducted on all kindergarten school children (ages 5-6). Currently used only in BC, MB, and ON (and Montreal). Expectation that this will be

[14] Neighbourhood income, education, employment etc. could be calculated.

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
respect, approaches to learning, and readiness to explore new things) - Emotional maturity (prosocial and helping behaviour, anxious and fearful behaviour, aggressive behaviour, and hyperactivity and inattention) - Language and cognitive development (basic literacy, interest in literacy/numeracy and memory, advanced literacy, and basic numeracy) - Communication skills and general knowledge																	expanded to other provinces/territories in future. **Source:** EDI (Early Development Instrument)
3. MENTAL ILLNESS																	
Suicides	**yes**	**yes**	**yes**	✓	✓	✓	✖	✓✓	✖	✖	✖	✓	✓✓	✓✓*	✓*	✖	Crude rate and age-standardized rate of suicide death (ICD–10 X60 to X84, Y87.0) per 100,000 population. **Source:** Statistics Canada, Vital Statistics, Death Database

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
Hospitalization composite indicator for mental health disorders	**yes**	**no**	**yes**	✓	✓	✖	✖	✓	✖	✖	✖	✓	✓	✓[15]	✓* **UPHN**	✖	Age-standardized acute care hospitalizations for mental illness (includes sub-categories affective disorders, anxiety disorders and substance-related disorders) per 100,000; acute care admissions only – mental health cases in stand-alone psychiatric facilities not included. ICD-9/10 codes available from CIHI. **Source:** Discharge Abstract Database (CIHI), Ministère de la Santé et des Services Sociaux du Québec; Census 2001 and 2006 (Statistics Canada)
4. MORBIDITY AND DISABILITY																	
Low birth weight[16] presented as: - fetal growth restriction; and - pre-term birth	**yes**	**yes^**	**yes**	✓✓	✓ *	✓	✖	✓✓	✖	✖	✖	✓	✓✓	✓✓*	✓*	✖	Live births less than 2,500 grams, expressed as a percentage of all live births with known birth weight. Fetal growth restriction is represented by **rate of small-for-gestational-age**: number of live births whose birth weight is below the standard 10th percentile of the sex-specific birth weight for gestational age, as a proportion of all live births in a given place and time; and, preterm birth is represented by **preterm birth rate**: number of live births with a

[15] May have issues with N for smaller regions. Could pool years.
[16] ON data not comparable due to data quality issues.

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
																	gestational age at birth of less than 37 completed weeks, as a proportion of all live births in a given place and time. **Source**: Statistics Canada, Vital Statistics, Birth Database or PHAC
Disability rates - Proportion of population with limiting long-term illness	**yes**	**yes**	**yes**	✓✓	✓	✓	✓[17]	✓✓	✓	✓	✓	✓✓	✓✓	✓✓	✓* **UPHN**	✓[18]	Population aged 12 and over who reported being limited in selected activities (home, school, work and other) because of a physical condition, mental condition, or health problem which has lasted or is expected to last six months or longer. **Source (s):** Statistics Canada, Canadian Community Health Survey (CORE)
Overweight and obesity, Body Mass Index (BMI) (HLS Target); Proportion of overweight adults in the population, aged 18 and over (BMI = 25-29.9); Proportion of obese adults (BMI≥30) in the population	**yes**	**yes^**	**yes**	✓✓	✓	✓	✓	✓✓	✓	✓	✓	✓✓	✓✓	✓✓	✓* **UPHN**	✓	Typically calculated from self-reported height and weight (except CCHS 2.2). Body Mass Index (BMI) is a method of classifying body weight according to health risk. It is calculated for the population aged 18 and over, excluding pregnant females and persons less than 3 feet (0.914 metres) tall or greater than 6 feet 11 inches (2.108 metres). BMI is calculated as follows: weight in kilograms divided by height in

[17] For indicators from CCHS, employment could be used, including whether respondent has a job or not and/or the kind of work they do. However, standard classifications are not used in CCHS.
[18] For indicators from CCHS, sexual orientation is possible as is disability where applicable.

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
																	metres squared. The index is: under 18.5 (underweight); 18.5 to 24.9 (normal weight); 25.0 to 29.9 (overweight); 30.0 to 34.9 (obese-Class I); 35.0 to 39.9 (obese-Class II); 40 or greater (obese - Class III). **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
5. SELF-ASSESSED PHYSICAL AND MENTAL HEALTH																	
Perceived health	**yes**	**yes^**	**yes**	✓✓	✓	✓	✓	✓✓	✓	✓	✓	✓✓	✓✓	✓✓	✓* **UPHN**	✓	Population 12 and over who reported perceiving their own health status as being either excellent, very good, good, fair or poor. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Perceived mental health	**yes**	**yes**	**yes**	✓✓	✓	✓	✓	✓✓	✓	✓	✓	✓✓	✓✓	✓✓	✓	✓	Population aged 12 and over who reported perceiving their own mental health status as being excellent, very good, good, fair or poor. Perceived mental health provides a general indication of the population suffering from some form of mental disorder, mental or emotional problems, or distress, not necessarily reflected in self-reported (physical) health. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
6. CAUSE-SPECIFIC OUTCOMES																	

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
Chronic conditions o Cancer -Total for all cancers -Specific site codes: colon/rectum (ICD–O–3 C18.0 to C18.9, C19.9, C20.9, C26.0), lung (ICD–O–3 C34.0 to C34.9), female breast (ICD–O–3 C50.0 to C50.9), and prostate (ICD–O–3 C61.9).	**yes**	**yes**	**yes**	✓	✓	✓	✖	✓	✖	✖	✖	✓	✓✓	✓✓	✖	✖	**Cancer:** Age-standardized rate of new primary sites of cancer (malignant neoplasms) per 100,000 population. **Source:** Statistics Canada, Vital Statistics, Cancer Database, Canadian Cancer Registry
Chronic conditions o Diabetes o Asthma o Arthritis Note: Current framework includes selected chronic conditions from CCHS (asthma, diabetes, arthritis, pain)	**yes**	**yes**	**yes**	✓✓	✓	✓	✓	✓✓	✓	✓	✓	✓	✓✓	✓✓	✓* **UPHN**	✓	These three are routinely standardized as indicators, but age-specific rates are produced. **Diabetes**: Population aged 12 and over who reported that they have been diagnosed by a health professional as having diabetes. Diabetes includes females aged 15 and over who reported that they have been diagnosed with gestational diabetes. **Source:** Statistics Canada, Canadian Community Health Survey (CORE) **Asthma**: Population aged 12 and over who reported that they have been diagnosed by a health professional as having asthma. **Source:** Statistics Canada, Canadian Community Health

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
																	Survey (CORE) **Arthritis:** Population aged 12 and over who reported that they have been diagnosed by a health professional as having arthritis. Arthritis includes both rheumatoid arthritis and osteoarthritis, but excludes fibromyalgia. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Incidence of selected notifiable infectious diseases[19] • Tuberculosis[20]	**yes**	**yes^**	**yes**	✓	✖	✖	✖	✓	✓	✖	✓	✓	✓✓	✖	✖	✖	**Tuberculosis:** Number of new cases of tuberculosis reported in a given year. **Source:** PHAC
• Newly notified HIV infections[21]	**yes**	**yes^**	**yes**	✓	✖	✖	✖	✓	✖	✓	✓	✓	✓✓	✖	✖	✓	**HIV:** Number of new positive HIV cases in a given year (excluding anonymous testing). Information is based on those who have been tested for HIV. **Source:** PHAC
• Clinically notified cases of	**yes**	**yes^**	**yes**	✓	✖	✖	✖	✓	✖	✖	✖	✓	✓✓	✖	✖	✖	**Chlamydia:** Number of new cases of chlamydia reported in a

[19] As per the consensus with our P/T counterparts, PHAC's data does not drill down beyond P/T level.
[20] Regularly collected data includes age, sex, origin (Canadian born non-Aboriginal, Canadian born Aboriginal (Status Indian, Inuit or Métis) or foreign born), immigrant status, and geocoding (first 3 letters). Small cell size issues.
[21] Regularly collected data includes age, sex, ethnicity and Aboriginal status (excluding Quebec and Ontario), exposure (excluding Quebec) and geocoding (first 3 letters). Work is underway to try to collect immigrant status. Small cell size issues.

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
Chlamydia[22]																	given year. **Source:** PHAC
Child Immunization rates[23] -DPT -MMR	**yes**	**no**	**yes**	**n/a**	✓	✓	✖	✓	✖	✖	✓	✓	✓	✖	✖	✖	Coverage estimates for diptheria, pertussis and tetanus by 2nd birthday. Coverage estimates for a single dose of MMR vaccine by 2nd birthday. **Source:** PHACs National Immunization Coverage Survey
Oral health o Ability to chew o Pain/discomfort in teeth/gums (within past month) NOTE: See also dental insurance coverage indicator	**yes**	**no**	**yes**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	**?**[24]	✓	Proportion of population aged 12 years of age and older who identify no limitation in chewing ability or limitations in chewing ability (derived). Proportion of population aged 12 years and older who have not experienced any oral or facial pain or discomfort in last month. **Source:** Statistics Canada, Canadian Community Health Survey (THEME)
INEQUALITIES IN HEALTH DETERMINANTS																	
A: DAILY LIVING CONDITIONS																	

[22] Regularly collected data includes age, sex, and geocoding (first 3 letters). Four jurisdictions collect Aboriginal information. There are some special studies done on factors such as income, ethnicity, education, and various vulnerable populations such as homeless people and prisoners.

[23] Survey (conducted every two years) asks first three letters of postal code, household income, and education of parent most familiar with immunizations or shots that the child has received. N=1200-1500 households, so disaggregating to small geography not possible. (Staff at PHAC connected to the Canadian Immunization Registry Network/National Advisory Committee on Immunization indicate this is the only data source, since only BC, AB, MB, SK, NL and NB have fully functional immunization registries). Vaccine preventable disease incidence won't work as N too small (for example – averages from PHAC website: measles=10/year; mumps=87/year; rubella=30/year; tetanus=4/year).

[24] Perhaps, if made core on CCHS.

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
Health behaviours																	
Smoking status	**yes**	**yes**	**yes**	✓✓	✓	✓	✓	✓✓	✓	✓	✓	✓✓	✓✓	✓✓	✓* **UPHN**	✓	Population aged 12 and over who reported being either a current smoker (daily or occasional) or a non–smoker (former or never smoked). Does not take into account the number of cigarettes smoked. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Dietary practices – consumption of fruit and vegetables (healthy food choices - HLS Target is 5 or more servings/day)	**yes**	**yes**	**yes**	✓✓	✓	✓	✓	✓✓	✓	✓	✓	✓✓	✓✓	✓✓	✓*	✓	Population aged 12 and over, by the average number of times per day that they reported consuming fruits and vegetables. Measure does not take into account the amount consumed. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Leisure time physical activity (HLS target) (NOTE: Physical inactivity produced for UPHN, based on combined cycles)	**yes**	**yes^**	**yes**	✓✓	✓	✓	✓	✓✓	✓	✓	✓	✓✓	✓✓	✓✓	✓* **UPHN**	✓	Population aged 12 and over who reported a level of physical activity, based on their responses to questions about the frequency, nature and duration of their participation in leisure time physical activity. Respondents are classified as active, moderately active or inactive based on an index of average

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
																	daily physical activity over the past 3 months. For each leisure time physical activity engaged in by the respondent, an average daily energy expenditure is calculated by multiplying the number of times the activity was performed by the average duration of the activity by the energy cost (kilocalories per kilogram of body weight per hour) of the activity. The index is calculated as the sum of the average daily energy expenditures of all activities. Respondents are classified as follows: 3.0 kcal/kg/day or more = physically active; 1.5 to 2.9 kcal/kg/day = moderately active; less than 1.5 kcal per day = inactive. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Alcohol use (heavy drinking)	**yes**	**yes**	**yes**	✓✓	✓	✓	✓	✓✓	✓	✓	✓	✓✓	✓✓	✓✓	✓* **UPHN**	✓	Population aged 12 and over who reported being current drinkers and who reported drinking 5 or more drinks on at least one occasion per month in the past 12 months."Heavy drinking" is defined as current drinkers who reported drinking 5 or more drinks on one occasion, 12 or more times a year. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
Breastfeeding practices[25]	**yes**	**yes**	**yes**	✓	✓	✓	✓	**n/a**	✓	✓	✓	✓	✓✓	✓*	✖	✓	The self-reported breastfeeding practices of women aged 15 to 55 who had a baby in the previous five years. Categories include did not breastfeed, initiated breastfeeding, breastfed for at least four months, breastfed for at least four months exclusively, breastfed for six months, and breastfed for at least six months exclusively. These benchmarks are former (four months exclusive breastfeeding) and current (six months exclusive breastfeeding) Health Canada recommendations. Initiated breastfeeding refers to women who breastfed or tried to breastfeed their last child even if only for a short time. Exclusive breastfeeding refers to an infant receiving only breast milk, without any additional liquid (even water) or solid food. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Physical and social environment																	
Core Housing Need[26]	**yes**	**no**	**yes**	✓	✓	✖	✖	✓	✓	✓	✓	✓	✓	✓	✓	✓	A household is said to be in core housing need if its housing falls below at least one of the

[25] Because of small N, ability to disaggregate may be limited.

[26] Data are disaggregatable by age of primary maintainer, average household income, whether the primary maintainer is a visible minority, and immigrant status. In terms of "other", data on disability, owner/renter, and household type (e.g. lone parent) available. Level of geography available based on census suppression rules (current tables available to CMA).

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
																	adequacy, affordability and suitability standards and it would have to spend 30% or more of its total before-tax income to pay the median rent of alternative local housing that is acceptable. (Adequacy – does not require any major repairs; affordability – costs less than 30% of before-tax household income; suitability – enough bedrooms for the size and make-up of resident household). Excludes non-family households led by maintainers aged 15-29 years of age attending school full-time. **Source:** Candian Mortgage and Housing Corporation (CMHC) based on Census and SLID (Statistics Canada)
Water quality: Number of boil water advisory days[27]	**yes**	**no**	**yes**	✖	✖	✖	✖	✖	✖	✖	✖	✖	✓	✖	✓	✖	Number of boil water advisory days amongst muncipalities that answered that they had problems with water supply quality at any

[27] Household/individual/neighbourhood level data not available. Data available at municiaplity level (city/town/village). Other options included Water Quality Index which is quite broad (whether "overall quality of water bodies poses a threat to various uses of water such as habitat for aquatic life, irrigation water for agriculture and livestock, recreation and aesthetics, and drinking water supplies") and only available in BC, AB, MB, PQ and NL. FCM uses indicators of water consumption, wastewater treatment and recreational water quality.

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
																	time since (last survey year) **Source:** Municipal Water and Wastewater Survey (conducted every 2-3 years); Environment Canada
Walk/bike to work[28]	**yes**	**no**	**yes**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	People who reported that their principal mode of transportation used to travel between a person's place of residence and workplace is either walking or riding a bicycle. **Source:** Statistics Canada, Census
Exposure to second-hand smoke at home Exposure to second-hand smoke in vehicles and public places	**yes**	**yes^**	**yes**	✓✓	✓	✓	✓	✓✓	✓	✓	✓	✓	✓✓	✓✓	✓✓	✓*	✓	**Exposure to second-hand smoke at home:** Non-smoking population aged 12 and over who reported that at least one person smoked inside their home every day or almost every day. **Exposure to second-hand smoke in vehicles and public places**: Non-smoking population aged 12 and over who reported being exposed to second-hand smoke in private vehicles and/or public places every day or almost every day during the past month. **Source:** Statistics Canada, Canadian Community Health

[28] Available through custom tab. Level of geography depends on N. Ideally, a walkability index would be used; however, this is not available at a pan-Canadian level at this time. Work has been conducted in this realm (e.g. Frank, 2005; www.walkscore.com) but further work would be required.

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
																	Survey (CORE)
Sense of community belonging	**yes**	**yes**	**yes**	✓✓	✓	✓	✓	✓✓	✓	✓	✓	✓✓	✓✓	✓✓	✓	✓	Population aged 12 and over who reported a sense of belonging to their local community as being very strong, somewhat strong, somewhat weak or very weak. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Working conditions																	
Workplace stress	**yes**	**no**	**yes**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓*	✓	Aged 16-74 who have worked at a job or business at any time in the past 12 months; in terms of their main job or business in the past 12 months if they reported that most days at work were: not at all stressful or not very stressful OR quite a bit stressful or extremely stressful. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Job strain[29]	**Optional CCHS**	**no**	**yes**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	**?**[30]	✓	This variable indicates whether the respondent reported experiencing job strain. Job strain is measured as a ratio of psychological demands and decision latitude, which includes skill discretion and decision authority. Based on WSTT401-406 and 409.

[29] This is the ideal indicator based on evidence including work done from the Institute for Work and Health, however the questions are optional in the CCHS; hence workplace stress (which is core in CCHS) is listed first. More work should be done on precariousness as an indicator for workplace conditions.
[30] Perhaps, if made core on CCHS.

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
																	Respondents less than 15 years old or more than 75 years old and respondents who have not worked at a job or business at any time in the past 12 months were excluded from the population. **SOURCE:** Derived variable from CCHS, Statistics Canada (OPTIONAL)
Health care *(coverage, health care system infrastructure)*																	
Use of specialists (indicator of use/access for insured services)	**yes**	**no**	**yes**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Population aged 12 and over who reported having seen or talked to any other medical doctor or specialist, such as a surgeon, allergist, orthopaedist, gynaecologist/urologist, or psychiatrist (about their physical, emotional or mental health) in past 12 months. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)
Visits with a dental professional last 12 months (indicator of use/access for uninsured services)	**yes**	**no**	**yes**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Population aged 12 and over who reported that in the past 12 months they have seen, or talked to, a dentist, dental hygienist or orthodontist. **Source:** Statistics Canada, Canadian Community Health Survey (CORE)

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
Presence of dental insurance (indicator of use/access for uninsured services)	**yes**	**no**	**yes**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	**?**[31]	✓	Population aged 12 and over who reported that they have insurance that covers all or part of their dental expenses. Source: Statistics Canada, Canadian Community Health Survey (OPTIONAL)
Preventive health services (indicator of access to preventive services): • Mammography screening (50-69) • Pap screening (18-69)[32]	**yes**	**yes^**	**yes**	✓	✓	✓	✓	**n/a**	✓	✓	✓	✓	✓✓	✓	**?**[33]	✓	**Mammography:** Women aged 50 to 69 who reported when they had their last mammogram for routine screening or other reasons. **Pap smear:** Women aged 18-69 who reported when they had their last Pap smear test. **Source:** Statistics Canada, Canadian Community Health Survey (THEME)
Social protection																	
Eligibility for EI[34] Ratio would have to be calculated separately for each group	**yes**	**no**	**yes**	✓	✓	✖	✖	✓	✓	✖	✓	✓	✓	✓	✓	✖	Calculation of beneficiaries-to-unemployed (B/U) ratio. (Beneficiaries are total regular beneficiaries in reference week (unemployed, not in labour force or employed). Unemployed is all unemployed.

[31] Perhaps, if made core in CCHS.
[32] Challenge is that there is no equivalent for males. (NOTE: Could have used high blood pressure and taking medication to control it (core CCHS) but issues with interpretation of this indicator. Questions are: do you have high blood pressure; have you ever been diagnosed with high blood pressure; and in the past month have you taken medication for high blood pressure. However, unclear how to calculate if the person requires the medication, and if this indicates it is under control.)
[33] Depends on categories used for responses.

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
																	Source: Statistics Canada, EI Coverage Survey (a sub-sample of the Labour Force Survey); also reported by HRSDC
Access to subsidised child spaces per child under age 6[35]	**no**	**no**	**yes**	✖	✖	✖	✖	✖	✖	✖	✖	✖	✓	✖	✖	✖	Centre-based full- and part-time day child care for aged 0-5 and % of children aged 0-5 for whom there is a regulated child care space. Number of children receiving subsidies. **Source:** Early Childhood Education and Care in Canada by Martha Friendly et. al. at the Childcare Resource and Research Unit (using questionnaire/telephone interviews with P/T)
B: STRUCTURAL DRIVERS																	
Gender *(norms and values, economic participation, sexual and reproductive health)*																	
Gender Equality Index (Sweden)[36]	**no**	**no**	**yes**	✓	n/a	n/a	n/a	n/a	✓	✓	✓	✓	?	?	?	?	Sweden's gender equality index includes people with post-secondary education (%, difference between men and women), people in gainful employment (%, difference), job seekers (%, difference), average

[34] For income, wage is available (not income). Geographically, EI region (which is sometimes smaller than CMA) is available; depends on N. HRSDC argues that this indicator "has the advantage of simplicity and historical availability". The ideal source for this data would be the actual EI files. However, contacts at HRSDC cited Access to Information and Privacy Issues, and stringent accessibility guidelines. However, further work in this area through official channels may result in potential access to this data.

[35] This data are not available. The closest data collected is centre-based full and part-time day child care for aged 0-5 year olds as described, in addition to number of children receiving subsidies by province/territory, and this data has many limitations and is not disaggregatable.

[36] This indicator would need to be developed. Further work can also ascertain to what level of geography this could be done.

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
																	income from gainful employment (dollars per inhabitant, difference), people with low income (% below 50% of median income), unequal sex distribution by industry (%, difference), and days of parental leave benefit. (%, difference) **Potential Source:** Census, Statistics Canada
Social inequities																	
Children in low income families	**yes**	**yes**	**yes**	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓✓	✓✓	✓	✓[37]	Population of children aged 17 and under living in economic families with incomes below Statistics Canada's low-income cut-offs (LICO). The cut–offs represent levels of income where people spend disproportionate amounts of money for food, shelter, and clothing. LICOs are based on family and community size; cut-offs are updated to account for changes in the consumer price index. **Source:** Statistics Canada, Census
Deprivation Index[38]	**yes**	**no**	**yes**	✓	✖	✖	✖	✓	✓	✓	✓	✓	✓	✓	✓	✓[39]	Index contains two elements: material deprivation and social deprivation. Material deprivation examines deprivation of modern day goods and conveniences, and

[37] For disability. Sexual orientation is not captured, but families in same-sex couples are.
[38] According to INSPQ, index can be cross tabulated by other variables such as immigrant status etc. Measures of income, employment and education are included in the measure of material deprivation.
[39] For disability. Sexual orientation is not captured, but families in same-sex couples are.

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
																	is measured by proportion of persons with no high school diploma, employment to population ratio, and average income of persons aged 15+. Social deprivation measures the fragility of the social network, and includes the proportion of persons 15+ who are separated, widowed, or divorced; living alone; and in single-parent families. **Source:** Census (Statistics Canada); index developed by INSPQ
Homelessness rate	**no**	**no**	**yes**	✓	✖	✖	✖	✓	✓	✓	✓[40]	✖	✖	✖	✓[41]	✓[42]	Definition needs to be developed. Currently only collected by certain municipalities with inconsistent methodologies/ definition. Only Vancouver, Toronto, Edmonton, Calgary, Saskatoon and Hamilton collect socio-demographic characteristics. Ability to disaggregate would depend on N. **Source:** Various municipalities

[40] This category is not very robust. Depending on the city, this can include immigrant shelters or people whose home country is not Canada.
[41] Municipalities
[42] Disability data are collected, but n is very small.

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
Working poor[43]	**yes**	**no**	**yes**	✓	✖	✓	✓	✓	✓	✖	✓	✓	✓	✓	✓	✖	Proportion of full-time employees aged 18 to 64 earning at or below minimum wage. Excludes self-employed and full-time students. **Source:** Labour Force Survey, Statistics Canada
Food security	**yes**	**yes (recently added to the framework)**	**yes**	✓	✓	✓	✓	✓	✓	✓	✓	? Hhld weights may be a limitation to small area data	✓	✓?? Hhld weights may be a limitation to small area data	✓	✓	Proportion of the population who reported experiencing multiple food deprivation issues, such as use of food banks, going without fresh fruit and vegetables, and buying cheap food to make ends meet. Food security – new module in 2005 **Source:** Statistics Canada, Canadian Community Health Survey (THEME)
Socio-political context *(civil rights, employment conditions, governance and public spending priorities, macro-economic conditions)*																	
At this point, there are no indicators for inclusion here. Indicators related to Aboriginal Peoples may be considered here in the future. Much the same considerations may need to be applied for indicators for ethno-																	

[43] Survey does not include income information, only wage information. Age group for inclusion in indicator will affect the ability to go to lower geographies (e.g. ages 15-64 will have a higher proportion than ages 25-64). Geography requires custom tab and depends on N; larger CMAs possible.

Indicator (Categories come from WHO CSDH)	Currently collected in Canada	Overlaps with CIHI/STC framework	Consistent with WHO CSDH	Age	Income	Education level	Employment/ occupation	Sex	Aboriginal status[8]	Ethno-racial status	Immigrant status	Urban/ rural[9]	P/T	Health authority level	Small area[10]	Other, e.g. disability, sexual orientation etc.	Indicator Definition and Source[11]
racial and immigrant status.																	

Appendix C: Status of Proposed Indicators

Proposed Indicator (Categories from WHO CSDH)	Data currently collected across Canada?	If data available, routinely collected?	If data available, who currently holds the data?	If data not available, who might collect any new data?	If indicator not developed/no data source, additional work required (definition development, data source development)
INEQUALITIES IN HEALTH STATUS					
1. MORTALITY					
Life expectancy at birth at 65	Yes	Yes	Statistics Canada, Vital Statistics, Death Database		
Infant mortality rate (IMR) presented as: - Crude IMR; and - IMR for live births ≥ 500 grams	Yes	Yes	Statistics Canada, Vital Statistics, Birth and Death Databases; **Birth-death linked file, PHAC (Health Surveillance and Epidemiology Division)**		**Data comparability issue:** Ontario data for IMR for live births ≥ 500 grams are not comparable due to data quality issues
Heart disease	Yes	Yes	Statistics Canada, Vital Statistics, Death Database		
Lung cancer	Yes	Yes	Statistics Canada, Vital Statistics, Death Database		
Unintentional injury	Yes	Yes	Statistics Canada, Vital Statistics, Death Database		
2. Early Childhood Development					
Early Development Instrument	No	No	EDI (Early Development Instrument) collected in	Provincial/territorial collection in conjunction with school boards	**Data source development:** Work needs to be done to ensure data are

Proposed Indicator (Categories from WHO CSDH)	Data currently collected across Canada?	If data available, routinely collected?	If data available, who currently holds the data?	If data not available, who might collect any new data?	If indicator not developed/no data source, additional work required (definition development, data source development)
			BC, MB, ON and Montreal only at this time		collected across the country. There is an expectation that this will be expanded to other provinces/territories in future. Stakeholders working on the EDI are holding a conference in November 2009 to try to further augment use across the country.
3. MENTAL ILLNESS					
Suicides	Yes	Yes	Statistics Canada, Vital Statistics, Death Database		**Potential additional indicator requiring data source development:** Two provinces identified the possibility of including parasuicide as an additional indicator for mental illness. However, there are no pan-Canadian data available for this at this time. In the future, as the CIHI National Ambulatory Care Reporting System (NACRS) includes more provinces and territories, this indicator may be re-examined.
Hospitalization composite indicator for mental health disorders	Yes	Yes	Discharge Abstract Database (CIHI), Ministère de la Santé et des		

Proposed Indicator (Categories from WHO CSDH)	Data currently collected across Canada?	If data available, routinely collected?	If data available, who currently holds the data?	If data not available, who might collect any new data?	If indicator not developed/no data source, additional work required (definition development, data source development)
			Services Sociaux du Québec; Census 2001 and 2006 (Statistics Canada)		
4. MORBIDITY AND DISABILITY					
Low birth weight **presented as:** - **fetal growth restriction; and** - **pre-term birth**	Yes	Yes	Statistics Canada, Vital Statistics, Birth **Database or PHAC**		**Data comparability issue:** Ontario data are not comparable due to data quality issues
Disability rates - Proportion of population with limiting long-term illness	Yes	Yes, core	Statistics Canada, Canadian Community Health Survey		
Overweight and obesity, Body Mass Index (BMI) (HLS Target); Proportion of overweight adults in the population, aged 18 and over (BMI = 25-29.9); Proportion of obese adults (BMI≥30) in the population	Yes	Yes, core	Statistics Canada, Canadian Community Health Survey		
5. SELF-ASSESSED PHYSICAL AND MENTAL HEALTH					
Perceived health	Yes	Yes, core	Statistics Canada, Canadian Community Health Survey		
Perceived mental health	Yes	Yes, core	Statistics Canada, Canadian Community Health Survey		
6. CAUSE-SPECIFIC OUTCOMES					
Chronic conditions	Yes	Yes	Statistics		

Proposed Indicator (Categories from WHO CSDH)	Data currently collected across Canada?	If data available, routinely collected?	If data available, who currently holds the data?	If data not available, who might collect any new data?	If indicator not developed/no data source, additional work required (definition development, data source development)
o Cancer Total for all cancers Specific site codes: -colon/rectum (ICD–O–3 C18.0 to C18.9, C19.9, C20.9, C26.0) -lung (ICD–O–3 C34.0 to C34.9) -female breast (ICD–O–3 C50.0 to C50.9) -prostate (ICD–O–3 C61.9).			Canada, Vital Statistics, Cancer Database, Canadian Cancer Registry		
Chronic conditions o Diabetes o Asthma o Arthritis	Yes	Yes, core	Statistics Canada, Canadian Community Health Survey		
Incidence of selected notifiable infectious diseases • Tuberculosis • Newly notified HIV infections • Clinically notified cases of Chlamydia	Yes	Yes	PHAC		
Child Immunization rates -DPT -MMR	Yes but see comments	Yes but see comments	PHAC (National Immunization Coverage Survey)	Currently collected by PHAC; immunization registries would be collected by provincial/territorial-based	**Potential replacement indicator requiring data source and definition development:** Staff at PHAC connected to the Canadian Immunization Registry Network/National Advisory Committee on Immunization indicate that only British Columbia, Alberta,

Proposed Indicator (Categories from WHO CSDH)	Data currently collected across Canada?	If data available, routinely collected?	If data available, who currently holds the data?	If data not available, who might collect any new data?	If indicator not developed/no data source, additional work required (definition development, data source development)
					Saskatchewan, Manitoba, New Brunswick and Newfoundland and Labrador have fully functioning immunization registries. Hence, a proxy source (small survey) is standing in as a data source at this point in time. Given further development of registries, the source of this indicator could be replaced with a more robust source.
Oral health o Ability to chew o Pain/discomfort in teeth/gums (within past month)	Yes	No, theme content in CCHS	Statistics Canada, Canadian Community Health Survey		**Data source development:** Would need to be made core in CCHS.
INEQUALITIES IN HEALTH DETERMINANTS					
A: DAILY LIVING CONDITIONS					
Health behaviours					
Smoking status	Yes	Yes, core	Statistics Canada, Canadian Community Health Survey		
Dietary practices – consumption of fruit and vegetables (healthy food choices)	Yes	Yes, core	Statistics Canada, Canadian Community Health Survey		
Leisure time physical activity	Yes	Yes, core	Statistics Canada, Canadian Community Health Survey		

Proposed Indicator (Categories from WHO CSDH)	Data currently collected across Canada?	If data available, routinely collected?	If data available, who currently holds the data?	If data not available, who might collect any new data?	If indicator not developed/no data source, additional work required (definition development, data source development)
Alcohol use (heavy drinking)	Yes	Yes, core	Statistics Canada, Canadian Community Health Survey		
Breastfeeding practices	Yes	Yes, core	Statistics Canada, Canadian Community Health Survey		
Physical and social environment					
Core Housing Need	Yes	Yes	Candian Mortgage and Housing Corporation (CMHC) based on Census and Survey of Labour and Income Dynamics (SLID) (Statistics Canada)		
Water quality: Number of boil water advisory days	Yes, but limited; see comments	Yes, but limited; see comments	Municipal Water and Wastewater Survey (conducted every 2-3 years); Environment Canada	Municipalities and communities	**Potential replacement indicator requiring data source and definition development:** Currently, the data source listed is limited and does not include First Nation communities on-reserve, for example. Further work needs to be done on this indicator to develop a data source that includes other communities. In

Proposed Indicator (Categories from WHO CSDH)	Data currently collected across Canada?	If data available, routinely collected?	If data available, who currently holds the data?	If data not available, who might collect any new data?	If indicator not developed/no data source, additional work required (definition development, data source development)
					addition, work may be done to develop a different indicator of water quality in which case definition development work is needed. One potential partner may be the National Collaborating Centres for Public Health (NCCPH) - the six NCCs have collectively identified small drinking water systems as a priority health issue, given that it is critical to human life and health.
Walk/bike to work	Yes	Yes	Statistics Canada, Census	If an index is developed, this work would likely have to be done in conjunction with Statistics Canada and municipalities.	**Potential replacement indicator requiring data source and definition development:** We have an indicator on walking/biking to work. A better indicator would be a walkability index (e.g. land-mix use, residential density and street connectivity) [29]. Some work on this has been done (e.g. www.walkscore.com or [29]), but to apply this at a pan-Canadian level is resource intensive and requires new data sources.
Exposure to second-hand smoke at	Yes	Yes, core	Statistics Canada,		

Proposed Indicator (Categories from WHO CSDH)	Data currently collected across Canada?	If data available, routinely collected?	If data available, who currently holds the data?	If data not available, who might collect any new data?	If indicator not developed/no data source, additional work required (definition development, data source development)
home Exposure to second-hand smoke in vehicles and public places			Canadian Community Health Survey		
Sense of community belonging	Yes	Yes, core	Statistics Canada, Canadian Community Health Survey		
Working conditions					
Workplace stress	Yes	Yes, core	Statistics Canada, Canadian Community Health Survey		**Potential additional indicator requiring data source and definition development:** While workplace stress and job strain are identified for work condition indicators, more work needs to be done to examine the possibility of an indicator for precariousness of employment, including definition development and potential data sources [30, 31].
Job strain	No, not across Canada given that it is optional content on CCHS	No, optional	Derived variable from Canadian Community Health Survey, Statistics Canada		**Data source development:** This is the ideal indicator based on evidence including work done from the Institute for Work and Health, however the questions would need to be made core in the CCHS.

Proposed Indicator (Categories from WHO CSDH)	Data currently collected across Canada?	If data available, routinely collected?	If data available, who currently holds the data?	If data not available, who might collect any new data?	If indicator not developed/no data source, additional work required (definition development, data source development)
Health care					
Use of specialists (indicator of use/access for insured services)	Yes	Yes, core	Statistics Canada, Canadian Community Health Survey		
Visits with a dental professional last 12 months (indicator of use/access for uninsured services)	Yes	Yes, core	Statistics Canada, Canadian Community Health Survey		
Presence of dental insurance (indicator of use/access for uninsured services)	No, not across Canada given that it is optional content on CCHS	No, optional	Statistics Canada, Canadian Community Health Survey		**Data source development:** Would need to be made core in the CCHS.
Preventive health services (indicator of access to preventive services): • Mammography screening (50-69) • Pap screening (18-69)	Yes	No, theme on CCHS	**Source:** Statistics Canada, Canadian Community Health Survey		**Data source development:** Would need to be made core in the CCHS.
Social protection					
Eligibility for EI	Yes	Yes	Statistics Canada, EI Coverage Survey (a sub-sample of the Labour Force Survey); also reported by Human Resources and Skills Development	If data source is changed as per comments, this would still come from the federal government	**Potential replacement indicator requiring data source and definition development:** We have included a suggestion for a data source for EI Eligibility; however a better source would be the actual EI records.

Proposed Indicator (Categories from WHO CSDH)	Data currently collected across Canada?	If data available, routinely collected?	If data available, who currently holds the data?	If data not available, who might collect any new data?	If indicator not developed/no data source, additional work required (definition development, data source development)
			Canada (HRSDC)		Access would require government-to-government requests.
Access to subsidized child spaces per child under age 6	No	No	Some data currently in Early Childhood Education and Care in Canada by Martha Friendly et. al. at the Childcare Resource and Research Unit (using questionnaire/ telephone interviews with P/T)	Provincial/territorial data sources	**Definition and data source development:** Data on subsidized child care spaces is not available. Currently collected data are identified; however; a more robust and ongoing indicator would need to be defined and data source would need to be developed.
B: STRUCTURAL DRIVERS					
Gender Equality Index (Sweden)	No	No		Potential source is Statistics Canada, Census	**Definition and data source development:** A gender equality index has not been developed or used in Canada. The Swedish index is suggested, but further work needs to be undertaken to decide if the Swedish definition will be used, and to decide on data sources.
Social inequities					
Children in low income families	Yes	Yes	Statistics Canada, Census		
Deprivation Index			Census (Statistics Canada); index		

Proposed Indicator (Categories from WHO CSDH)	Data currently collected across Canada?	If data available, routinely collected?	If data available, who currently holds the data?	If data not available, who might collect any new data?	If indicator not developed/no data source, additional work required (definition development, data source development)
			developed by Institut national de santé publique du Québec (INSPQ)		
Homelessness rate	No	No		Municipality level. Currently only collected by certain municipalities with inconsistent methodologies/ definition.	**Definition and data source development:** Homelessness does not have a consistent definition, nor is data available at a pan-Canadian level. More work needs to be done on a standard definition and data sourcing. Potential partners include the Homelessness Partnering Secretariat at HRSDC and the Federation of Canadian Municipalities.
Working poor	Yes	Yes	Labour Force Survey, Statistics Canada		
Food security	Yes	No, theme in CCHS	Statistics Canada, CCHS		**Data source development:** Would need to be made core in the CCHS.
Socio-political context *(civil rights, employment conditions, governance and public spending priorities, macro-economic conditions)*					
At this point, there are no indicators for inclusion here. Indicators related to Aboriginal Peoples may be considered here in the future. Work with Aboriginal groups is needed to decide on indicators and their definitions and to explore possible data sources. Much the same considerations may need to be applied for indicators for ethno-racial and immigrant status.					

Appendix D: FNIHB Poster: Monitoring the health status of First Nations in Canada: Where do we stand?

Please see pdf attachment.

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Poster: *Monitoring the health status of First Nations in Canada: Where do we stand?*

Title:

Monitoring the health status of First Nations in Canada: Where do we stand?

Authors:

Emily De Rubeis, MSc., First Nations and Inuit Health Branch, Health Canada

Jennifer Pennock, MSc., First Nations and Inuit Health Branch, Health Canada

Background:

- The imbalanced distribution of health status across populations within Canada is well documented, and is often associated with the social determinants of health.
- The World Health Organization (WHO) Commission on Social Determinants of Health recently released a report entitled, *Closing the Gap in a Generation: Health Equity through Action on the Social Determinants of Health*.[1] To monitor such inequalities, the WHO Commission recommended the development of national health equity surveillance systems that include:
  - a *minimum set of indicators* including basic health outcome indicators; and
  - a *broader set of indicators* on the social determinants of health.
- The health gap experienced by Indigenous populations was also identified by the WHO Commission, underscoring the need for high quality data for these populations.

Objective:

- To describe the current ability to monitor health outcome indicators among First Nations populations at the national-level as identified in the WHO-proposed national health equity surveillance system, and to assess its consistency with the First Nations concept of wellness.

Methods:

- A qualitative analysis of the WHO health equity surveillance framework was conducted.
  - The minimum health outcome indicators included in the WHO health equity surveillance framework were assessed to determine ***consistency*** with the First Nations concept of wellness as identified in the First Nations Health Reporting Framework (Assembly of First Nations)[2] and the Wholistic Policy & Planning Model (Assembly of First Nations)[2], and the First Nations Regional Longitudinal Health Survey Cultural Framework (First Nations Information Governance Committee, Assembly of First Nations)[3].
  - The ***availability and quality*** of national-level data for mortality and morbidity indicators were examined. An analysis was completed to determine if available data met WHO-stated standards of quality, representativeness, and comparability over time. The ability to stratify available data by other social and geographic markers was also assessed.
  - The broader set of indicators on the social determinants of health were assessed to determine consistency with the First Nations concept of wellness, and to determine general availability of data.

Results:

- Of the nine mortality and morbidity indicators identified in the WHO health equity surveillance framework, six are consistent with the First Nations concept of wellness (**Table 1**).

- There are limited data available for the mortality indicators; while data are available for all morbidity indicators (**Table 2**). Quality, representativeness, and/or comparability issues exist:
    - The availability of high-quality ***mortality data*** is limited by the non-standard collection of information on Aboriginal identity on birth and death vital event registrations. Similar data issues are identified for the on- and off-reserve First Nations populations.
    - Although relevant ***morbidity data*** are collected for First Nations living on- and off-reserve on a regular basis, survey data rely on self-reporting of selected attributes and conditions. Unique data issues are identified for the on- and off-reserve First Nations populations.
    - ***Mortality and morbidity data*** are limited with respect to the ability to stratify by other factors, such as geography and Registration status.
- An assessment of additional social determinants indicators shows that they are generally consistent with First Nations-specific reporting and cultural frameworks (**Table 3**). Data for these indicators are generally available.

Conclusions:

- In order to develop a framework that is reflective of the First Nations concept of wellness, the framework may need to expand the list of indicators to include:
    - basic health outcome indicators which are present in First Nations-specific reporting frameworks but excluded from the WHO-proposed framework, including suicide and injury rates, and immunization markers; and
    - culturally relevant factors, for example, effects of colonization, self-determination, and cultural continuity. However, the feasibility of collecting data on other social determinants of health factors will need to be explored.
- The current WHO-framework can act as a base for monitoring at the national-level but it will require some adjustment to ensure the inclusion of relevant indicators that are useful at the community level.
- Current data sources for First Nations populations, specifically for mortality indicators, are insufficient for monitoring of health inequalities. Identified gaps in data will need to be addressed in collaboration with First Nations populations through coordinated efforts at all levels.
- First Nations led data development initiatives, such as the First Nations Regional Longitudinal Health Survey, are successful in increasing the availability of data for many indicators.
- Similar and detailed evaluations should be conducted for the broad set of social determinants indicators, and in general for Métis and Inuit populations.

Acknowledgements:

Health Information, Analysis and Research Division, Health Canada, First Nations and Inuit Health Branch.

References:

1. Commission on Social Determinants of Health (2008). Closing the gap in a generation: health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health. Geneva, World Health Organization.

2. Assembly of First Nations Health & Social Secretariat (2006). The development of a First Nations health reporting framework. Ottawa, Assembly of First Nations.
3. First Nations Information Governance Committee (FNIGC) (2005). First Nations Regional Longitudinal Health Survey (RHS) 2002/2003, Results for adults, youth and children living in First Nations communities. Ottawa, Assembly of First Nations. p. 1-12.

Table 1
Consistency of WHO-proposed mortality and morbidity indicators[1] with First Nations concept of wellness[2]

HEALTH OUTCOME INDICATORS AS DEFINED BY WHO COMMISSION ON SOCIAL DETERMINANTS OF HEALTH[1]	CONSISTENCY WITH FIRST NATIONS CONCEPT OF WELLNESS AS CITED IN FIRST NATIONS HEALTH REPORTING AND CULTURAL FRAMEWORKS[2]
Mortality indicators	
Infant mortality	**Yes**
Under-five mortality	Not listed
Maternal mortality	Not listed
Adult mortality	Not listed
Life expectancy at birth	**Yes**
Morbidity indicators	
Prevalence of obesity	**Yes**
Prevalence of diabetes	**Yes**
Prevalence of HIV	**Yes**
Self-rated health	**Yes**

1. As defined by WHO Commission on Social Determinants of Health Framework for a Minimum Health Equity Surveillance System.
2. As defined in the First Nations Health Reporting Framework (draft) (Assembly of First Nations), the Wholistic Policy & Planning Model (Assembly of First Nations), and the First Nations Regional Longitudinal Health Survey Cultural Framework (First Nations Information Governance Committee, Assembly of First Nations).

Table 2
Availability and quality of data for WHO-proposed mortality and morbidity indicators[1] for First Nations populations in Canada

Health Outcome Indicators As defined by WHO Commission on Social Determinants of Health[1]	Data Available		Data Source		National Coverage		Quality Concerns		Comparability over Time	
	On-Reserve	Off-Reserve	On-Reserve	Off-Reserve	On-Reserve	Off-Reserve	On-Reserve	Off-Reserve	On-Reserve	Off-Reserve
Mortality indicators										
Infant mortality	Limited	Limited	Administrative (Health Canada)	Administrative (Health Canada)	No	No	- Non-standard collection of information on Aboriginal identity on birth and death vital event registrations - Regional variation in data collection methods - Limited coverage, only Registered First Nations in select provinces - Identification of on- and off-reserve populations based on self-reported, non-mandatory data field - Inconsistent ability to disaggregate data by on- or off-reserve status - Calculation methods not recognized as gold-standard (i.e., cross-sectional method)		No	No
Under-five mortality	No	No	n/a	n/a	n/a	n/a	n/a		n/a	n/a
Maternal mortality	No	No	n/a	n/a	n/a	n/a	n/a		n/a	n/a
Adult mortality	Limited	Limited	Administrative (Health Canada)	Administrative (Health Canada)	No	No	- Non-standard collection of information on Aboriginal identity on birth and death vital event registrations - Regional variation in data collection methods - Limited coverage, only Registered First Nations in select provinces - Identification of on- and off-reserve populations based on self-reported, non-mandatory data field - Inconsistent ability to disaggregate data by on- or off-reserve status		No	No

Health Outcome Indicators As defined by WHO Commission on Social Determinants of Health[1]	Data Available		Data Source		National Coverage		Quality Concerns		Comparability over Time	
	On-Reserve	Off-Reserve	On-Reserve	Off-Reserve	On-Reserve	Off-Reserve	On-Reserve	Off-Reserve	On-Reserve	Off-Reserve
Life expectancy at birth	Yes	Yes	Administrative (INAC)	Administrative (INAC)	Yes	Yes	- Limited coverage, only Registered First Nations - Identification of on- and off-reserve populations based on self-reported, non-mandatory data field		Yes	Yes
Morbidity indicators										
Prevalence of obesity	Yes	Yes	First Nations Regional Longitudinal Health Survey (FNIGC, AFN)	Aboriginal Peoples Survey (Statistics Canada)	Yes	Yes	- National sample of First Nations population (with exception of Nunavut) - Representativeness varies across regions - Exclusion of smaller communities - Insufficient sample for analysis at community-level - Non-response - Self-report	- National sample of Aboriginal populations, sampling frame based on Census - Sampling frame based on self-identification of Aboriginal identity - Non-participation (e.g., community and individual-levels) - Non-response - Self-report	Yes (Conducted approximately every 4 years)	Yes (Conducted in 1991, 2001 and 2006)
Prevalence of diabetes	Yes	Yes								
Prevalence of HIV	Yes	Yes								
Self-rated health	Yes	Yes								

1. As defined by WHO Commission on Social Determinants of Health Framework for a Minimum Health Equity Surveillance System.

Notes:
Information based on current national data holdings.
Both the Aboriginal Peoples Survey and the First Nations Regional Longitudinal Health Survey collect data on First Nations living on-reserve. However, the First Nations Regional Longitudinal Health Survey is more comprehensive of the on-reserve First Nations population.

Source:
Health Canada, First Nations and Inuit Health Branch in-house statistics.
First Nations Information Governance Committee (FNIGC) (2005). First Nations Regional Longitudinal Health Survey (RHS) 2002/2003, Results for adults, youth and children living in First Nations communities. Ottawa, Assembly of First Nations.
Indian and Northern Affairs Canada (2003). Population Projections of Registered Indians, 2000-2021. Ottawa, Public Works and Government Services Canada.
Statistics Canada, Description of Population Projections of Registered Indians for Canada and Regions, 2000-2021 (2002). Ottawa, Minister of Industry.

Table 3
Consistency of WHO-proposed broad-level social determinants indicators[1] with First Nations concept of wellness[2], and assessment of general availability of national-level data for First Nations populations in Canada

BROADER INDICATORS ON THE SOCIAL DETERMINANTS OF HEALTH AS DEFINED BY WHO COMMISSION ON SOCIAL DETERMINANTS OF HEALTH[1]	CONSISTENCY WITH FIRST NATIONS CONCEPT OF WELLNESS AS CITED IN THE FIRST NATIONS HEALTH REPORTING AND CULTURAL FRAMEWORKS[2]	GENERAL AVAILABILITY OF NATIONAL-LEVEL DATA
Daily living conditions		
Health behaviours	Yes	Yes
Physical and social environment	Yes	Yes
Working conditions	No	n/a
Health care	Yes	Yes
Social protection	Yes	No
Structural drivers of health inequity		
Gender	Yes	Yes
Social inequalities	Yes	Yes
Sociopolitical context	Yes	Yes

1. As defined by WHO Commission on Social Determinants of Health Framework for a Minimum Health Equity Surveillance System.
2. As defined in the First Nations Health Reporting Framework (draft) (Assembly of First Nations), the Wholistic Policy & Planning Model (Assembly of First Nations), and the First Nations Regional Longitudinal Health Survey Cultural Framework (First Nations Information Governance Committee, Assembly of First Nations).