

Promoting Health Equity - Choosing Appropriate Indicators: Literature Scan

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1.0 Executive Summary

Health systems play a significant role in achieving more equitable health outcomes for populations. Recognizing this, the Provincial Health Services Authority (PHSA) developed the report: *Towards Reducing Health Inequities: A Health System Approach to Chronic Disease Prevention*. Its aim was to identify actions the health system in British Columbia could take towards reducing health inequities through the design, organization and management of their programs and services.¹ While improving the immediate and long-term health outcomes of individuals, communities and society, reducing inequities in health can also help reduce the use of emergency and other health care services.

The first recommendation in the report, *Towards Reducing Health Inequities* was to: “Develop health equity targets and plans in consultation with communities and community members, and actively monitor and measure their impact on health inequities.”² It suggested building on current initiatives, and incorporating health equity into all current and future efforts.

To help implement this recommendation, a scan of the literature on appropriate health equity indicators was commissioned. The following scan provides a number of options to support decision-making to identify health equity indicators and targets for British Columbia. It was determined that indicators would be identified that:

- apply across the life cycle and are directly influenced/impacted by the health care system;
- apply to health service planning and priority-setting, and clinical practice; and
- have been assessed against existing data sources relevant to health equity, and are available in British Columbia.

Scope of the Project

While the mandate to implement health equity indicators and targets is broader than the services and programs under the control of Health Authorities (HA), it was decided to limit initial efforts to work carried out by the HA's. This way, the use of indicators can be demonstrated within the health system before expanding to non-profit and community organizations, members of the public and other stakeholders that engage with and influence the health system.³ Meaningful engagement or consultation with the community should be explored in future phases of this initiative.

At the inaugural meeting of stakeholders to review this project, it was confirmed that the indicators would: be evidence-based, align with the BC Health Quality Matrix, focus on feasibility and utility, span the continuum of care, and build on work completed to date.⁴

Towards Reducing Health Inequities focused on three underserved populations: immigrants, refugees and individuals transitioning into and out of the corrections system.⁵ However, many of the themes, issues, and opportunities identified are pertinent to many underserved groups in BC. Aboriginal peoples, women and those living in rural and remote areas in Canada have been identified as being at greater risk of health inequities.⁶ In a review of Health Authority Service Delivery Plans, Aboriginal peoples, high-risk or vulnerable groups and children emerged as priority populations.

Key Dimensions and Opportunities to Integrate Equity into Health Planning

Three dimensions of equity in health care were identified in *Towards Reducing Health Inequities*: availability, accessibility and acceptability of services. Health literacy and cultural competency emerged as key components underlying these aspects of equity in health care.

Opportunities were explored to integrate equity indicators into or align them with existing processes and mechanisms. The Ministry of Health Goals were reviewed, as were the HA's Service and Strategic Plans. All HAs identify health equity or the improved health of vulnerable populations within their Service or Strategic Plans, and have programs underway to reduce health inequities in their regions. (See Appendix A for details.)

Decisions Taken To-Date

The last ten years have seen an increased focus on health equity and performance of the health care system. Literally thousands of indicators have been developed and implemented by dozens of jurisdictions around the world. For example, a British Columbia review of potential child well-being indicators identified 2,500 different ways to measure child health.⁷ An appropriate framework, criteria and priorities were clearly required to guide the development of practical health indicators for BC.

A Framework – After reviewing a number of potential frameworks and disparity indices presented in this report, the Canadian Health Indicator Framework was identified as most appropriate for adaptation to the situation in British Columbia. It has also been adapted for use by Interior Health (see Appendix B).

Criteria – Based on a review of criteria used in establishing health equity indicators in various jurisdictions, a recommendation was made that the following six criteria guide the selection of indicators in British Columbia: feasible (actionable, based on available data), understandable, relevant, valid, reliable and comparable.

Indicators in Use

A sample of indicators being proposed or used across Canada, within provinces, regions or cities, and internationally are provided in this paper. A focus is put on indicators being used in British Columbia, including the BC Health Quality Matrix, the Early Development Instrument, those used by the Representative for Children and Youth, Indicators for Aboriginal Health and the Balanced Scorecard being used by Vancouver Coastal Health.

Gaps and limitations to the indicators available are noted. A short assessment of processes to gather patient information for the purposes of equity is also provided. To help focus efforts on equity within the health system, potential barriers within the system are reviewed, including structural (or institutional), financial and cognitive barriers.

Establishing Priorities

It is important that indicators adopted in British Columbia reflect the province's health priorities. The European Community Health Indicators Monitoring project narrowed their long-list of almost 500 items down to 82 indicators that focused on major public health problems with the best chances for improvement, using the following criteria: ⁸

1. importance for overall health status and major health problems at the population level;
2. strength of evidence for inequalities in health; and
3. importance for effective interventions and health policies.

A review of the international literature found race, ethnicity, language and socio-economic status (SES) to be the "most strategic" dimensions of indicators.⁹ For Canada, the following indicator dimensions have been identified as priorities in tracking inequities: income/SES, age, gender, education, ethnicity, Aboriginal status and geography (rural/urban).¹⁰

Given that the initial focus in British Columbia is the health system, it made sense to identify indicators that measure issues that are amenable to action by the health system. CIHI, in its report, *Reducing the Gaps in Health: A Focus on Socio-Economic Status in Urban Canada* measured health disparities between socio-economic groups in hospital admissions for 12 conditions, and self-rated health on eight conditions. St. Michael's Hospital, in Toronto, also developed a set of ten indicators designed to measure equity of care in the hospital setting.¹¹ Both these sets of indicators are specific to urban settings, and may not reflect rural and remote health issues.

The CIHI indicators are: ¹²

- **Hospital Admission indicators** – ambulatory care sensitive conditions, diabetes, chronic obstructive pulmonary disease (20 years of age or older), asthma in children, injuries, land transport accidents, mental health (acute care hospitalization only, not psychiatric hospitals), anxiety disorders, affective disorders, substance-related disorders, low birth weight
- **Self-reported health indicators** (used to gauge perceived health and well-being of those ages 12 and over, unless otherwise stated): self-rated health, physical inactivity, smoking, alcohol intake, overweight or obese (ages 18 and over), risk factors (ages 18 and over - three or more of the following self-reported variables: physical inactivity, BMI of 25 or more, current smoker or binge drinker), influenza immunization (ages 65 and over); and participation and activity limitation (ages 65 and over)

*St. Michael's Hospital indicators are:*¹³

- **Equity in hospital care:** cultural concordance between patients and staff, accessibility of language services, patient satisfaction, perforated appendix rate, minimally invasive cholecystectomy rate, use of analgesics for pain management, and rate of death within 30 days of hospital admission for acute myocardial infarction

- **Indicators specific to Toronto Central - Local Health Integration Network (TC-LHIN) priority populations:** length of physical restraint use among patients with mental illness, pressure ulcer rate (to address issues of the elderly) and lower extremity amputations among patients with diabetes

Conclusion

It is important that the health equity indicators chosen are specific to British Columbia's priorities and mandate. To identify priorities, all Health Authority Service Delivery Plans were reviewed for goals or objectives that dealt with health equity (see Appendix A). From that review, Aboriginal peoples, high-risk or vulnerable groups and children emerged as priority populations. Specific health issues or measures common to all Health Authorities did not emerge.

Consultation with representatives of all components of British Columbia health services will be required as the first step in determining health equity indicators. While public health has traditionally been more focused on equity issues, primary care, acute care, community care, long-term care and all provincial agencies/services must be engaged in the process to implement indicators that are truly valuable. Examples are available within the province and across Canada of how addressing issues of equity improves services and reduces the impact of disease and the cost of care.

2.0 Background and Introduction

Health systems can play an important role in achieving more equitable health outcomes for populations through the design, organization and management of their programs and services.¹⁴ They can also influence “upstream” factors and impact on the broader socio-political environment.¹⁵ While improving the immediate and long-term health outcomes of individuals, communities and society, reducing inequities in health could also help reduce the use of emergency and other health services.

To respond to this crucial challenge, the Provincial Health Services Authority (PHSA) developed the report: *Towards Reducing Health Inequities: A Health System Approach to Chronic Disease Prevention* (hereafter referred to as *Towards Reducing Health Inequities*). Its aim was to identify actions the health system in British Columbia could take *Towards Reducing Health Inequities*. Initial work focused on three underserved populations: immigrants, refugees, and individuals transitioning into and out of the corrections system.¹⁶ However, many of the recommendations outlined by stakeholders involved in the initial engagement process to improve the quality and accessibility of the health system’s policies, programs, and services, could apply to other vulnerable populations across the province.

The first recommendation in the report, *Towards Reducing Health Inequities* was to: ¹⁷ “Develop health equity targets and plans in consultation with communities and community members and actively monitor and measure their impact on health inequities.” It suggested building on current initiatives, and incorporating health equity into all current and future efforts.

Specifically, the recommendation identified the following opportunities for action:

- Utilize equity assessment tools to ensure equity is incorporated in the design, implementation, and evaluation of ongoing and future policies, programs, services, activities and initiatives.
- Create a Health Equity Protocol or Audit process to ensure that equity targets are incorporated in the development of all system-wide policies and programs.
- Develop health equity indicators and build on current initiatives that are collecting local-level data. This could be in the form of a provincial-level coordinated data collection and analysis system, or some other mechanism that links decision-makers with the evidence needed for informed policy making. When analysing data, ensure that it is disaggregated based on gender, ethnicity, socio-economic status (SES), and other relevant social dimensions.

This scan of the literature is designed to assist and support PHSA’s and British Columbia’s Health Authorities’ (HAs’) efforts to develop a common set of indicators and targets by which to measure activities aimed at reducing health inequities. Indicators will be identified that:

- apply across the life cycle and are directly influenced/impacted by the health care system;
- apply to health service planning and priority-setting, and clinical practice; and
- have been assessed against existing data sources relevant to health equity, and are available in British Columbia.

2.1 Scope of the Report

According to the report, *Towards Reducing Health Inequities*, the health system is defined as comprising “all components whose primary intent is to promote, restore or maintain health, including leadership, policy, service planning and delivery, health workforce, and health information”. This broad definition of the health system includes:

- Health services and programs under the control of the health authorities;
- Ministry-led initiatives;
- Members of the public, non-profit and community organizations; and
- Other stakeholders that can engage with and influence health outcomes.

However, for the purposes of this project, indicators will be limited to those that can be acted upon directly by the health system. At the inaugural meeting of stakeholders to review the project, it was noted that, while the mandate to implement health equity indicators and targets is broader than the services and programs under the control of HAs, it is important to “walk the talk”, and implement indicators at that level before expanding the scope to other elements of the broad health system.¹⁸

At that meeting, it was also confirmed that the indicators would:

- be evidence-based;
- align with the BC Health Quality Matrix;
- focus on feasibility and utility;
- span the continuum of care; and
- build on work completed to date.

The definitions guiding this work are outlined in the Glossary of the report, *Towards Reducing Health Inequities*.

2.2 Methodology

The information summarized in this literature scan was collected through the following methodologies:

1. The scope and parameters of the scan were established (*Appendix C: Reducing Health Inequities: Indicators and Targets, Final Study Design Plan, June 19, 2012*).
2. A literature search was conducted, searching both Canadian and international sources, including peer-reviewed and grey literature.
3. Health Authority representatives provided information on indicators currently in use.
4. Selected conference calls were held, including those of the National Collaborating Centre for Determinants of Health (NCCDH) Learning Circle on the *Population Health Status Reporting*

(PHSR) Initiative; and Health Equity Projects teleconferences, convened collaboratively by PHSA and with NCCDH in conjunction with the National Collaborating Centre on Methods and Tools.

5. Five key informant interviews were conducted.
6. The information was synthesized and analyzed to prepare this report.

2.3 Focus Populations

Health inequities are the socially produced and systematic differences in health status among various groups in the population, and are, therefore, preventable.¹⁹ While inequities disproportionately affect the health of lower socioeconomic status (SES) groups and those in rural and remote areas, they affect everyone along the gradient of these groups – income, education, gender, ethnicity, etc. Some organizations address inequities by directing efforts to the most marginalized and lowest SES groups, therefore reducing the gap in health. Others approach inequities by removing barriers to health for all members of the population, allowing almost anyone along the health gradient to improve their health status.

The report, *Towards Reducing Health Inequities* focused on three underserved populations: immigrants, refugees and individuals transitioning into and out of the corrections system.²⁰ However, many of the themes, issues, and opportunities identified are pertinent to many underserved groups in BC. Aboriginal peoples, women and those living in rural and remote areas in Canada have been identified as being at greater risk of health inequities.²¹ In a review of Health Authority Service Delivery Plans, Aboriginal peoples, high-risk or vulnerable groups and children emerged as priority populations.

Aboriginal Peoples – Aboriginal People in British Columbia, as elsewhere in Canada, experience poorer health and higher levels of chronic diseases and injuries compared to other residents in the province.²² Status Indians die at earlier ages and at greater rates than other residents, for all measures of premature mortality measured, both during infancy and later in life, and for major diseases, injury and major risk factors such as alcohol, drugs, or smoking.²³ Across Canada, disparities are seen in education, income and housing, rates of life expectancy, mortality, infant mortality, diabetes, accidental injury, infectious diseases such as HIV/AIDs and tuberculosis, and suicides.²⁴

Women – While British Columbian women have a longer life expectancy than men, they are more likely to have poorer health status for many health indicators.²⁵ In British Columbia, women are less likely to report being in good or excellent health than the Canadian average.²⁶ Gaps exist in life expectancy between the lowest and highest income quintiles, and between regions in British Columbia. Those with lower SES have increased prevalence of chronic diseases such as cancer, respiratory diseases, cardiovascular diseases and diabetes. Low-income groups are particularly vulnerable and include lone-parent women, immigrant and Aboriginal women, the elderly and women with disabilities.

Issues that relate directly to the health system include the concern that almost 20 per cent of women in prime childbearing years in British Columbia do not have a regular medical doctor, and that female patients expressed the lowest satisfaction scores for health care services, hospital care and physician care in Canada.²⁷ Health care services are not equally available across the province, and by particular

groups of women, including those with disabilities, women whose first language is not English, and for those unfamiliar with the health care system.

It has been argued that, because women are more likely to have more than one chronic condition, they are ill-served by health systems that tend to deliver suboptimal care for chronic illness, particularly for individuals with multiple chronic conditions.²⁸ The POWER Study (Project for an Ontario Women's Health Evidence-Based Report) is a multi-year project that has produced a comprehensive provincial report on women's health.²⁹ It examined differences in health due to gender and factors like socioeconomic status, ethnicity and geography. The project emphasized indicators that are modifiable, aiming to produce an evidence-based tool to help policy makers, providers and consumers improve the health of, and reduce inequities, among women.

Rural and remote populations – British Columbians living in rural areas generally have poorer health than urban-dwellers, and are more likely to experience significant barriers to good health, including distance, poor transportation systems and fewer available services.³⁰

Note: The health of specific populations varies across health regions in British Columbia. For example, while women are noted as a vulnerable population generally, men in the Northern Health Authority have been identified as having poorer health than women.³¹

2.4 Key Areas of Equity in Health Care

As outlined in *Towards Reducing Health Inequities*, three areas of equity in health care have been identified:

- Availability of services
 - timely diagnostic and treatment services
 - lack of primary care physicians
 - limited availability of specialty services, such as mental health and substance use programs, and obstetrics, maternity, and gynecological services
 - within urban centres, services may be unavailable due to limited hours of operation, long waiting lists, or because they are not covered under Medicare
- Accessibility of services
 - literacy, language, gender, ethnicity, and geography
 - health literacy (language, use of jargon or advanced vocabulary, web-based rather than paper media, complexity of the health care system)
- Acceptability of services
 - culturally competent services and safe spaces
 - respectful and responsive to the diverse health beliefs, practices, and cultural and linguistic needs of patients

Health literacy and cultural competency have emerged as key components underlying the availability, accessibility, and acceptability of the health system.

2.5 Opportunities to Integrate Equity into /Align Equity with Health Planning

The BC Ministry of Health has goals that present an opportunity to incorporate health equity targets and indicators. Current service plans encompass the following health goals:

Goal 1: Effective health promotion, prevention and self-management to improve the health and wellness of British Columbians

Goal 2: British Columbians have the majority of their health needs met by high-quality primary and community-based health care and support services

Goal 3: British Columbians have access to high-quality hospital services when needed

Goal 4: Improved innovation, productivity and efficiency in the delivery of health services

All HAs identify health equity or the improved health of vulnerable populations within their Service or Strategic Plans, and have programs underway to reduce health inequities in their regions (detailed in *Appendix A*). Specific commitments within HAs goals or strategies that are related to health inequity include:

- Vancouver Coastal Health (VCH) has the objective to “Reduce health inequities in the populations we serve through focused improvements in core public health programs.” VCH commits to “report annually on health inequities to track progress and increase organizational accountability for the reduction of health inequities.”³²
- Provincial Health Services Authority (PHSA) Strategic Plan³³ commits to, “Promote health in high risk populations,” including children and families living in poverty, people with addictions and/or mental illness, Aboriginal people, new immigrants, and others. PHSA aims to “focus (its) efforts on the greatest opportunities to close gaps in health status where inequities exist”.
- Interior Health Authority (IHA) notes, within its first goal to “Improve Health and Wellness,” the reduction of health inequities, with a specific strategy for First Nations and Aboriginal communities.³⁴
- The Fraser Health Authority (FHA) Service Plan includes strategies to meet Goal 1 that address vulnerable women during pregnancy, and to work in partnership to close the gap in health status between Aboriginal people and other Canadians.³⁵
- Northern Health identifies a number of strategies to work with Aboriginal communities to improve the health status of the Aboriginal population.³⁶ It also strives to have all members of Board, Executive and Senior Management teams complete the PHSA Cultural Competency program by the end of 2011-2012.
- Vancouver Island Health Authority (VIHA) notes the need to improve the health of high needs populations in its Service Plan, including children and youth, rural and remote residents, Aboriginal people, people with chronic diseases, and homeless/hard to serve populations. It aims to reduce the gaps in health through community partnerships.³⁷

3.0 Health Indicator Frameworks and Disparityⁱ Indices

In the last ten years, over 80 different indicators of health and performance of the health care system have been developed by the Health Indicators Project, a collaboration between Statistics Canada and Canadian Institute for Health Information.³⁸ A British Columbia review of potential child well-being indicators identified 2,500 different ways to measure child health.³⁹ The POWER project in Ontario produced a Gender and Equity Health Indicator Framework that identified over 265 health indicators.⁴⁰ The European Community Health Indicators (ECHI) project has recommended monitoring of 88 different indicators.⁴¹ Clearly, some sort of framework and priorities are required to guide the development of appropriate and practical health indicators for British Columbia.

It is important to distinguish between indicators that measure health determinants or health status from those that identify health disparities.⁴² Health determinant indicators show the overall level of the determinant in the population, such as housing status or employment levels. However, improvements in health determinants can indicate “widening inequalities in their social distribution,”⁴³ if, for example, the indicator average is improving only through changes to wealthier members of society. Health disparities indicators, by definition, are used to show the unequal distribution of the health determinant/health status in the population.

One researcher has identified three basic components required to measure health inequity:^{44. (ii)}

- An indicator of health or a modifiable determinant of health, such as health care, living conditions, or the policies that shape them;
- An indicator of social position, i.e., a way of categorizing people into different groups (social strata) based on social advantage/ disadvantage, such as income, education, ethnic group, or gender; and
- A method for comparing the health (or health determinant) indicator across the different social strata, such as a ratio of the rates of the health indicator in the least and most advantaged strata.

A variety of options are available to present health inequity data, but it is beyond the scope of this scan to analyze them. Potential measures will need to be revisited when the project is at the stage of identifying health equity targets.

A robust set of health equity indicators must be based within a strong framework. The frameworks mentioned above are summarized here, with the frameworks themselves provided in *Appendix B*, as a basis for further discussion.

ⁱ The term “inequity” is used throughout this report to refer to unfair differences. The term “disparity” identifies differences and is used here because that is the specific name put to the indices discussed.

ⁱⁱ Reproduced from Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited June 27, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf

3.1 Canadian Health Indicators Framework

The Canadian Health Indicator Framework is considered a foundational framework, first established by Statistics Canada and CIHI in 1999 as a core set of indicators for health reporting.⁴⁵ In 2004, it introduced the equity dimension of the Health Indicator Framework and identified the following elements for this lens: income (identified as “most important”), age, gender, education, ethnicity, and rural/urban.⁴⁶ It is interesting to note that all five areas of quality in the BC Health Quality Matrix¹³⁹ (acceptability, appropriateness, accessibility, safety and effectiveness) are included in the Health System Performance indicators listed below.

The indicators are organized into four tiers, with equity as a cross-cutting measure:

- **Health Status**, which documents the overall health of the population and includes measures of well-being, health conditions, human function (disability) and death.
- The **Non-Medical Determinants of Health**, which underpins Health Status and includes factors that affect our health and influence how and when we use health care including health behaviours, living and working conditions, personal resources and environmental factors.
- **Health System Performance** lies below determinants of health and includes indicators that measure how well health care services are delivered, in terms of the areas of acceptability, accessibility, appropriateness, competence, continuity, effectiveness, efficiency and safety.
- The last tier, **Community and Health System Characteristics**, includes indicators measuring less direct determinants of health status in three domains: community, resources, and health systems.

This framework is well accepted nationally and internationally, and has informed the development of other frameworks, such as the Health Information Framework. Interior Health adapted the framework to place “Community and Health System Characteristics” at the top of the framework, and adding populations and settings lenses.

3.2 World Health Organization Frameworks

Building on its Conceptual Framework for Action on the Social Determinants of Health,⁴⁷ the World Health Organization (WHO) has developed a number of resources for developing indicators, including the *Simplified Schematic Framework* for developing health disparities indicators, and *Towards a Comprehensive National Health Equity Surveillance Framework*.⁴⁸

The *Simplified Schematic Framework* is organized by activity (intervention, analysis and measurement) and level of analysis (from societal, through social and physical environment, population group, to the individual level). Each level indicates points of possible intervention to reduce disparities, so covers key dimensions of a health disparity indicator system.⁴⁹

In addition to the framework, WHO provides standards for a minimum health equity surveillance system, and a comprehensive national health equity surveillance framework. At a minimum, WHO recommends:⁵⁰

- Basic data on mortality and morbidity, by socio-economic and regional groups;
- Basic health equity data that are nationally representative and comparable over time;
- Health outcomes that include:
 - Mortality: infant mortality and/or under 5 mortality, maternal mortality, adult mortality and LEB
 - Morbidity: at least three nationally relevant morbidity indicators, such as prevalence of obesity, diabetes, under-nutrition and HIV
 - Self-rated mental and physical health
- Measures of inequity, with sex, at least two social markers (e.g. education, income, occupational class, ethnicity/race), at least one regional marker (e.g. rural/urban; province), at least one summary measure of absolute health inequities between social groups, and one summary measure of relative health inequities between social groups; and
- Good-quality of data on the health of Indigenous Peoples should be available, where applicable.

The Comprehensive National Health Equity Surveillance Framework builds on the minimum standards in measures of health inequities, health outcomes, determinants (including stratified data on daily living conditions, health behaviours, physical and social environment, working conditions, health care, social protection and structural drivers of health inequity), and the economic and social consequences of ill-health.⁵¹

WHO has developed a set of internationally applicable health indicators, used in its annual *World Health Statistics* reports, the most recent of which cited 100 indicators.⁵² Only three indicators focus specifically on health inequity (births attended by skilled health personnel; measles immunization coverage among 1-year-olds, and under-five mortality rate). However, data are disaggregated by gender, age, urban/ rural setting, wealth/assets, and educational level. The WHO equity indicators have been criticized because they are scant on determinants of health inequalities and are heavily weighted toward health systems and coverage, with a focus on developing countries.⁵³ As such, they may have limited applicability as health disparities indicators for Canada.

3.3 Organization for Economic Co-operation and Development Report

In 2011, the Organization for Economic Co-operation and Development (OECD) issued its 50th report of indicators on health and health systems across 34 member countries.⁵⁴ The framework underlying its report assesses the performance of health care systems in the context of a broader view of public health, that is, to improve the health status of the population. While noting the contribution of health care systems to the health of a population, it recognizes the many factors outside health care systems that influence health status, including the social, economic and physical environment in which people live, and individual lifestyle and behavioural factors. The 72 indicators used each year include the degree of access to care and the quality of care provided.

Indicators are organized under (1) health status (life expectancy, mortality, disease incidence, etc.); (2) non-medical determinants of health (modifiable lifestyles and behaviours such as smoking, alcohol drinking, and overweight and obesity problems); (3) health workforce (e.g. the supply and remuneration of doctors and nurses); (4) health care activities (consultations with doctors, supply and use of diagnostic technologies, availability of hospital beds, average length of stay, etc.); (5) quality of care, as summarized through comparisons on selected indicators of care for chronic conditions, mental disorders, cancers and communicable diseases; (6) access to care (self-reported unmet needs for medical and dental care, financial, geographic and timely access); (7) health expenditure and financing (how much OECD countries spend on health, both on a per capita basis and in relation to Gross Domestic Product (GDP), and a focus on pharmaceutical costs). The 2011 report also included a special focus on long-term care. An advantage of the OEDC report is the international comparability of data.

3.4 The Marmot Review (England)

Building on his extensive work in health equity, Sir Michael Marmot most recently released *Fair Society, Healthy Lives*, a strategic review of health inequities in England, post-2010.⁵⁵ It reviews progress on the national health inequalities targets set in 2001, to reduce inequalities in health outcomes in infant mortality and life expectancy by 2010. An update in 2004 provided more detailed objectives around these two targets. In addition, systems are in place at the national and local levels to monitor a range of targets and national indicators to support the broader health and social exclusion agenda.

The framework of indicators to assess performance improvement in delivering the review recommendations is built around six policy objectives:

- Give every child the best start in life;
- Enable all children young people and adults to maximize their capabilities and have control over their lives;
- Create fair employment and good work for all;
- Ensure healthy standard of living for all;
- Create and develop healthy and sustainable places and communities; and
- Strengthen the role and impact of ill health prevention.

Further information about the specific indicators is provided below (*Section 5.3.2, England*).

3.5 New Zealand Health Strategy

Note: While this framework was established in 2002, it is included in this scan, primarily due to a recent report on the health of Pacific Peoples (2011).

An explicit goal of the New Zealand Health Strategy is to reduce health disparities within its population by (among other things) improving the health of Māori and Pacific peoples, and other low-income groups.⁵⁶ To help meet that goal, New Zealand has a well-established, whole-of-government approach

to monitoring health, including indicators of health inequalities. Health indicators are stratified by socioeconomic position, ethnic identity, place of residence, and gender.⁵⁷

The New Zealand approach is governed by a framework, established in 2002, to be used by all levels of government. It is guided by four routes to health:⁵⁸

1. **Structural** – tackling the root causes of health inequalities, that is, the social, economic, cultural and historical factors that fundamentally determine health.
2. **Intermediary pathways** – targeting material, psychosocial and behavioural factors that mediate the impact of structural factors on health.
3. **Health and disability services** – undertaking specific actions within health and disability services.
4. **Impact** – minimizing the impact of disability and illness on socioeconomic position.

Annual reports from the Ministry of Health measure the health of New Zealanders against 71 indicators of health status and system performance.⁵⁹ A recent report focused on the health of Pacific Peoples.⁶⁰ While it notes difficulties in obtaining data on its Aboriginal Peoples, the report cites a number of initiatives directed at filling that gap. The *Pacific Health Chart Book 2004* details the health of Pacific Peoples, through health outcomes, service use, exposure to health risk factors, determinants of health, and “indicators to allow Pacific peoples’ progress to be monitored.”⁶¹ Other studies provide information on immunisation uptake, oral health, antenatal care experience, and the economic impact of traditional gift giving.

Additional measures of health disparity are provided through New Zealand’s social indicator system, including sets of data from: Sustainability Indicators, Regional Indicators, Big Cities Quality of Life, Housing Indicators (measures of housing standards), and Cultural Indicators.⁶² Data is also provided through poverty indicators, ethnic-specific indicators, gender-specific indicators and life-stage indicators for children, youth, and seniors.

3.6 POWER Study - Gender and Equity Health Indicator Framework

The POWER Gender and Equity Health Indicator Framework locates gender as a central element that shapes and is shaped by all other health domains.⁶³ The framework is based on:

- A holistic definition of women’s health including emotional, social, cultural, spiritual, physical, political, economic and biological aspects;
- The social determinants of health, as important drivers behind women’s health;
- The distinction between “sex” (biological differences between men and women) and “gender” (the differences associated with societal roles and the context of women’s lives); and
- Equity - central to the framework.

The framework identifies over 265 indicators, including: access to health services (11); burden of illness (21); cancer (32); cardiovascular diseases (60); depression (11); diabetes (35); HIV (28); musculoskeletal disease (37) and reproductive and gynaecological (30) indicators.⁶⁴ Input from women's health stakeholders across Ontario was instrumental in selecting indicators and identifying priority areas for reporting.

3.7 The Integrated Life Course and Social Determinants Model of Aboriginal Health

Aboriginal People have been identified as a priority group for addressing the social determinants of health in Canada.^{65, 66, 67} While the availability of comprehensive data continues to be problematic,^{68,69} a framework has been developed to better understand the relationships between social determinants and health across the life course for Aboriginal Peoples. The *Integrated Life Course and Social Determinants Model of Aboriginal Health* argues that Aboriginal peoples are affected "distinctly, as well as differentially" by the influence of social determinants of health.⁷⁰ This framework assesses determinants of health as its distal (e.g. historic, political, social and economic contexts), intermediate (e.g. community infrastructure, resources, systems and capacities), and proximal (e.g. health behaviours, physical and social environment) components. It includes dimensions of physical, emotional, mental and spiritual health among Aboriginal children in a sphere-shaped framework that reflects the multi-dimensionality of each domain of health and its social determinants, and the interrelatedness of the domains. The authors note that this model "reflects the complex and dynamic interplay of social, political, historical, cultural, environmental, economic and other forces that directly and indirectly shape Aboriginal health."

3.8 Results-Based Logic Model for Primary Health

While the Results-Based Logic Model for Primary Health is not a framework per se, it introduces concepts that are relevant to producing a set of indicators that are sensitive to the complex needs of vulnerable populations. As part of a larger study that examined the delivery of primary health care (PHC) services to people who are severely impacted by systemic inequities, researchers in British Columbia examined whether current indicators of care are: (1) sensitive enough to detect inequities in processes or outcomes of care, particularly for vulnerable groups or (2) adequately capture the complexity of delivering PHC services across diverse population groups.⁷¹ The research was conducted in partnership with two Urban Aboriginal Health Centers located in two different inner cities in Canada (exact locations not noted).

While preliminary, the results indicate that current PHC indicators do not fully capture the input (e.g., stability of funding sources) and outputs (e.g., whole person care) in ways that can lead to incremental improvements in health or quality of life for people whose health is also affected by systemic and structural inequities. The researchers suggest that for people living in poverty, without stable or safe housing, reliable sources of food, on-going violence or severe mental health and/or substance use issues, "current measures may not be immediately relevant or adequate to capture the scope of care required and being provided."⁷² Wong et al suggest that work is needed to: (i) modify existing indicators relevant to measuring PHC services that are aimed at addressing issues of equity, and (ii) develop new

indicators that are sensitive to change, given the complexities inherent in PHC delivery to vulnerable populations.

The report provides a logic model⁷³ and concrete, practice-based examples of modifications to the Pan-Canadian PHC Indicators⁷⁴, to focus more on achieving health equity. One of the goals of the research was to provide recommendations relevant to developing and modifying PHC indicators to better reflect the needs of vulnerable populations.

3.9 Deprivation Indices

A number of reports and jurisdictions in Canada and internationally are using deprivation indices as part of their work to monitor health inequities.

The Institut national de santé publique du Québec (INSPQ) Deprivation Index, published by Robert Pampalon and Guy Raymond,⁷⁵ has been used by the Canadian Population Health Initiative and the Urban Public Health Network,⁷⁶ and is being incorporated into health equity work in the provinces of Alberta,⁷⁷ Saskatchewan's Saskatoon Health Region, and Nova Scotia,⁷⁸ in addition to Quebec.

Advantages of the Deprivation Index are that it incorporates both material and social factors, and allows data to be presented for small geographical areas.⁷⁹ The index uses six variables that are closely related to health and social concerns:

- the proportion of people who have not graduated from high school;
- the ratio of employment to population;
- average income;
- proportion of persons who are separated, divorced or widowed;
- proportion of single-parent families; and
- proportion of people living alone.

Canadian (CAN-Marg) and Ontario Marginalization Index (ON-Marg) – Both the Canadian and Ontario Marginalization Indices are census-based, geographically derived indices that highlight inequalities in various measures of health and social well-being, either between population groups or between geographical areas.⁸⁰ They use 18 census tract measures to describe the socioeconomic and demographic character of the census tract.⁸¹ The indices have proven stable across time periods and different geographic areas (e.g., cities and rural areas). CAN-Marg has been found to be associated with health outcomes including hypertension, youth smoking, alcohol consumption, injuries, body mass index and infant birth weight.

The indicators used in both the ON-Marg and CAN-Marg are:

- residential instability (living alone, youth 5-15 years, persons per dwelling, living in an apartment building, married, home owner, moved within last 5 years);

- deprivation (education, employment, lone-parent families, receiving government assistance, LICO, homes needing major repair);
- dependency (child or old age, labour force participation); and
- ethnic concentration (recent immigrants, visible minorities).

VANDIX Index:⁸² Another index of interest is the Vancouver Area Neighbourhood Deprivation Index (VANDIX), developed by geographers at Simon Fraser University as a way to identify key socio-economic indicators of relative health outcomes within greater Vancouver. Developed with the assistance of Medical Health Officers in the province, it includes average income, home ownership, single parent families, no high school degree, people with university degree, employment ratio and unemployment rate. An analysis of VANDIX found it to be comparable to other Canadian indices, and well-correlated with self-reported health status from the Canadian Community Health Survey.⁸³ However, it was found to reflect material deprivation more than social deprivation, as opposed to the INSPQ index.

The governments of New Zealand (NZDep 2006),⁸⁴ Australia, England,⁸⁵ Northern Ireland,⁸⁶ Scotland⁸⁷ and Wales⁸⁸ also use indices of deprivation, to assist in efforts to address health equity.

3.10 Canadian Index of Well-Being

The Canadian Index of Wellbeing (CIW) is the opposite of a deprivation index. It goes beyond economic measures like GDP, to assess quality of life, including standard of living, health, environmental quality, education and skill levels.⁸⁹ It aims to show the interconnections between areas and is therefore sensitive to issues relevant to health equity, for example, how changes in income and education are linked to changes in health. Its 'lens of wellbeing' is made up of indicators in the following domains: living standards, healthy populations, community vitality, democratic engagement, leisure and culture, time use, education and environment.

Within 'healthy populations', it measures infant mortality, life expectancy at birth, health-adjusted life expectancy, diabetes, depression, self-rated health, patient satisfaction with health services, population with a regular family doctor, smoking and influenza immunization among those aged over 65.

4.0 Criteria for Choosing Indicators

Given the wide range of frameworks and indicators available, it is important to establish guidelines and criteria for selecting those that will be implemented in British Columbia. The literature provides numerous examples of criteria, which are summarized below.

4.1 Guiding Principles

A number of factors may guide the development of health equity indicators, as identified by Etches et al. (2006):⁹⁰

- **The intended use of indicators** – To be useful, indicators must be designed to support provincial and regional health goals. They may be used in advocacy, accountability, system management, quality improvement and/or identification of research gaps. As such, the end-use of various indicators must be aimed at ensuring that the most appropriate measures are identified.
- **The underlying conceptual framework** – As shown above, a wide range of conceptual models exist, upon which indicators may be developed. Key levels and approaches whereby health equity may be influenced should be identified to guide development of the indicators.
- **Available data sources and systems** – Clearly, data must be available to be measured over time. Each of the indicators summarized in Appendix D is available in British Columbia, with any limitations noted (e.g. for Aboriginal Peoples or sporadic data sources). Ongoing availability, and the quality of data, may influence the choice of indicators, motivate their refinement or encourage the development of new ones.

Given the focus on health equity, a Scottish framework suggests assessing potential indicators for:⁹¹

- Reasonable completeness and accuracy of reporting;
- Clear relevance to known social determinants of health;
- Reversibility and sensitivity to intervention;
- Avoidance of reverse causation;
- Statistically appropriate methods of data analysis and depiction; and
- Clarity of meaning for non-scientists.

It is recommended that multiple socio-demographic variables be collected to reflect the complexity of the society in question, and to enable appropriate interpretation of the data.⁹² A review of the literature found the following indicators to be “most strategic”: race, ethnicity, language and SES.⁹³ However, indicators should be chosen that are specific to the health entity’s priorities and mandate.

4.2 Criteria

Many of the indicators cited later in this report are based on criteria established during their development. Criteria for the following sets of indicators developed in Canada were reviewed:

- *Measuring Population Health: A review of indicators*, V. Etches et al⁹⁴
- *Selecting indicators for measuring health inequities*, National Collaborating Centre for Determinants of Health (2012)⁹⁵
- *Indicators of Health Inequalities Workshop*, Population Health Promotion Expert Group (2009)⁹⁶
- *Third Consensus Conference on Health Indicators*, Statistics Canada (2009)⁹⁷
- *Measuring Equity of Care in Hospital Settings: From Concepts to Indicators*, St. Michael's Hospital, (2009)⁹⁸
- *Growing up in BC*, Representative for Children and Youth of British Columbia (2010)⁹⁹
- *Technical Report 1.0*, The Canadian Index of Wellbeing. (2011)¹⁰⁰
- *Office of the Provincial Health Officer Child Health and Well-being Indicators Project: Revised Health and Well-being Framework and Indicator Selection Criteria (2010)*¹⁰¹

A number of common elements emerged from among the eight sets of criteria reviewed. Agreement on a particular set of elements by six or more of the eight sets of criteria is noted in **bold text** below. (See *Appendix E* for a comparison of criteria):

- **Valid**
- **Feasible**
- **Understandable**
- **Reliable**
- **Comparable**
- **Relevant**
- Sensitive
- Timely
- Developed through consensus
- Based on a framework
- Specific
- Actionable
- Based on available data

Other criteria mentioned include flexibility (for use at different organizational levels); adaptability; and comprehensiveness (wide enough in scope to capture the organizational definition of well-being).

4.3 Recommendations for Disadvantaged Populations

The BC Healthy Living Alliance reviewed the literature and sought expert opinion on actions that can be taken to alleviate health inequities in British Columbia.¹⁰² From the eleven recommendations they made, the following fall within the scope of the health care system, and so would require indicators to measure progress:

- health promotion programs for specific, disadvantaged populations;
- rate of Aboriginal representation in the health care workforce (FTE, management positions and professional workplaces);
- accessibility of language training programs to enable immigrant employees to upgrade their English language skills;
- community support provided to immigrants to improve their integration and chances for success in British Columbia;
- the identification and treatment of mental health issues for refugees;
- prevention, promotion and early intervention programs for mental health/illness and addictions spectrums across the lifespan; and
- continuity, integration and information sharing of mental health care across the Ministry.

5.0 Indicators in Use or Proposed

Having reviewed a number of indicator frameworks and criteria for the selection of indicators, it is useful to review sets of indicators in use internationally, in Canada and in British Columbia. They are described briefly below. A detailed table, found in *Appendix E* compares major sets of indicators that may be relevant to the context in British Columbia. Those included in the table are noted with an asterisk.

5.1 Canada-Wide Indicators

5.1.1 Pan-Canadian Public Health Network, Indicators of Health Inequalities*

The Pan-Canadian Indicators of Health Inequalities are the product of the Population Health Promotion Expert Group (PHPEG) of the Public Health Network (PHN) Council.¹⁰³ The Integrated Pan-Canadian Healthy Living Strategy (PCHLS), which also reports to the PHN through the PHPEG, has the mandate to improve health outcomes and to reduce health disparities. To support the work of both the PHPEG and the PCHLS, the Indicators Joint Working Group was formed in 2008, to develop indicators of inequalities in health status and of inequalities in the determinants of health. The indicators they proposed in a 2009 report are based on the World Health Organization (WHO) Commission on the Social Determinants of Health (CSDH) comprehensive national health equity surveillance framework.¹⁰⁴

The indicators they proposed were developed through a number of consensus conferences, grouped as either indicators of “inequalities in the determinants of health” or indicators of “inequalities in health status.” The group also identified indicators 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”), but felt this area was beyond the scope of their process.

The indicators are short-listed, as follows:

- Inequalities in health status, including mortality, early childhood development, mental illness, morbidity and disability, self-assessed physical and mental health, cause-specific outcomes;
- Inequalities in health determinants, including:
 - Daily living conditions (health behaviours, physical and social environment, working conditions, health care, social protection); and
 - Structural drivers - social inequities and socio-political context.

5.1.2 Canadian Population Health Initiative (CPHI)*

To produce *Reducing Gaps in Health: A Focus on Socio-Economic Status in Urban Canada*,¹⁰⁵ CPHI worked with the Urban Public Health Network (UPHN), Institut national de santé publique du Québec (INSPQ) and Statistics Canada, to explore the links between SES and health in Canada's cities. They used income and deprivation measures, at the level of neighbourhoods or "dissemination areas" (DA) – the smallest geographic area for which census data is available in all provinces and territories in Canada. Income was measured using low-income cut-off (LICO) data. Deprivation was measured using the INSPQ Deprivation Index developed by Pampalon and Raymond, described above.

Hospitalization rates and self-reported health were analyzed by SES group (high, average and low). Hospitalization measures included low birth weight; ambulatory care sensitive conditions; diabetes; chronic obstructive pulmonary disease; asthma in children; various types of injuries and various mental health and substance use issues. Self-rated health focused on behavioural measures (physical activity, smoking, alcohol); overweight or obesity; influenza immunization (ages 65 and over); and activity limitation (ages 65 and over).

5.1.3 Healthy Canadians - A Federal Report on Comparable Health Indicators 2010

Healthy Canadians reports have been issued every two years since 2002. The indicators reported measure health system performance and health status as part of the federal government's commitment to improve accountability and reporting to Canadians. The indicators do not focus on equity, but among the 52 indicators chosen for the 2010 report are measures of health system access, quality and sustainability. Health status is reported through 32 measures. No measures of health determinants are used within this index.

5.1.4 Measures Specific to First Nations

The *Integrated Life Course and Social Determinants Model of Aboriginal People's Health* model includes dimensions of mental, physical, emotional and spiritual health. The authors of this model propose indicators based on common sources, such as the Aboriginal Peoples Survey (2001), the First Nations Regional Longitudinal Health Survey (2002-2003), and measures of the Canadian population, such as the Canadian Community Health Survey. Indicators proposed include a variety of health conditions that measure both physical health (e.g. asthma, allergies and bronchitis for children and youth; and arthritis, high blood pressure, diabetes and BMI for adults) and mental health (learning disability and "feeling sad, blue or depressed for 2 weeks or more" for children, and a major depressive episode for adults). Also included are health behaviours (smoking, smoking during pregnancy and living in a smoke-free home); physical environments (crowded dwellings and those requiring repairs); various measures of income; education; prevalence of food insecurity; and health care utilization and access, including barriers to accessing health services.

In Saskatchewan, the Community Health Indicators Toolkit was developed under the First Nations Health Development Project.¹⁰⁶ It includes the following domains and the number of indicators in each:

1. Economic viability (30)
2. Environment (14)
3. Identity and culture (39)
4. Food security (16)
5. Services and infrastructure (99)
6. Healthy lifestyles (27)

5.2 Measures used Elsewhere in Canada

5.2.1 Quebec*

Quebec has issued five reports on the health of its residents: *Portrait de santé du Québec et de ses régions*, along with accompanying reports to help guide policy and action to improve Quebecer's health.¹⁰⁷ The most recent report (2011) presents the health of the population according to 13 themes related to the determinants of health. A total of 180 indicators assess health according to:

1) demographic conditions; 2) socioeconomic conditions; 3) health overall; 4) health of mothers and toddlers; 5) lifestyle; 6) chronic diseases; 7) oral health; 8) infectious diseases; 9) physical environment; 10) health at work; 11) unintentional injuries; 12) mental health; and 13) social environment. The report also highlights particular vulnerabilities associated with age and gender, as affected by socioeconomic conditions where possible.ⁱⁱⁱ One page summaries are available of the health status of residents in each of 18 regions of Quebec, according to a selection of 99 key indicators of health.¹⁰⁸

City of Montreal

The City of Montreal has been tracking the health of its residents according to determinants of health since 1998. The most recent report, *Social Inequalities in Health in Montréal 2011: Progress to Date*¹⁰⁹ reviews the situation since then, when Montréal's first annual report noted a 10-year difference between the average life expectancy of men living in disadvantaged neighbourhoods compared with those in wealthy areas. The analyses measure health disparities by income (five quintiles), according to measures for health status, service use, birth, cause of death, etc.

ⁱⁱⁱ Please note that these terms do not come from an official translation of *Portrait de santé du Québec et de ses régions*, which is not available in English at this time. The indicators were translated by the author of this report.

5.2.2 Ontario*

Ontario's Ministry of Health and Long-Term Care has developed a performance management system for public health to measure local and provincial performance, accountability and sustainability.¹¹⁰ Its *Initial Report on Public Health* is designed to reflect the current state of Ontario's public health system through 34 indicators. The indicators measure two areas:

1. Population health, including indicators such as teen pregnancy, low birth weight, breastfeeding, smoking prevalence, alcohol consumption, physical activity, BMI, nutrition, falls, respiratory infection outbreaks in long-term care homes, Chlamydia incidence, immunization coverage (Hepatitis and MMR) and adverse water quality incidents; and
2. Governance and accountability measures cover financial performance, employment statistics and training, public reporting and planning, and management performance.

At this point, the indicators do not link directly with requirements or outcomes in the Ontario Public Health Standards.

City of Toronto

Toronto's report, *An Unequal City: Income and Health Inequalities in Toronto* (2008), focuses on differences in health due to income.¹¹¹ The report uses a mix of health outcomes and health-related behaviour measures, noting that it can take decades to notice changes in health outcomes, while changes in health-related behaviours can be seen in a shorter timeframe. The fifteen key indicators of health inequality by income include life expectancy at birth, premature mortality, self-rated health, low birth weight, readiness to learn, teen pregnancy, smoking, physical inactivity, overweight/obesity, disease measures (lung and breast cancer, CVD, Chlamydia, gonorrhoea) and dental visits.

The selected health behaviours were chosen because they relate either directly or indirectly to health outcomes and are felt to be modifiable through a combination of individual, legislative, structural or collective action. The indicators themselves were selected based on their use by other jurisdictions to describe and/or monitor health inequality; the availability of data at the census tract level in Toronto; and their relevance to overall health in Toronto.

Toronto Central Local Health Integration Network*

In 2009, the Toronto Central Local Health Integration Network (TC-LHIN) required hospitals to begin reporting on equity initiatives. To support that effort, St. Michael's Hospital's Centre for Research on Inner City Health (CRICH) and the Hospital Collaborative on Marginalized Populations examined approaches to measure equity of care in the hospital setting.¹¹² They identified ten indicators as appropriate for Toronto hospitals to systematically measure and monitor equity of care. Seven indicators measure equity of hospital care and three indicators are specific to TC-LHIN priority populations: people with mental illness (length of physical restraint use among patients with mental illness), the elderly (pressure ulcer rate) and people with diabetes mellitus (lower extremity amputations among patients with diabetes).

Of the indicators of equity in hospital care, two measure cultural competency (cultural concordance between patients and staff, and accessibility of language services). Five assess quality of care (patient satisfaction, perforated appendix rate, minimally invasive cholecystectomy rate, use of analgesics for pain management, and rate of death within 30 days of hospital admission for acute myocardial infarction).

An evaluation reported on the responses of 18 Toronto hospitals to an equity 'template' each hospital must complete.¹¹³ The template seeks information on what hospitals are doing to address health inequities, probing action on access, service gaps and challenges, priority setting and planning, promising practices, policies, procedures and standards, governance, targets and measurement, communications and potential roles for the TC-LHIN .

An early 'quick win' noted in the evaluation is that the process of completing the plans has helped put a focus on equity in planning efforts within the hospitals, particularly since CEOs and Board Chairs have to sign off on the equity plans.

Other themes coming directly from the evaluation are:¹¹⁴

- Hospitals are already doing a lot to address problems of health inequities.
- Hospitals put considerable thought and effort into developing the hospital health equity plans.
- The process of completing the template helped bring coherence to the efforts of hospitals.
- Hospitals are quite varied in terms of their practices, capacities, information about equity and the nature of the issues they face, making it challenging to develop a standardized performance system for all hospitals.
- TC-LHIN has an important role in translating provider plans into a system-wide response to health inequities, including defining success at the hospital and health care system levels, and promoting coordinated actions and accountability, chiefly through accountability agreements.
- TC-LHIN plays a crucial role in the development of a performance measurement and management system for health equity for both hospitals and community providers. In the near term, hospitals are looking to the TC-LHIN to help them incorporate health equity measurement into existing performance measurement and management processes.

Sudbury and District*

The Sudbury and District Health Unit prepared a health status report in 2008, with a particular focus on the links between the certain dimensions of the determinants of health.¹¹⁵ The report highlighted indicators including general health status (mortality, life expectancy, morbidity, self-rated health); maternal and child health (birth rates, infant mortality, low birth weight infants, teen pregnancy, breastfeeding); children's dental health; health behaviours (use of tobacco and alcohol, student substance use, overweight and obesity, physical activity, nutrition, sun safety) sexual health; injury; chronic diseases (cardiovascular disease, high blood pressure, cancer, diabetes, asthma, chronic obstructive pulmonary disease); early detection of cancer (cervical, breast and colorectal screening); influenza immunization; sexually transmitted and blood-borne infections (chlamydia, hepatitis B and C, gonorrhoea, HIV/AIDS); food and water-borne infections (campylobacteriosis,

salmonellosis, giardiasis) and environmental health (air quality, drinking water quality, recreational beach water quality, West Nile virus, pesticide use, rabies). Where possible, it compared local rates with those reported for Ontario as a whole.

Health indicators were analyzed according to demographic and SES data, including age and gender, income and place of residence (districts within the health unit).

5.2.3 Manitoba*

A report prepared by the Manitoba Centre for Health Policy assessed whether the health inequities among Manitobans were widening over time.¹¹⁶ The report looked at the methodology used to quantify inequality and analyzed existing inequality between socioeconomic groups. An Advisory Group identified 18 indicators to assess health status, healthcare use and educational outcomes. The indicators included mortality, physical and mental health of children and adults, educational outcomes, primary care, prevention, quality of care and pharmaceutical use. The Advisory Group specifically chose not to analyze indicators such as physician use or hospital use because they felt it was difficult to determine whether or not differential use is justified.

The measures used to determine whether there were gaps, and if they were changing over time were disparity rate ratios (DRRs), disparity rate differences (DRDs), comparing both of these over time, comparing within and between urban and rural neighbourhood income quintile groupings, and using Lorenz curves and Gini coefficients.

5.2.4 Alberta

The province of Alberta has recently embarked on a strategy to promote health equity. They have developed a draft strategy, with the approach of using “collaborative action on the social determinants of health through organizational leadership and multi-sectoral stewardship.”¹¹⁷ They, too, are starting with the step of embedding health equity strategies across the continuum of care. They have also identified a number of stakeholders with whom to collaborate, including Primary Care Networks, other government departments, and the private, voluntary and non-profit sectors. A “Material Deprivation Index” for Alberta is being developed, based on the INSPQ Index by Pampalon and Raymond (2009).

City of Edmonton

The City of Edmonton built on the report of CPHI and UPHN (*Reducing Gaps in Health: A Focus on Socio-Economic Status in Urban Canada*),¹¹⁸ producing a local report that provides a more detailed pictures of health inequalities in Edmonton.¹¹⁹ They used similar indicators as are outlined in the CPHI report (See section 5.1.2), with the addition of a number of vital statistics and demographic indicators. Additions from vital statistics databases included preterm birth rate, teen birth rate, infant mortality rate, mortality rates (both all-cause and specific causes) and life expectancy. Demographic indicators were chosen from the 2001 Federal Census, and included percentage of Aboriginal population; recent and longer-standing immigrants; people living alone [all ages and those older than age 65]; incidence of

low income and low income among children 0-5 years of age; percentage of lone-parent families and children living in lone-parent families; percentage of those with a bachelor's degree or higher; and percentage of households that own the dwelling.

5.2.5 Nova Scotia

In 2007, Nova Scotia undertook a multiple deprivation mapping project, based on community rather than individual-based deprivation.¹²⁰ It was carried out as an exploratory study to identify what available data could be used to describe major aspects of deprivation associated with health. It is unknown whether the project continued.

After reviewing a range of possible deprivation indices, six variables were chosen, very similar to those developed by INSPQ (Pampalon and Raymond). The statistical method varied somewhat, with Nova Scotia using indirect standardization, rather than the direct standardization method used in Quebec.

5.2.6 Provincial Comparisons

Not all provinces are using indicators of health inequity. However, the University of Regina has created provincial health system report cards that compare provinces based on 24 indicators of population health and 34 indicators of health system performance, including 5 indicators of 'equity' (smoking rates, physical activity rates, doctors' visits per year, health utilities index and health versus one year ago).¹²¹ The data for the calculations are from the Canadian Institute of Health Information Health Indicators, Canadian Community Health Survey and other nationally comparable data. The population health indicators include behaviours, chronic conditions, social factors (community belonging, stress, life satisfaction and self-rated physical and mental health), health system utilization and death rates. Health system performance indicators include prevention/promotion programs, wait times, access to care, appropriateness/efficiency, quality of care, "patient's voice," and the five measures of equity.

5.2.7 Processes to Introduce Health Equity Indicators Across Canada

Jurisdictions at various levels – provincial, regional and municipal – have identified or are in the process of developing health equity indicators in Canada. They are using somewhat different approaches and scopes of influence as they proceed. Here is a snap-shot of what is currently taking place across Canada (*Please note: This is not an exhaustive review, but examples of activities and approaches being used.*)

Jurisdiction	Geographic Scope	Reach
Nova Scotia	Province-wide	First Provincial Health Status report is under development, with a health equity lens applied
Capital Health	Regional	Nova Scotia is divided into nine District Health Authorities, with public health integrated into each DHA. Capital Health is in the process of developing health equity indicators around three priority issues: alcohol, obesity and mental health. The process is led by public health, working with community partners.
Quebec	Province-wide	Health-system wide indicators have been tracked for five years. Public health was integrated into regional <i>Centres de santé et services sociaux</i> , which include hospitals, community health centres and long-term care facilities, in 2005.
<ul style="list-style-type: none"> City of Montreal 	Municipal	Public Health in Montreal has tracked health equity among its population since 1998.
Ontario	Province-wide	<i>Excellent Care for All Act</i> ¹²² embeds equity as a key principle. Act is being applied first to hospital settings, then other aspects of the health system.
<ul style="list-style-type: none"> Public health regions, such as Sudbury, Peel 	Health regions	Health equity is a key feature of public health reporting.
<ul style="list-style-type: none"> Municipalities, such as Toronto 	Local Health Integration Networks	LHINs are responsible for delivering health services in 14 regions across Ontario, including hospitals, community care, community support services, community mental health and addictions, community health centres and long-term care.
Winnipeg	Health Region	Winnipeg Health Region is in the process of applying a health equity lens health-system wide, working with a number of community partners, as well as internally to insert consideration for health equity into all operational decision making (planning, finance, logistics and human resources). A Directional Working Group is researching local health equity status and making recommendations for best practice interventions.

Jurisdiction	Geographic Scope	Reach
Saskatoon	Health Region	In Saskatoon, public health has taken a leadership role in addressing health inequity, working through a broad Regional Intersectoral Committee. The committee had representatives from four municipal departments, seven provincial ministries, two federal agencies, researchers, Aboriginal organizations and a dozen community- based groups.
Alberta	Province-wide	Public Health is leading a provincial effort to introduce health equity measures into all aspects of Alberta Health Services. They are taking a broad approach and introducing community partners from the outset.

5.3 Measures used Internationally

5.3.1 United States*

While some states in the US appear to have a fairly well-established method of measuring and monitoring health inequities (See Michigan and Connecticut, below), there is no nationally gathered set of inequity criteria. Data that are gathered focuses primarily on race, with ethnicity also considered.¹²³ The State of the USA committee (SUSA) recently recommended 20 indicators for use, based on three health determinants: the health outcomes, health-related behaviours and health systems, as follows:¹²⁴

- **Health outcomes:** life expectancy at birth, infant mortality, life expectancy at age 65, injury related mortality, self-reported health status, unhealthy days, physical and mental, chronic disease prevalence, serious psychological distress
- **Health-related behaviours:** smoking, physical activity, excessive drinking, nutrition, obesity, condom use
- **Health systems:** health care expenditures, insurance coverage, unmet medical, dental, and prescription drug needs, preventive services, preventable hospitalizations, childhood immunization.

The SUSA committee recommends that for each of these indicators, disparities should be explored by socioeconomic status, race/ethnicity, and geographic region.

State of Michigan

In 2006, the State of Michigan passed into law a requirement that the State “develop and implement a structure to address racial and ethnic health disparities.”¹²⁵ Since then, it had developed a Health Equity Roadmap to improve the health status of racial and ethnic populations. It aims to stimulate coordinated,

multi-sectoral efforts among government, healthcare and community partners for programs, strategies and health policies that address disease prevention, health service delivery and applied research. It also focuses on integrating culturally appropriate and linguistically appropriate health services into the public health system.

A recent recommendation (2010) to implement its mandate is for improved data collection and accessibility of race, ethnicity and preferred language information. It also recommends the establishment of a health equity data set to include indicators for social and economic conditions; environmental conditions; health status, behaviours and healthcare; and priority health outcomes to monitor health equity for racial and ethnic minority populations in Michigan.

State of Connecticut*

The State of Connecticut makes a Health Equity Index available to communities, to profile and measure the social determinants of health.¹²⁶ The Index, introduced in 2012, is the first such tool in the US. It provides measures of the social, political, economic and environmental conditions, generating community-specific scores and GIS maps. The Index provides community-specific scores on seven social determinants of health (civic involvement, community safety, economic security, education, employment, housing and environmental quality) and thirteen health outcomes (specific diseases, childhood illness, mental health, health care access, life expectancy, perinatal care and accidents/violence). It also provides correlations between the indicators and GIS maps that illustrate community-specific scores.

5.3.2 Europe

The European Community Health Indicators (ECHI) have been under development since 1994 to provide valid and comparable data throughout the EU for monitoring the health of Europeans.¹²⁷ The short-list of indicators currently numbers 88, with about half of them currently implemented. No overriding framework appears to guide the work; however, the following criteria determine what indicators are to be included in the 'short-list':

1. importance for overall health status and major health problems at population level;
2. strength of evidence for inequalities in health; and
3. importance for effective interventions and health policies.

The current list of indicators is divided according to:¹²⁸

- demographic and socio-economic factors;
- health status;
- determinants of health; and
- health interventions: health services.

A wide range of online resources support the use of the indicators. The European Portal for Action on Health Inequalities¹²⁹ provides WHO interactive atlases on health equity in Europe; the Heidi data tool, which presents relevant and comparable information in an interactive format; access to Eurostat, the statistical office of the European Union; and I2SARE, which provides health profiles for each region of the European Union. A number of other projects and resources are linked to this central portal.

Both individual and composite indicators are provided to measure associations between SES/factors and health indicators, and show absolute and relative inequities among regions. Results can be exported to the most common formats, and displayed in line charts, bar charts, maps or tables.

England

As described above (Section 3.4), England follows the framework and process for measuring and monitoring health inequities established in the “Marmot Review” – *Fair Society, Healthy Lives*, a strategic review of health inequities in England, post-2010.¹³⁰

Each of the six policy objectives noted in the framework comes with a set of process, output and outcome indicators. The London Health Observatory provides an interactive website where communities can choose health indicators they wish to track from among 60 available, as best suits their needs.¹³¹ Indicators are available in the areas of employment; poverty and deprivation; housing and homelessness; education; crime; pollution and physical environment; community development; lifestyle, including diet, smoking and physical activity; access to local health and other services; accidents and injury; mental health; maternal, infant and child health; older people; and ‘tackling the major killers’.

The “Marmot Indicators for Local Authorities in England, 2012” are the following:

- Male and female life expectancy;
- Slope indices of inequality (SII) for male and female life expectancy;
- Slope indices of inequality (SII) for male and female disability-free life expectancy;
- Children achieving a good level of development at age 5;
- Young people who are not in education, employment or training (NEET);
- People in households in receipt of means-tested benefits; and
- Slope index of inequality for people in households in receipt of means-tested benefits.

Sweden

Sweden’s *Public Health Objectives Act* was passed into law in 2003, and remains one of the few in the world that is based on the determinants of health.¹³² It commits Sweden to “health equality among its population, irrespective of gender, class, sexual orientation, ethnic background or disability.”¹³³ Health is monitored across 11 domains, including structural and behavioural determinants, for a total of 83 indicators – 36 main indicators, and 47 sub-indicators (as of 2008).¹³⁴ Its latest Public Health Policy

Report (2010) identifies three priority areas and recommends the establishment of indicators for social sustainability, and a model to monitor socioeconomic inequalities in health.¹³⁵

Indicators are tracked through Sweden's Basic Public Health Statistics for Local Authorities system.

Generally, they are disaggregated by age group, gender, type of family, socioeconomic group, geographical level, and ethnicity where possible. The system allows for comparisons between municipalities, counties and the country as a whole.

In addition, a gender equality index, or EqualX, is used as an indicator of differences in rates for each variable between men and women.

5.3.3 New Zealand

The framework guiding the work on health inequities in New Zealand is described above (*Section 3.5*). The 71 indicators followed in its 2011 Annual Report are organized according to health status and health system performance. Health status indicators include mortality, cancer, CVD, disability, mental health, oral health, older people, child and youth health, non-communicable diseases and communicable diseases.¹³⁶ Health system performance is measured against health targets, quality (access, patient experience), and efficiency and productivity. Demographic and socioeconomic indicators measure gender, age and issues such as low income, education, unemployment, living circumstances (e.g. household crowding, no access to telephone and internet, no access to motor vehicle), and risk factors broken down by ethnic groups (Maori, Pacific, Asian, and European/ Other).¹³⁷

5.4 Indicators Being Used in British Columbia

The British Columbia Ministry of Health Vital Statistics Agency tracks hundreds of indicators for health status, following the World Health Organization's International Statistical Classification of Diseases and Related Health Problems (ICD-10) coding scheme.¹³⁸ Data tracked includes vital events (live and stillbirths, marriages, deaths) and death-related statistics (infant mortality, cause of death, potential years of life lost, deaths related to injury, alcohol, drug use, etc.). Statistical summaries, including gender, population, live births, deaths, marriages, stillbirths, average age, population and life expectancy are provided by Health Authority, Health Service Delivery Area, Local Health Area and Community.

A number of HAs use indicators specific to their regions, summarized in Appendix A. Several sets of health indicators are in use throughout British Columbia, including those outlined in this section.

5.4.1 BC Health Quality Matrix

The BC Health Quality Matrix (see Appendix F) is designed to support strategic planning, quality improvement program planning, measurement and evaluation of programs, facilities and health systems.¹³⁹ Its framework is based on five dimensions of quality (acceptability, appropriateness, accessibility, safety and effectiveness) within four areas of care (staying healthy, getting better, living with disease or illness and coping with end of life). Two additional dimensions of quality measure the performance of the health care services system as a whole: equity and efficiency. It defines equity as the “distribution of health care and its benefits fairly according to population need.”¹⁴⁰

The Matrix looks at quality from a number of perspectives: the individual patient/client, the population and the health system.

5.4.2 Early Development Instrument

The Early Development Instrument (EDI) was developed by the Human Early Learning Partnership (HELP) at the University of British Columbia. The questionnaire is completed by kindergarten teachers from across the province for all children in their classes, normally in February.¹⁴¹ It includes 104 questions dealing with:

- Social competence;
- Emotional maturity;
- Language and cognitive;
- Physical health and well-being; and
- Communication skills.

To date, four waves of the EDI have been conducted in British Columbia.¹⁴² The instrument is also being widely used across Canada, with 80% of children now being measured. At least one wave of results is available for over 2000 communities across Canada. In British Columbia, data from 2008/09 affirmed that 28.6% of children are vulnerable at the start of school. The developers believe that two-thirds of vulnerability is preventable, which would bring that figure down to 10%.¹⁴³

5.4.3 Middle Years Development Instrument

The Middle Years Development Instrument (MDI) is an optional self-report questionnaire completed by children in Grade 4, with teacher supervision.¹⁴⁴ The questionnaire includes 71 questions related to the five areas of development that are strongly linked to well-being, health and academic achievement:

- Social and emotional development;
- Connectedness;

- School experiences;
- Physical health and well-being; and
- Constructive use of after-school time.

Currently, the instrument is not being widely implemented.¹⁴⁵ The data and maps created with the results are designed to be used to inform policy and program development, based on a better understanding of the genetic, biological, and social determinants of children's health and development.

5.4.4 Representative for Children and Youth

Six dimensions of family and youth well-being are measured by the Representative for Children and Youth, with a focus on vulnerable children and youth.¹⁴⁶ Measures include those for health, learning, safety, family, peer and community connections, and behaviour. Indicators were chosen for data that is consistently available at acceptable levels over time, meets acceptable standards and, at a minimum, can be reported at a health region level. The rationale for using each of these measures, as well as sources of data, is described in the report, *Growing up in BC*.

5.4.5 Indicators for Aboriginal Health

The Provincial Health Officer for British Columbia has issued two reports on the health and well-being of Aboriginal people in British Columbia. The 2007 report analyzed a wide array of indicators, by Health Authority and Health Service Delivery area, including those related to:¹⁴⁷

- **health determinants** - educational attainment, unemployment rate, labour force participation, income, children in care;
- **healthy beginnings** – infant mortality, neonatal mortality, low birth weight, pre-term birth weight, stillbirth rate, teen pregnancy rate and dental surgery rates, by various age groups;
- **disease and injury** – HIV, all cancers and selected cancers, diabetes, circulatory and heart diseases, respiratory diseases, external causes (injury, suicide, alcohol, smoking and drug-related, etc.), and life expectancy;
- **physical environment** – housing; and
- **health services** – medical services plan utilization, preventable admissions to hospital, prescriptions (antimanic, anti-infectives, antidepressants, antipsychotics, antiolytics, cerebral stimulants); hospitalization rates (suicide/attempted suicides, homicide/attempted homicide); community follow-up for mental health clients.

The *Tripartite First Nations Health Plan* (TFNHP) outlines measures for monitoring health outcomes for First Nations people living in the province.¹⁴⁸ The Tripartite partners have agreed to measure and report on the following health indicators:

- Life expectancy at birth;
- Mortality rates (deaths due to all causes);
- Status Indian youth suicide rates;
- Infant mortality rates;
- Diabetes rates;
- Childhood obesity rates;
- The number of practicing First Nations health care professionals who are registered or otherwise accepted members of recognized health professions under the *BC Health Professions Act*; and
- Other additional indicators, including wellness indicators.

To support the implementation of new First Nations health governance, the *Tripartite Health Indicators Planning Committee* is working to develop a Health Indicators Framework and a set of recommended health indicators for the interim First Nations Health Authority. The indicators will be used to monitor progress in improving the health of First Nations people, as outlined in the *Transformative Change Accord: First Nations Health Plan*, the TFNHP and the *Tripartite Framework Agreement on First Nation Health Governance*.¹⁴⁹

5.4.6 Balanced Scorecard

The “Balanced Scorecard” is being used by Vancouver Coastal Health. It measures performance in the following areas:

- Quality of care (access, safety, client-centred, effectiveness);
- Efficient use of resources (net surplus or deficit);
- Care of our communities (efficiency, effectiveness, equity); and
- Workforce (staff safety scores, absence due to illness or injury, grants received).

6.0 Gaps and Challenges

6.1 Limitations of Data Sources

In Canada and elsewhere, limitations exist regarding the data available to monitor health equity.¹⁵⁰ In the UK, it is noted that, “The most vulnerable are not always picked up within area-based approaches, and are frequently invisible and/or of low priority to the system.”¹⁵¹ Health equity is a complex issue that requires accurate, reliable data and sophisticated measures to determine differences between and within groups.

Issues and gaps in data include:

Aboriginal peoples – The lack of good information available for Aboriginal peoples, including basic statistics such as mortality data, has been widely decried.^{152, 153, 154} Data is not collected regularly, often uses variable measures, and rarely includes Aboriginal peoples living on reserves.^{155, 156} Some researchers believe that, “Current data sources for First Nations populations, specifically for mortality indicators, are insufficient for monitoring of health inequalities.”¹⁵⁷

In addition, there are currently no reliable ways to measure some issues related to equity that affect Aboriginal Peoples in particular, such as residential schools, the effects of colonization, self-determination, and cultural continuity.¹⁵⁸ These indicators would need to be developed by Aboriginal Peoples to ensure that they accurately reflect their experiences.

In British Columbia, a *Tripartite Surveillance Planning Committee* was formed to map existing sources of First Nations health data and identify gaps in information. In April 2010, the *Tripartite Data Quality and Sharing Agreement* was signed, allowing for the use of the *First Nations Client File* (FNCF) to monitor health status, as well as the performance of health programs and services.¹⁵⁹ The agreement guides the appropriate use of the FNCF, (which is under the stewardship of the First Nations Health Authority), including the involvement of First Nations in determining how the data are used.

Statistics Canada Census Data – Many of the indicators listed in the Pan-Canadian Indicators of Health Inequalities report¹⁶⁰ rely on information gathered through the long-form Census of Canada. As this census is no longer mandatory, the future quality of information from this source is unknown. In addition, many of the recommended indicators are available only through custom-tabulations, which can be expensive and take time.

Community Health Survey (CCHS) – The CCHS survey excludes First Nations people on reserve, residents of the Territories and homeless people, and is not thought to provide good data on new immigrants and the very poor.¹⁶¹ In addition, the results are self-reported and include areas that are only collected periodically, in ‘themed’ surveys. The question of income in the CCHS has a high non-response rate.¹⁶²

Populations under federal jurisdiction – In addition to registered First Nations people, there is limited health information available on other populations under federal responsibility, including inmates in

federal penitentiaries and those under the responsibility of immigration authorities (e.g., asylum seekers, refugees, and persons detained for immigration purposes).¹⁶³

Methodology – This report does not address statistical methods to determine health inequities between population groups, but that too, has been identified as a complex undertaking that requires extensive data and sophisticated analysis.^{164, 165} Difficulties arise in trying to disaggregate small sets of data by sex, income, age or education, as is required to assess differences for Aboriginal Peoples, ethno-racial groups or new immigrants.¹⁶⁶

Other sources of data have been identified, and include:¹⁶⁷

- The Aboriginal Health Data and Indicators Federal/Provincial/Territorial Task Group.
- 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.
- The Federation of Canadian Municipalities Quality of Life reporting system (Metro Vancouver and the cities of Vancouver and Surrey are members), for data related to homeless and immigrant populations.¹⁶⁸
- Human Resources and Social Development Canada (HRSDC) indicators for well-being, (including indicators on health, housing, leisure, and environment).
- The Canadian Council on Social Development's Canadian Social Data Strategy,¹⁶⁹ aimed at providing information and detailed research findings from Statistics Canada to municipalities and community-based organizations to help them better understand social and economic trends in their communities.

6.2 Collecting Data from Patients

Collecting personal data from patients requires processes to ensure that patients feel comfortable providing such information, and that data is effectively used.^{170,171} While one literature review noted that there is generally strong public support (ranging from 80-88%) for collecting race and ethnicity data, one recent Canadian study found that nearly half of patients (48%) did not believe it was important for hospitals to collect individual-level socio-demographic data.¹⁷² More than half, particularly visible minorities, had concerns that the data could be used to negatively affect their or others' care. The greatest discomfort was shown in providing household income (65.2%), sexual orientation (38.1%), and education background (37.3%), particularly for those older than 35 years of age.

The Canadian study found that people were most comfortable providing personal information to their family physician (67.7%), followed by completing a hospital form (49.3%) or telling a hospital clerk (47.6%).¹⁷³ US data showed that most people were comfortable reporting race/ethnicity to a clerk (85% with high or moderate comfort level).¹⁷⁴ However, this figure dropped to less than half among Black respondents. Computerized data collection tools have also been recommended, to allow for analysis at different levels of complexity.¹⁷⁵

When collecting data on race and ethnicity, the “gold standard” has been identified as self-reporting, to ensure accuracy and completeness of information.¹⁷⁶ Staff are reasonably accurate only when identifying white or black race; less so with other races.

It will be important to fully understand patient concerns and institute approaches to gathering information that respects their needs, in order to collect high-quality information related to health equity. In addition, senior management must be engaged, clear goals for data collection defined, and efficient methods for gathering and tracking data in place to make best use of any information.¹⁷⁷

6.3 Barriers to Health Care

Reviewing potential barriers to the health system may help to identify key indicators to ensuring health equity within the system. A number of reports have reviewed key obstructions to care.^{178, 179} They include structural (or institutional), financial and cognitive barriers.

Barriers include:^{180, 181}

- **Language and culture** – Numerous reports have identified barriers that arise due to language difficulties. Cultural barriers can hamper people’s ability to interact confidently with health professionals.
- **Accessibility of services**, including the availability (e.g. hours of operation) and proximity of facilities; implementation of mobile services; transportation, including access to public transit; child care issues; and concerns such as wait times.
- **Navigation** - Navigating the health system is far more difficult for people whose work does not provide them the flexibility to attend medical appointments, or for those without a telephone. Limited health literacy impedes navigation from a cognitive point of view.
- **Financial** – Despite a public health system, the cost of uninsured services and pharmaceuticals pose significant barriers to some Canadians, particularly the working poor or self-employed people, who generally do not have additional health coverage from either private or government sources.

The impact of these barriers varies by population group and should be reviewed and addressed individually to provide improved access to services and quality of care for disadvantaged populations and communities.

7.0 Options for Discussion

This scan of the literature provides a number of options to support decision-making to identify health equity indicators and targets for British Columbia. This part of the process will result in recommendations of health equity indicators and targets to be considered for implementation in services and programs under the control of HAs, to demonstrate the application of indicators at that level before expanding the scope to other elements of the broad health system.¹⁸²

The decisions taken, or steps still required to arrive at recommended health equity indicators and targets, are noted below:

7.1 The Framework Identified

The Canadian Health Indicator Framework has been identified as most appropriate for adaptation to the situation in British Columbia. It has also been adapted for use by Interior Health (see *Appendix B*).

7.2 Criteria Proposed

Based on the review of criteria used in establishing health equity indicators presented earlier (*Section 4.2*), the following six criteria for use in British Columbia have been proposed. The preliminary list of criteria is as follows:

- **Feasible** – either expressed as such, or as being:
 - Actionable – Relevant to policy: amenable to effective action through policy, programs and services
 - Based on available data – Available at national, provincial/territorial and regional and sub-regional levels, or which are feasible to develop
- **Understandable** – Clear and accepted interpretation by decision-makers, the media, advocacy groups and the general public
- **Relevant** – Represents a significant and relevant aspect of healthy functioning or the context in which people live; measures what makes the most difference towards improving well-being

To ensure that the indicators are technically robust, the following criteria have been proposed:

- **Valid** – Objective statistical measures gathered through sound research techniques
- **Reliable** – Providing consistent measures of both the general population and members of diverse populations, and over time
- **Comparable** – Based on standard and comparable definitions, across population sub-groups and jurisdictions.

7.3 Establishing Priorities

The European Community Health Indicators Monitoring project narrowed their long-list of almost 500 items down to 82 indicators that focused on major public health problems with the best chances for improvement, using the following criteria:¹⁸³

1. importance for overall health status and major health problems at the population level;
2. strength of evidence for inequalities in health; and
3. importance for effective interventions and health policies.

A review of the international literature found race, ethnicity, language and socio-economic status to be the “most strategic” dimensions of indicators.¹⁸⁴ For Canada, the following dimensions have been identified as priorities in tracking inequities: income/SES, age, gender, education, ethnicity, Aboriginal status and geography (rural/urban).¹⁸⁵

7.3.1 Indicators Most Amenable to Health System Action

Given that the initial focus of the indicator work in British Columbia is the health system, it makes sense to focus on indicators that measure issues that are particularly relevant to socio-economic status and health, and that are amenable to action by the health system. CIHI, in its report, *Reducing the Gaps in Health: A Focus on Socio-Economic Status in Urban Canada* measured health disparities between socio-economic groups in hospital admissions for 12 conditions, and self-rated health on eight conditions. St. Michael’s Hospital, in Toronto, also developed a set of ten indicators designed to measure equity of care in the hospital setting.¹⁸⁶ Both these sets of indicators are specific to urban settings, and may not reflect rural and remote health issues.

The CIHI indicators are:¹⁸⁷

- **Hospital Admission indicators** – ambulatory care sensitive conditions, diabetes, chronic obstructive pulmonary disease (20 years of age or older), asthma in children, injuries, land transport accidents, mental health (acute care hospitalization only, not psychiatric hospitals), anxiety disorders, affective disorders, substance-related disorders, low birth weight.
- **Self-reported health indicators** (used to gauge perceived health and well-being of those ages 12 and over, unless otherwise stated): self-rated health, physical inactivity, smoking, alcohol intake, overweight or obese (ages 18 and over), risk factors (ages 18 and over - three or more of the following self-reported variables: physical inactivity, BMI of 25 or more, current smoker or binge drinker), influenza immunization (ages 65 and over); and participation and activity limitation (ages 65 and over).

St. Michael’s Hospital indicators:¹⁸⁸

- **Equity in hospital care:** cultural concordance between patients and staff, accessibility of language services, patient satisfaction, perforated appendix rate, minimally invasive cholecystectomy rate, use

of analgesics for pain management, and rate of death within 30 days of hospital admission for acute myocardial infarction.

- **Indicators specific to TC-LHIN priority populations:** length of physical restraint use among patients with mental illness, pressure ulcer rate (to address issues of the elderly) and lower extremity amputations among patients with diabetes.

7.4 Conclusion and Next Steps

It is important that the health equity indicators recommended are specific to British Columbia's priorities and mandate. To identify priorities, all Health Authority Service Delivery Plans were reviewed for goals or objectives that dealt with health equity (see *Appendix A*). From that review, Aboriginal peoples, high-risk or vulnerable groups and children emerged as priority populations. Specific health issues or measures common to all Health Authorities did not emerge.

Consultation with representatives of all relevant components of British Columbia health services will be required as the first step in identifying health equity indicators. While public health has traditionally been more focused on equity issues, primary care, acute care, community care, long-term care and all provincial agencies/services must also be engaged in the process to identify and implement indicators that are truly valuable.

The next step is to bring together representatives from all these parts of the health system, and adapt the CIHI framework, and apply criteria and learnings from other jurisdictions identified in this report to help identify, define and prioritize a suite of health equity indicators for use in BC.

8.0 References

- 1 Provincial Health Services Authority, (2011). *Towards Reducing Health Inequities: A Health System Approach to Chronic Disease Prevention. A Discussion Paper*. Vancouver, BC: Population & Public Health, Provincial Health Services Authority.
- 2 Provincial Health Services Authority, (2011). *Towards Reducing Health Inequities: A Health System Approach to Chronic Disease Prevention. A Discussion Paper*. Vancouver, BC: Population & Public Health, Provincial Health Services Authority.
- 3 Provincial Health Services Authority, Strategy Meeting: Reducing Health Inequities: Developing Health Equity Indicators & Targets Recommendations, Meeting Notes June 5, 2012.
- 4 Provincial Health Services Authority, Strategy Meeting: Reducing Health Inequities: Developing Health Equity Indicators & Targets Recommendations, Meeting Notes June 5, 2012.
- 5 Provincial Health Services Authority, (2011). *Towards Reducing Health Inequities: A Health System Approach to Chronic Disease Prevention. A Discussion Paper*. Vancouver, BC: Population & Public Health, Provincial Health Services Authority.
- 6 Pan-Canadian Public Health Network, Indicators of Health Inequalities, August 21, 2009. [cited June 19, 2012] Available at: <http://www.phn-rsp.ca/pubs/ihi-idps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>
- 7 Representative for Children and Youth. Growing up in BC. British Columbia: Office of the Provincial Health Officer. October, 2010[cited June 19, 2012] from: <http://www.health.gov.bc.ca/library/publications/year/2010/growing-up-in-bc.pdf>
- 8 Kilpeläinen K, Aromaa A, and the ECHIM Core Group (Editors), Indicators: Development and Initial Implementation Final Report Of The Echim Project, National Public Health Institute, 2008 [cited July 5, 2012] from: http://www.echim.org/docs/ECHIM_final_report.pdf
- 9 Lam R, Newman Z, Tri-Hospital Health Equity Data Collection Project Literature Review – Main Findings, March 3, 2010 [unpublished]
- 10 Pan-Canadian Public Health Network, Indicators of Health Inequalities, August 21, 2009. [cited June 19, 2012] Available at: <http://www.phn-rsp.ca/pubs/ihi-idps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>
- 11 Gallaher G, et al, Measuring Equity of Care in Hospital Settings: From Concepts to Indicators (2009). St.Michael's Hospital [cited July 10, 2012] from: http://www.stmichaelshospital.com/pdf/crich/measuring_equity.pdf
- 12 Canadian Institute for Health Information, *Reducing the Gaps in Health: A Focus on Socio-Economic Status in Urban Canada*, (Ottawa, Ont.: CIHI, 2008) [cited July 5, 2012] from: https://secure.cihi.ca/free_products/Reducing_Gaps_in_Health_Report_EN_081009.pdf
- 13 Gallaher G, et al, Measuring Equity of Care in Hospital Settings: From Concepts to Indicators (2009). St.Michael's Hospital [cited July 10, 2012] from: http://www.stmichaelshospital.com/pdf/crich/measuring_equity.pdf
- 14 Provincial Health Services Authority, (2011). *Towards Reducing Health Inequities: A Health System Approach to Chronic Disease Prevention. A Discussion Paper*. Vancouver, BC: Population & Public Health, Provincial Health Services Authority.

- 15 Gilson et al., (2007), as cited in Provincial Health Services Authority, (2011). *Towards Reducing Health Inequities: A Health System Approach to Chronic Disease Prevention. A Discussion Paper*. Vancouver, BC: Population & Public Health, Provincial Health Services Authority.
- 16 Provincial Health Services Authority, (2011). *Towards Reducing Health Inequities: A Health System Approach to Chronic Disease Prevention. A Discussion Paper*. Vancouver, BC: Population & Public Health, Provincial Health Services Authority.
- 17 Provincial Health Services Authority, (2011). *Towards Reducing Health Inequities: A Health System Approach to Chronic Disease Prevention. A Discussion Paper*. Vancouver, BC: Population & Public Health, Provincial Health Services Authority.
- 18 Provincial Health Services Authority, Strategy Meeting: Reducing Health Inequities: Developing Health Equity Indicators & Targets Recommendations, Meeting Notes June 5 , 2012.
- 19 Provincial Health Services Authority, (2011). *Towards Reducing Health Inequities: A Health System Approach to Chronic Disease Prevention. A Discussion Paper*. Vancouver, BC: Population & Public Health, Provincial Health Services Authority.
- 20 Provincial Health Services Authority, (2011). *Towards Reducing Health Inequities: A Health System Approach to Chronic Disease Prevention. A Discussion Paper*. Vancouver, BC: Population & Public Health, Provincial Health Services Authority.
- 21 Pan-Canadian Public Health Network, Indicators of Health Inequalities, August 21, 2009. [cited June 19, 2012] Available at: <http://www.phn-rsp.ca/pubs/ihi-idps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>
- 22 Office of the Provincial Health Officer, British Columbia (2007), *The Health and Well-Being of the Aboriginal Population in British Columbia, Interim Update*. [cited July 23, 2012] from: http://www.health.gov.bc.ca/pho/pdf/Interim_report_Final.pdf
- 23 Office of the Provincial Health Officer, British Columbia (2007), *The Health and Well-Being of the Aboriginal Population in British Columbia, Interim Update*. [cited July 23, 2012] from: http://www.health.gov.bc.ca/pho/pdf/Interim_report_Final.pdf
- 24 Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited June 27, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf
- 25 Provincial Health Services Authority, (2011). *Towards Reducing Health Inequities: A Health System Approach to Chronic Disease Prevention. A Discussion Paper*. Vancouver, BC: Population & Public Health, Provincial Health Services Authority.
- 26 Office of the Provincial Health Officer of British Columbia (2008), *Health and Well-Being of Women in British Columbia, Provincial Health Officer's 2008 Annual Report*. [cited July 23, 2012] from: <http://www.health.gov.bc.ca/pho/pdf/phoannual2008.pdf>
- 27 Office of the Provincial Health Officer of British Columbia (2008), *Health and Well-Being of Women in British Columbia, Provincial Health Officer's 2008 Annual Report*. [cited July 23, 2012] from: <http://www.health.gov.bc.ca/pho/pdf/phoannual2008.pdf>
- 28 Bierman, A. S. (2008). *Measuring Health Inequalities Among Canadian Women: Developing a Basket of Indicators*. Health Canada [Electronic version]. Available: <http://www.hc-sc.gc.ca/sr-sr/pubs/hpr-rpms/2007-bierman-eng.php>
- 29 Bierman AS, editor. *Project for an Ontario Women's Health Evidence-Based Report: Volume 1*: Toronto; 2009. . [cited July 3, 2012] from: http://www.powerstudy.ca/webfm_send/50

- 30 Provincial Health Services Authority, (2011). *Towards Reducing Health Inequities: A Health System Approach to Chronic Disease Prevention. A Discussion Paper*. Vancouver, BC: Population & Public Health, Provincial Health Services Authority.
- 31 Theresa Healy, Northern Health Authority, Strategy Meeting: Reducing Health Inequities: Developing Health Equity Indicators & Targets Recommendations, Meeting Notes June 5 , 2012.
- 32 Vancouver Coastal Health, *Vancouver Coastal Health 2011/12 – 2013/14 Service Plan* (October 2011). [cited July 23, 2012] from: http://www.vch.ca/media/serviceplan_2011.pdf?xprOpenPopup=1
- 33 Provincial Health Services Authority, *PHSA Strategic Plan, 2010-2013*. [cited July 23, 2012] from: <http://www.phsa.ca/NR/rdonlyres/E7E981A2-26A8-4EA8-9823-491BAF714543/0/PHSAStrategicPlanFINAL2010.pdf>
- 34 Interior Health Authority, *Interior Health Authority 2011/12 = 2013/14 Service Plan* (December 2011). [cited July 23, 2012] from: http://www.interiorhealth.ca/AboutUs/Accountability/Documents/Service%20Plan%202011-12_2013-14.pdf
- 35 Fraser Health Authority, *Fraser Health Authority 2011/12 – 2013/14 Service Plan* (August 2011). [cited July 23, 2012] from: http://www.fraserhealth.ca/media/ServicePlan%20_2011.pdf
- 36 Northern Health Authority, *Northern Health Authority 2011/12 – 2013/14 Service Plan* (November 2011). [cited July 23, 2012] from: http://www.northernhealth.ca/Portals/0/About/Financial_Accountability/documents/2011to2014ServicePlanNorthernHealthFINALNOVEMBER252011.pdf
- 37 Vancouver Island Health Authority, *Vancouver Island Health Authority 2011/12 – 2013/14 Service Plan* (August 2011). [cited July 23, 2012] from: http://www.viha.ca/NR/rdonlyres/05546873-E254-434D-A982-39B392C8590B/0/service_plan_2011_12.pdf
- 38 Statistics Canada, Health Indicators Consensus Conference report: Report from the Third Consensus Conference on Health Indicators, March 2009. [cited June 19, 2012] Available at: <http://www.statcan.gc.ca/pub/82-230-x/82-230-x2009001-eng.htm>
- 39 Representative for Children and Youth. Growing up in BC. British Columbia: Office of the Provincial Health Officer. October, 2010[cited June 19, 2012] from: <http://www.health.gov.bc.ca/library/publications/year/2010/growing-up-in-bc.pdf>
- 40 Bierman AS, editor. Project for an Ontario Women’s Health Evidence-Based Report: Volume 1: Toronto; 2009. . [cited July 3, 2012] from: http://www.powerstudy.ca/webfm_send/50
- 41 Data & Indicators (2012). Equity Action [Electronic version]. Available: http://www.health-inequalities.eu/HEALTHY/EN/about_hi/data__indicators/ Ref ID: 28
- 42 Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited June 27, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf
- 43 Graham H, Kelly M, as cited in Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited June 27, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf
- 44 Braveman P, “Health Disparities and Health Equity: Concepts and Measurements,” as cited in Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited June 27, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf
- 45 Statistics Canada, Health Indicators Consensus Conference report: Report from the Third Consensus Conference on Health Indicators, March 2009. [cited June 19, 2012] Available at: <http://www.statcan.gc.ca/pub/82-230-x/82-230-x2009001-eng.htm>

- 46 Pan-Canadian Public Health Network, Indicators of Health Inequalities, August 21, 2009. [cited June 19, 2012] Available at: <http://www.phn-rsp.ca/pubs/ihl-idps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>
- 47 WHO Commission on Social Determinants of Health – A Conceptual Framework for Action on the Social Determinants of Health (2007). [cited July 4, 2012] from: http://www.who.int/social_determinants/resources/csdh_framework_action_05_07.pdf
- 48 World Health Organization, *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 2008),. [cited July 4, 2012] from: http://www.who.int/social_determinants/final_report/en/index.html
- 49 Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited June 27, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf
- 50 World Health Organization, *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 2008),. [cited July 4, 2012] from: http://www.who.int/social_determinants/final_report/en/index.html
- 51 World Health Organization, *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 2008),. [cited July 4, 2012] from: http://www.who.int/social_determinants/final_report/en/index.html
- 52 World Health Organization, *World Health Statistics 2011*, Geneva, 2011 [cited July 4, 2012] from: http://www.who.int/gho/publications/world_health_statistics/2011/en/index.html
- 53 Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited June 27, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf
- 54 OECD (2011), *Health at a Glance 2011: OECD Indicators*, OECD Publishing. [cited July 5, 2012] from: http://dx.doi.org/10.1787/health_glance-2011-en
- 55 UCL Institute of Health Equity, Strategic Review of health inequalities post 2010 (Marmot Review): Framework of indicators to assess performance improvement in delivering review recommendations (2010). [cited July 5, 2012] from: <http://www.instituteofhealthequity.org/projects/fair-society-healthy-lives-the-marmot-review>
- 56 Senate of Canada, Subcommittee on Population Health of the Standing Senate Committee on Social Affairs, Science and Technology, *Population Health Policy: Issues and Options*, April 2008, [cited July 5, 2012] from <http://www.parl.gc.ca/39/2/parlbus/commbus/senate/com-e/soci-e/rep-e/rep10apr08-e.pdf>
- 57 Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited July 5, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf
- 58 Ministry of Health (New Zealand), *Reducing Inequalities in Health*, Wellington, New Zealand, 2002. [cited July 5, 2012] from: <http://www.health.govt.nz/publication/reducing-inequalities-health>
- 59 Ministry of Health (New Zealand). 2011. Annual Report for the year ended 30 June 2011: Including the Director-General of Health's Annual Report on the State of Public Health. Wellington: Ministry of Health. [cited July 5, 2012] from: <http://www.health.govt.nz/publication/annual-report-year-ended-30-june-2011>
- 60 Statistics New Zealand and Ministry of Pacific Island Affairs (2011). *Health and Pacific peoples in New Zealand*. Wellington: Statistics New Zealand and Ministry of Pacific Island Affairs. [cited July 5, 2012] from: http://www.stats.govt.nz/browse_for_stats/people_and_communities/pacific_peoples/pacific-progress-health.aspx

- 61 Statistics New Zealand and Ministry of Pacific Island Affairs (2011). *Health and Pacific peoples in New Zealand*. Wellington: Statistics New Zealand and Ministry of Pacific Island Affairs. [cited July 5, 2012] from: http://www.stats.govt.nz/browse_for_stats/people_and_communities/pacific_peoples/pacific-progress-health.aspx
- 62 Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited July 5, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf
- 63 Bierman AS, editor. Project for an Ontario Women's Health Evidence-Based Report: Volume 1: Toronto; 2009. [cited July 3, 2012] from: http://www.powerstudy.ca/webfm_send/50
- 64 Bierman AS, editor. Project for an Ontario Women's Health Evidence-Based Report: Volume 1: Toronto; 2009. [cited July 3, 2012] from: http://www.powerstudy.ca/webfm_send/6 and http://www.powerstudy.ca/webfm_send/80
- 65 Health Disparities Task Group of the Federal/Provincial/Territorial Advisory Committee on Population Health and Health Security. *Reducing Health Disparities - Roles of the Health Sector: Recommended Policy Directions and Activities*, Public Health Agency of Canada, 2004. [cited July 10, 2012] from: http://www.phac-aspc.gc.ca/ph-sp/disparities/pdf06/disparities_recommended_policy.pdf
- 66 Pan-Canadian Public Health Network, Indicators of Health Inequalities, August 21, 2009. [cited June 19, 2012] Available at: <http://www.phn-rsp.ca/pubs/ihidps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>
- 67 Senate of Canada, Subcommittee on Population Health of the Standing Senate Committee on Social Affairs, Science and Technology, Population Health Policy: Issues and Options, April 2008, [cited July 5, 2012] from <http://www.parl.gc.ca/39/2/parbus/commbus/senate/com-e/soci-e/rep-e/rep10apr08-e.pdf>
- 68 Pan-Canadian Public Health Network, Indicators of Health Inequalities, August 21, 2009. [cited June 19, 2012] Available at: <http://www.phn-rsp.ca/pubs/ihidps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>
- 69 Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited July 5, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf
- 70 Reading, C. L. & Wien, F. (2009). Health Inequalities and Social Determinants of Aboriginal Peoples' Health. National Collaborative Centre for Aboriginal Health [Electronic version]. Available: http://www.nccah-ccnsa.ca/docs/social%20determinates/NCCAH-loppie-Wien_report.pdf
- 71 Wong, S. T., Browne, A. J., Varcoe, C., Lavoie, J., Smye, V., Godwin, O. et al. (2011). Enhancing measurement of primary health care indicators using an equity lens: An ethnographic study. *Int J Equity Health*, 10, 38. [cited June 25, 2012] from: <http://www.equityhealthj.com/content/10/1/38>
- 72 Wong, S. T., Browne, A. J., Varcoe, C., Lavoie, J., Smye, V., Godwin, O. et al. (2011). Enhancing measurement of primary health care indicators using an equity lens: An ethnographic study. *Int J Equity Health*, 10, 38. [cited June 25, 2012] from: <http://www.equityhealthj.com/content/10/1/38>
- 73 Wong, S. T., Browne, A. J., Varcoe, C., Lavoie, J., Smye, V., Godwin, O. et al. (2011). Enhancing measurement of primary health care indicators using an equity lens: An ethnographic study – Logic Model. *Int J Equity Health*, 10, 38. [cited July 4, 2012] from: <http://www.equityhealthj.com/content/10/1/38/figure/F1>
- 74 Wong, S. T., Browne, A. J., Varcoe, C., Lavoie, J., Smye, V., Godwin, O. et al. (2011). Enhancing measurement of primary health care indicators using an equity lens: An ethnographic study – Table 2 (examples). *Int J Equity Health*, 10, 38. [cited July 4, 2012] from: <http://www.equityhealthj.com/content/10/1/38/table/T2>

- 75 Pampalon, R., Hamel, D., Gamache, P., & Raymond, G. (2009). A deprivation index for health planning in Canada. *Chronic Dis Can.*, 29, 178-191. [cited July 5, 2012] from: http://www.phac-aspc.gc.ca/publicat/cdic-mcbc/29-4/ar_05-eng.php
- 76 Canadian Institute for Health Information, *Reducing the Gaps in Health: A Focus on Socio-Economic Status in Urban Canada*, (Ottawa, Ont.: CIHI, 2008) [cited July 5, 2012] from: https://secure.cihi.ca/free_products/Reducing_Gaps_in_Health_Report_EN_081009.pdf
- 77 Personal communication, Deborah McNeil, Director, Public Health Innovation and Decision Support, Population and Public Health, Alberta Health Services. Communicated on June 12, 2012
- 78 Terashima, M. (2007). Nova Scotia Multiple Deprivation Mapping Project: Update Report. Nova Scotia. Department of Finance [cited June 28, 2012] from: <http://www.gov.ns.ca/finance/communitycounts/documents/NSDeprivationMappingProjectUpdateJan07.pdf>
- 79 Canadian Institute for Health Information, *Reducing the Gaps in Health: A Focus on Socio-Economic Status in Urban Canada*, (Ottawa, Ont.: CIHI, 2008) [cited July 5, 2012] from: https://secure.cihi.ca/free_products/Reducing_Gaps_in_Health_Report_EN_081009.pdf
- 80 Region of Peel, Health in Peel: Determinants and Disparities 2011, Region of Peel. [cited July 26, 2012] from: http://www.peelregion.ca/health/health-status-report/determinants/pdf/MOH-0036_Determinants_final.pdf
- 81 Matheson F, et al, CAN-Marg – Canadian Marginalization Index, User Guide, Version 1.0, Centre for Research on Inner City Health, St. Michael's Hospital. [cited July 26, 2012] from: http://www.crunch.mcmaster.ca/documents/CAN-Marg_user_guide_1.0_FINAL_MAY2012.pdf
- 82 Bell N, Schuurman N, Oliver L, Hayes MV. Towards the construction of place-specific measures of deprivation: a case study from the Vancouver metropolitan area. *The Canadian Geographer* 2007;51(4):444–61. [cited July 6, 2012] from: http://www.sfu.ca/gis/schuurman/cv/PDF/2007_CG_indices.pdf
- 83 Haworth-Brockman, M. J., Isfield, H., Pedersen, H., Clow, B., Liwander, A., & Kinniburgh, B. A. (2011). Careful Measures: An Exploration of the Sex and Gender Dimensions of a Deprivation Index. British Columbia Centre of Excellence for Women's Health [cited June 28, 2012] from: http://www.acewh.dal.ca/pdf/Careful_Measures_book-2011.pdf
- 84 Salmond C, Crampton P, Atkinson J, NZDep2006 Index of Deprivation, August 2007, Department of Public Health, University of Otago, Wellington. [cited July 11, 2012] from: <http://www.otago.ac.nz/wellington/research/hirp/projects/otago020194.html>
- 85 Lad M, The English Indices of Deprivation 2010, Department for Communities and Local Government, March 2011 [cited July 11, 2012] from: <http://www.communities.gov.uk/documents/statistics/pdf/1871208.pdf>
- 86 Northern Ireland Statistics and Research Agency, Northern Ireland Multiple Deprivation Measure, 2010, May 2010. [cited July 11, 2012] from: http://www.nisra.gov.uk/deprivation/archive/Updateof2005Measures/NIMDM_2010_Report.pdf
- 87 Scottish Government, SIMD, Scottish Index of Multiple Deprivation [website] [cited July 11, 2012] from: <http://www.scotland.gov.uk/Topics/Statistics/SIMD/>
- 88 Welsh Government, Welsh Index of Multiple Deprivation [website] [cited July 11, 2012] from: <http://wales.gov.uk/topics/statistics/theme/wimd/?lang=en>
- 89 Canadian Index of Wellbeing [website] [cited July 4, 2012] from: <http://ciw.ca/en/TheCanadianIndexOfWellbeing.html>

- 90 V. Etches et al., "Measuring Population Health: A review of indicators," *Annual Review of Public Health*, 2006, Vol. 27, pp. 29–55.
- 91 Frank J, Haw S. Best Practice Guidelines for Monitoring Socioeconomic Inequalities in Health Status: Lessons from Scotland. *Milbank Q* 2011;89(4):658-693
- 92 Lam R, Newman Z, Tri-Hospital Health Equity Data Collection Project Literature Review – Main Findings, March 3, 2010 [unpublished]
- 93 Lam R, Newman Z, Tri-Hospital Health Equity Data Collection Project Literature Review – Main Findings, March 3, 2010 [unpublished]
- 94 V. Etches et al. "Measuring Population Health: A review of indicators," *Annual Review of Public Health*, 2006, Vol. 27, pp. 29–55.
- 95 National Collaborating Centre for Determinants of Health, *Selecting indicators for measuring health inequities, Purposeful Reporting to Advance Health Equity: Making it Possible in Canada*, CPHA Pre-Conference workshop, June 11, 2012.
- 96 Population Health Promotion Expert Group (PHPEG,) *Indicators of Health Inequalities Workshop - Facilitator's Report*. 2009. (cited in Pan-Canadian report)
- 97 Statistics Canada, Health Indicators Consensus Conference report: Report from the Third Consensus Conference on Health Indicators, March 2009. [cited June 19, 2012] Available at: <http://www.statcan.gc.ca/pub/82-230-x/82-230-x2009001-eng.htm>
- 98 St.Michael's Hospital, *Measuring Equity of Care in Hospital Settings: From Concepts to Indicators*, May 2009 [cited July 6, 2012] from: http://www.stmichaelshospital.com/pdf/crich/measuring_equity.pdf
- 99 Representative for Children and Youth. *Growing up in BC*. British Columbia: Office of the Provincial Health Officer. October, 2010[cited June 19, 2012] from: <http://www.health.gov.bc.ca/library/publications/year/2010/growing-up-in-bc.pdf>
- 100 Michalos, A.C., Smale, B., Labonté, R., Muharjarine, N., Scott, K., Moore, K., Swystun, L., Holden, B., Bernardin, H., Dunning, B., Graham, P., Guhn, M., Gadermann, A.M., Zumbo, B.D., Morgan, A., Brooker, A.-S., & Hyman, I. (2011). *The Canadian Index of Wellbeing*. Technical Report 1.0. Waterloo, ON: Canadian Index of Wellbeing and University of Waterloo. [cited July 4, 2012] from: http://ciw.ca/reports/en/Reports%20and%20FAQs/Canadian_Index_of_Wellbeing-TechnicalPaper-FINAL.pdf
- 101 Office of the Provincial Health Officer (2010), *Child Health and Well-being Indicators Project: Revised Health and Well-being Framework and Indicator Selection Criteria*
- 102 BCHLA Policies - Disadvantaged Populations (2012). BC Healthy Living Alliance [Electronic version]. Available: <http://www.bchealthyliving.ca/bchla-policies-disadvantaged-populations>
- 103 Pan-Canadian Public Health Network, *Indicators of Health Inequalities*, August 21, 2009. [cited June 19, 2012] Available at: <http://www.phn-rsp.ca/pubs/ihl-idps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>
- 104 WHO Commission on Social Determinants of Health – *A Conceptual Framework for Action on the Social Determinants of Health* (2007). [cited July 4, 2012] from: http://www.who.int/social_determinants/resources/csdh_framework_action_05_07.pdf
- 105 Canadian Institute for Health Information, *Reducing the Gaps in Health: A Focus on Socio-Economic Status in Urban Canada*, (Ottawa, Ont.: CIHI, 2008) [cited July 5, 2012] from: https://secure.cihi.ca/free_products/Reducing_Gaps_in_Health_Report_EN_081009.pdf

- 106 Jeffrey B et al (2006), Community Health Indicators Toolkit, University of Regina and University of Saskatchewan: Saskatchewan Population Health Research and Evaluation Unit (revised 2010) [cited July 23, 2012] from: www.uregina.ca/fnh/Combined%20Domains%20-%20Jun-07.pdf
- 107 Ministère de la Santé et des Services sociaux (2011), *Pour guider l'action: portrait de santé du Québec et de ses régions- Les statistiques*. Gouvernement du Québec, [cited July 10, 2012] from: <http://publications.msss.gouv.qc.ca/acrobat/f/documentation/2011/11-228-01F.pdf>
- 108 Ministère de la Santé et des Services sociaux (2011), *Pour guider l'action: portrait de santé du Québec et de ses régions - En un coup d'œil*. Gouvernement du Québec, [cited July 10, 2012] from: <http://publications.msss.gouv.qc.ca/acrobat/f/documentation/2011/11-228-05F.pdf>
- 109 LeBlanc, M. F., Raynault, M. F., & Lessard, R. (2011). Social Inequalities in Health in Montréal 2011: Progress to Date. Direction de santé publique de Montréal. [cited July 10, 2012] from: http://publications.santemontreal.qc.ca/uploads/tx_assmpublications/978-2-89673-133-6.pdf and http://publications.santemontreal.qc.ca/uploads/tx_assmpublications/978-2-89673-119-0.pdf (English summary)
- 110 Ontario Ministry of Health and Long-Term Care (2012) - *Initial Report on Public Health: Indicators* [cited June 25, 2012] from: http://www.health.gov.on.ca/english/public/pub/pubhealth/init_report/indicators.html
- 111 Toronto Public Health: *The Unequal City: Income and Health Inequalities in Toronto, 2008*, October 2008. [cited June 20, 2012] from: www.toronto.ca/health/map/pdf/unequalcity_20081016.pdf
- 112 Gallaher G, et al, *Measuring Equity of Care in Hospital Settings: From Concepts to Indicators* (2009). St.Michael's Hospital [cited July 10, 2012] from: http://www.stmichaelshospital.com/pdf/crich/measuring_equity.pdf
- 113 Sridharan, S., Gardner, B., & Nakaima, A. (2009). Steps towards incorporating health equity into a performance measurement and management framework. Centre Research on Inner City Health, University of Toronto [cited July 11, 2012] from: <http://www.torontoevaluation.ca/tclhin/PDF/LHIN%20final%20October%2015%20send.pdf>
- 114 Sridharan, S., Gardner, B., & Nakaima, A. (2009). Steps towards incorporating health equity into a performance measurement and management framework. Centre Research on Inner City Health, University of Toronto [cited July 11, 2012] from: <http://www.torontoevaluation.ca/tclhin/PDF/LHIN%20final%20October%2015%20send.pdf>
- 115 Sudbury & District Health Unit. (2008). *Health Status Report: Sudbury & District Health Unit*. Sudbury, ON. [cited July 26, 2012] from: http://www.sdhu.com/uploads/content/listings/HealthStatusReportSDHU2008_revisedJuly2010.pdf
- 116 Martens PJ, et al *Health Inequities in Manitoba: Is the Socioeconomic Gap in Health Widening or Narrowing Over Time?* Winnipeg, MB: Manitoba Centre for Health Policy, September 2010. [cited June 19, 2012] from: http://mchp-appserv.cpe.umanitoba.ca/reference/Health_Ineq_final_WEB.pdf
- 117 Alberta Health Services, Draft – Promoting Health Equity: Summary of Proposed Framework, June 2012, as presented at the Canadian Public Health Association Annual Conference, Edmonton, Alberta, June 2012.
- 118 Canadian Institute for Health Information, *Reducing the Gaps in Health: A Focus on Socio-Economic Status in Urban Canada*, (Ottawa, Ont.: CIHI, 2008) [cited July 5, 2012] from: https://secure.cihi.ca/free_products/Reducing_Gaps_in_Health_Report_EN_081009.pdf
- 119 Predy GN et al, *Poverty and health in Edmonton*. Edmonton, Alberta: Public Health Division, Alberta Health Services Edmonton Area); November [cited June 20, 2012] from: <http://www.capitalhealth.ca/NR/rdonlyres/egeta3vsc1kaagarxdaazp6l3vvcu7pfos7a6i7xiby6t765d5opnrxsm6b6xxtznn5xmounqbku5nj3zgc6wwbdb/Poverty+and+Health+in+Edmonton+Nov21.pdf>

- 120 Terashima, M. (2007). Nova Scotia Multiple Deprivation Mapping Project: Update Report. Nova Scotia. Department of Finance [cited June 28, 2012] from: <http://www.gov.ns.ca/finance/communitycounts/documents/NSDeprivationMappingProjectUpdateJan07.pdf>
- 121 Lockhart, W. Provincial and Regional Health System Report Cards, University of Regina Faculty of Business Administration. [cited on July 10, 2012] from: <http://www.uregina.ca/admin/faculty/Lockhart/hsrc/index.html>
- 122 Ontario Ministry of Health and Long-Term Care, Legislation – *The Excellent Health for All Act*, 2010. [cited September 10, 2012] from: http://www.health.gov.on.ca/en/legislation/excellent_care/
- 123 Lam R, Newman Z, Tri-Hospital Health Equity Data Collection Project Literature Review – Main Findings, March 3, 2010 [unpublished]
- 124 Committee on the State of the USA Health Indicators, I. o. M. (2012). State of the U.S.A. Health Indicators. National Academies Press [cited July 11, 2012] from: http://www.nap.edu/catalog.php?record_id=12534
- 125 Michigan Department of Community Health (2010). *Michigan Health Equity Roadmap: A vision and framework for improving the social and health status of racial and ethnic populations in Michigan* [cited July 11, 2012] from: http://www.michigan.gov/documents/mdch/MI_Roadmap_FINAL_080310_revised_PRINT_VERSION_pdf_329423_7.pdf
- 126 Health equity index (2012). Connecticut Association of Directors of Health [Electronic version]. Available: <http://www.cadh.org/health-equity/health-equity-index.html>
- 127 Kilpeläinen K, Aromaa A, and the ECHIM Core Group (Editors), Indicators: Development and Initial Implementation
Final Report Of The Echim Project, National Public Health Institute, 2008 [cited July 5, 2012] from: http://www.echim.org/docs/ECHIM_final_report.pdf
- 128 European Portal For Action On Health Inequalities (Website) [Accessed July 5, 2012] from: http://www.health-inequalities.eu/HEALTHY/EN/about_hi/data__indicators/
- 129 European Portal For Action On Health Inequalities (Website) [Accessed July 5, 2012] from: http://www.health-inequalities.eu/HEALTHY/EN/about_hi/data__indicators/
- 130 UCL Institute of Health Equity, Strategic Review of health inequalities post 2010 (Marmot Review): Framework of indicators to assess performance improvement in delivering review recommendations (2010). [cited July 5, 2012] from: <http://www.instituteofhealthequity.org/projects/fair-society-healthy-lives-the-marmot-review>
- 131 National Health Service, London Health Observatory [website]. [cited July 5, 2012] from: <http://www.lho.org.uk/>
- 132 Swedish National Institute of Public Health, Public Health Priorities in Sweden, 2011 [cited July 11, 2012] from: <http://www.fhi.se/en/Publications/All-publications-in-english/Public-health-priorities-in-Sweden/>
- 133 Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited July 11, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf
- 134 Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited July 11, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf
- 135 Swedish National Institute of Public Health, Public Health of the Future - Everyone's Responsibility, A summary of the Swedish Public Health Policy Report 2010 [cited July 11, 2012] from: <http://www.fhi.se/PageFiles/12962/Public-health-of-the-future-everyones-responsibility.pdf>

- 136 Ministry of Health (New Zealand). 2011. Annual Report for the year ended 30 June 2011: Including the Director-General of Health's Annual Report on the State of Public Health. Wellington: Ministry of Health. [cited July 5, 2012] from: <http://www.health.govt.nz/publication/annual-report-year-ended-30-june-2011>.
- 137 Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited June 27, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf
- 138 Vital Statistics Agency, British Columbia, Annual Report 2010. [cited July 24, 2012] from: <http://www.vs.gov.bc.ca/stats/annual/>
- 139 BC Patient Safety and Quality Council, BC Health Quality Matrix, Handbook to Support the Use of the BC Health Quality Matrix, [undated]. [cited July 25, 2012] from: <http://www.bcpsqc.ca/pdf/BC%20Health%20Quality%20Matrix%20-%20Handbook.pdf>
- 140 BC Patient Safety and Quality Council, BC Health Quality Matrix, Handbook to Support the Use of the BC Health Quality Matrix, [undated]. [cited July 25, 2012] from: <http://www.bcpsqc.ca/pdf/BC%20Health%20Quality%20Matrix%20-%20Handbook.pdf>
- 141 Human Early Learning Partnership, Early Development Instrument [website], University of British Columbia. [cited July 25, 2012] from: <http://earlylearning.ubc.ca/edi/>
- 142 Clyde Hertzman, The Contribution of the Early Years to Health Inequalities Across the Life Course (presentation), Measuring Health Inequalities: Learning for the Future, Alberta Health Services, February 28, 2011. Available at: <http://www.albertahealthservices.ca/4757.asp>
- 143 Kershaw P, et al, The Economic Costs of Early Vulnerability in Canada Can J Public Health 2010;101(Suppl. 3):S8-S12. [accessed November 1, 2012] from: <http://journal.cpha.ca/index.php/cjph/article/download/2132/2313>
- 144 Human Early Learning Partnership, Middle Years Development Instrument [website], University of British Columbia. [cited July 25, 2012] from: <http://earlylearning.ubc.ca/mdi/>
- 145 Pennock M, personal communication, August 2, 2012
- 146 Representative for Children and Youth. Growing up in BC. British Columbia: Office of the Provincial Health Officer. October, 2010 [cited June 19, 2012] from: <http://www.health.gov.bc.ca/library/publications/year/2010/growing-up-in-bc.pdf>
- 147 British Columbia. Provincial Health Officer. (2009) Pathways to Health and Healing – 2nd Report on the Health and Well-being of Aboriginal People in British Columbia. Provincial Health Officer's Annual Report 2007. Victoria, BC: Ministry of Healthy Living and Sport. [cited July 24, 2012] from: <http://www.health.gov.bc.ca/pho/pdf/abohlth11-var7.pdf>
- 148 First Nations Leadership Council, Government of Canada & Government of British Columbia, First Nations Health Plan, Memorandum of Understanding, November 2006. [cited July 23, 2012] from: http://www.gov.bc.ca/arr/social/health/down/tripartite_health_plan_mou_signed.pdf
- 149 First Nations Leadership Council, Health Indicators, (2012). PDF document
- 150 From the Pan-Canadian Public Health Network, Indicators of Health Inequalities, August 21, 2009. [cited June 19, 2012] Available at: <http://www.phn-rsp.ca/pubs/ihi-idps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>
- 151 UK Department of Health, Inclusion Health: Improving the way we meet the primary health care needs of the socially excluded, March 2010. [cited June 28, 2012] from: <http://webarchive.nationalarchives.gov.uk/+http://www.cabinetoffice.gov.uk/media/346571/inclusion-health.pdf>

- 152 Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited June 27, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf
- 153 Reading, C. L. & Wien, F. (2009). Health Inequalities and Social Determinants of Aboriginal Peoples' Health. National Collaborative Centre for Aboriginal Health [Electronic version]. Available: http://www.nccah-ccnsa.ca/docs/social%20determinates/NCCAH-loppie-Wien_report.pdf
- 154 Browne, A., McDonald, H., & Elliott, D. (2009). Urban First Nations health research discussion paper. National Aboriginal Health Organization [Electronic version]. Available: <http://www.naho.ca/documents/fnc/english/UrbanFirstNationsHealthResearchDiscussionPaper.pdf>
- 155 Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited June 27, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf
- 156 De Rubeis E & Pennock J, (2009) Monitoring the health status of First Nations in Canada: Where do we stand? Poster presentation, Canadian Public Health Association Conference 2009. [cited July 11, 2012] from: <http://www.phn-rsp.ca/pubs/ihl-idps/pdf/Appendix-D-2009-CPHA-Poster-FNIHB-EN.PDF>
- 157 De Rubeis E & Pennock J, (2009) Monitoring the health status of First Nations in Canada: Where do we stand? Poster presentation, Canadian Public Health Association Conference 2009. [cited July 11, 2012] from: <http://www.phn-rsp.ca/pubs/ihl-idps/pdf/Appendix-D-2009-CPHA-Poster-FNIHB-EN.PDF>
- 158 Pan-Canadian Public Health Network, Indicators of Health Inequalities, August 21, 2009. [cited June 19, 2012] Available at: <http://www.phn-rsp.ca/pubs/ihl-idps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>
- 159 First Nations Health Council, *Health Knowledge and Information: Surveillance* (2012), PDF.
- 160 Pan-Canadian Public Health Network, Indicators of Health Inequalities, August 21, 2009. [cited June 19, 2012] Available at: <http://www.phn-rsp.ca/pubs/ihl-idps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>
- 161 Pan-Canadian Public Health Network, Indicators of Health Inequalities, August 21, 2009. [cited June 19, 2012] Available at: <http://www.phn-rsp.ca/pubs/ihl-idps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>
- 162 Pan-Canadian Public Health Network, Indicators of Health Inequalities, August 21, 2009. [cited June 19, 2012] Available at: <http://www.phn-rsp.ca/pubs/ihl-idps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>
- 163 Health Canada (2006) Healthy Canadians: A Federal Report on Comparable Health Indicators 2006, , [cited July 11, 2012] from: <http://www.hc-sc.gc.ca/hcs-sss/pubs/system-regime/2006-fed-comp-indicat/index-eng.php#a21>
- 164 Hayward K, Health Disparities Indicators, Background Report For Developing Health Disparities Indicators in Canada, GPI Atlantic, July 2008. [cited June 27, 2012] from: www.gpiatlantic.org/pdf/health/hdi08.pdf
- 165 Rainsbury J & Cai P (2011), Measuring Health Inequalities, An ACPLF Technical Working Paper, Alberta Health Services.
- 166 Pan-Canadian Public Health Network, Indicators of Health Inequalities, August 21, 2009. [cited June 19, 2012] Available at: <http://www.phn-rsp.ca/pubs/ihl-idps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>

- 167 Pan-Canadian Public Health Network, Indicators of Health Inequalities, August 21, 2009. [cited June 19, 2012] Available at: <http://www.phn-rsp.ca/pubs/ihi-idps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>
- 168 Federation of Canadian Municipalities, Quality of Life Reporting System – Member Communities. [accessed November 1, 2012] from: <http://www.fcm.ca/home/programs/quality-of-life-reporting-system/member-communities.htm>
- 169 Canadian Council on Social Development, Community Social Data Strategy. [cited July 11, 2012] from: <http://www.ccsd.ca/subsites/socialdata/home.html>
- 170 Lofters, A. K., Shankardass, K., Kirst, M., & Quinonez, C. (2011). Sociodemographic data collection in healthcare settings: an examination of public opinions. *Med Care*, 49, 193-199
- 171 Health Research and Educational Trust (2011). Improving Health Equity Through Data Collection AND Use: A Guide for Hospital Leader. Health Research and Educational Trust [cited July 11, 2012] from: <http://www.hret.org/health-equity/index.shtml>
- 172 Lofters, A. K., Shankardass, K., Kirst, M., & Quinonez, C. (2011). Sociodemographic data collection in healthcare settings: an examination of public opinions. *Med Care*, 49, 193-199
- 173 Lofters, A. K., Shankardass, K., Kirst, M., & Quinonez, C. (2011). Sociodemographic data collection in healthcare settings: an examination of public opinions. *Med Care*, 49, 193-199
- 174 Baker et al (2006), as cited in Lam R, Newman Z, Tri-Hospital Health Equity Data Collection Project Literature Review – Main Findings, March 3, 2010 [unpublished]
- 175 Baker et al (2006), as cited in Lam R, Newman Z, Tri-Hospital Health Equity Data Collection Project Literature Review – Main Findings, March 3, 2010 [unpublished]
- 176 Baker et al (2006), as cited in Lam R, Newman Z, Tri-Hospital Health Equity Data Collection Project Literature Review – Main Findings, March 3, 2010 [unpublished]
- 177 Health Research and Educational Trust (2011). Improving Health Equity Through Data Collection AND Use: A Guide for Hospital Leader. Health Research and Educational Trust [cited July 11, 2012] from: <http://www.hret.org/health-equity/index.shtml>
- 178 Carrillo, J. E., Carrillo, V. A., Perez, H. R., Salas-Lopez, D., Natale-Pereira, A., & Byron, A. T. (2011). Defining and targeting health care access barriers. *J Health Care Poor Underserved*, 22, 562-575
- 179 Gardner, B. (2008). Health Equity Discussion Paper. Toronto Central LHIN [Electronic version]. Available: http://www.torontocentrallhin.on.ca/uploadedFiles/Home_Page/Report_and_Publications/Health%20Equity%20Discussion%20Paper%20v1.0.pdf
- 180 Gardner, B. (2008). Health Equity Discussion Paper. Toronto Central LHIN [Electronic version]. Available: http://www.torontocentrallhin.on.ca/uploadedFiles/Home_Page/Report_and_Publications/Health%20Equity%20Discussion%20Paper%20v1.0.pdf
- 181 Carrillo, J. E., Carrillo, V. A., Perez, H. R., Salas-Lopez, D., Natale-Pereira, A., & Byron, A. T. (2011). Defining and targeting health care access barriers. *J Health Care Poor Underserved*, 22, 562-575
- 182 Provincial Health Services Authority, Strategy Meeting: Reducing Health Inequities: Developing Health Equity Indicators & Targets Recommendations, Meeting Notes June 5, 2012

- 183 Kilpeläinen K, Aromaa A, and the ECHIM Core Group (Editors), Indicators: Development and Initial Implementation
Final Report Of The Echim Project, National Public Health Institute, 2008 [cited July 5, 2012] from: http://www.echim.org/docs/ECHIM_final_report.pdf
- 184 Lam R, Newman Z, Tri-Hospital Health Equity Data Collection Project Literature Review – Main Findings, March 3, 2010 [unpublished]
- 185 Pan-Canadian Public Health Network, Indicators of Health Inequalities, August 21, 2009. [cited June 19, 2012]
Available at: <http://www.phn-rsp.ca/pubs/ihi-idps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>
- 186 Gallaher G, et al, Measuring Equity of Care in Hospital Settings: From Concepts to Indicators (2009).
St.Michael's Hospital [cited July 10, 2012] from: http://www.stmichaelshospital.com/pdf/crich/measuring_equity.pdf
- 187 Canadian Institute for Health Information, *Reducing the Gaps in Health: A Focus on Socio-Economic Status in Urban Canada*, (Ottawa, Ont.: CIHI, 2008) [cited July 5, 2012] from: https://secure.cihi.ca/free_products/Reducing_Gaps_in_Health_Report_EN_081009.pdf
- 188 Gallaher G, et al, Measuring Equity of Care in Hospital Settings: From Concepts to Indicators (2009).
St.Michael's Hospital [cited July 10, 2012] from: http://www.stmichaelshospital.com/pdf/crich/measuring_equity.pdf

9.0 Appendices

Appendix A - Indicators of Health Inequalities in use by BC's Health Authorities

	Organizational goals/ priorities	Integration of equity & prevention into programs & services	Staff initiatives (training, communication, etc.)	Ad Hoc Data Requests	Other initiatives
Vancouver Coastal Health	<p>Goal #1 objectives: Reduce health inequities in 5 areas:</p> <ul style="list-style-type: none"> ■ equity of acute care; ■ removing barriers to primary care; ■ improving cultural competency in Aboriginal health care; ■ strengthening food security; and ■ healthy public policies that promote early childhood development 	<p>General population</p> <p>Balanced Scorecard (<i>below</i>)</p> <p>Equity indicator: Disparity ratio for life expectancy, by community, between those with the longest life expectancy versus those with the shortest life expectancy.</p> <p>Children - Early Development Instrument (working with HELP to determine those aspects of the EDI most amenable to a "health services" intervention).</p> <p>Aboriginal Population - (2008-2011 plan)</p> <ol style="list-style-type: none"> 1. Life expectancy at birth 2. Mortality rates (deaths due to all causes) 3. Youth suicide rates 4. Infant mortality rates 5. Diabetes rates 6. Childhood obesity 7. Increasing the number of Aboriginal health care professionals <p>http://aboriginalhealth.vch.ca/docs/AHWP.pdf</p>		<p>Public Health Surveillance Unit Team (Office of the Chief MHO) responds requests for data, for example:</p> <ul style="list-style-type: none"> ■ % of population 12+ with self-reported heart disease/ by household income /by HSDA. ■ Mental health acute care service utilization rate (per 100,000 population) & % of population 0-64 years on income assistance by LHA. ■ Life expectancy (years) at birth vs. average household income after-tax by LHA. ■ Potential years of life lost standardized rate (per 1,000 population) vs. education (aged 25-64 years) by LHA. ■ Diabetes disease rate (per 100,000 population) vs. education (aged 25-64 years) by LHA. 	<p>Some equity data is tracked, without being named as such, or being regularly or broadly reported on. For example:</p> <p>Seniors Fall & Injury Prevention Initiative</p>

	Organizational goals/ priorities	Integration of equity & prevention into programs & services	Staff initiatives (training, communication, etc.)	Ad Hoc Data Requests	Other initiatives
Vancouver Coastal Health				<ul style="list-style-type: none"> ■ Population (%) aged 12+ with self-reported heart disease/by income/by HSDA. ■ Injury rates by SES quintile for urban VCH: ER visits related to <ul style="list-style-type: none"> ▪ assaults & owner occupied dwellings/ household income after-tax/ Aboriginal status ▪ self-inflicted injuries & owner-occupied dwellings/ household income after-tax <p>The PHSU team, as well as the Decision Support team, also produce many health status or health utilization indicators where the disparity dimension is geography (e.g., by HSDA), age or gender.</p>	

	Organizational goals/ priorities	Integration of equity & prevention into programs & services	Staff initiatives (training, communication, etc.)	Ad Hoc Data Requests	Other initiatives
<p>Fraser Health Authority</p>	<p>Priority: Integrate equity & prevention across all FHA programs & services (from surgery to rehabilitation)</p> <p><i>Strategies:</i></p> <p>Work with providers, community partners & individuals to ensure healthy pregnancies & increase positive maternal health outcomes in particular with vulnerable women.</p> <p>Work in partnership to implement the Aboriginal Health Plan, designed to improve the health & wellness of the Aboriginal population & to close health gap.</p>	<p>Annual Population Health Profile:</p> <p>Age & sex breakdowns are standard for most indicators (hospital utilization, disease prevalence, mortality, etc).</p> <p>Breakdowns by ethnicity, income, & sex for exposure to second-hand smoke, tobacco use, fruit & veggie consumption, obesity, & physical activity levels.</p> <p>Low income prevalence; prevalence of lone-parent families; immigrant status; home language; rates of children in gov't care; employment status; income; homeless counts.</p> <p>Children - Early Development Instrument</p> <p>Equity & prevention, formative indicators:</p> <ul style="list-style-type: none"> ■ # of programs/ services engaged in equity & prevention activities ■ # or % of programs/ services that have prevention & equity parameters in their service 	<p>HE education & training sessions - formative indicators & evaluation (pre & post)</p> <p>HE Toolkit (for public health, pilot stage)</p> <p>Competency statements developed in partnership with PHABC</p> <p>PHSA Indigenous Cultural Competency Training for all front line staff & leaders (% of staff completing training.</p> <p>HE communication program (No indicators yet) - messages & materials that resonate with key stakeholders in health care & beyond</p>		<p>Program Based Marginal Analysis decision-making:</p> <ol style="list-style-type: none"> 1) Impact on the disparity in health status of vulnerable populations where there is a known health status gap; 2) Strategies optimize FHA's response to the needs of a population group(s) <p>Participation in research activities (e.g RePHS & ELPH)</p> <p>Environmental scan of equity activities has been updated</p>

	Organizational goals/ priorities	Integration of equity & prevention into programs & services	Staff initiatives (training, communication, etc.)	Ad Hoc Data Requests	Other initiatives
Fraser Health Authority		<p>Vulnerable Populations:</p> <p>Increase accessibility & cultural appropriateness of Public Health services for new immigrants & refugees & Aboriginal/First Nations communities.</p> <p>Increase accessibility of Public Health services to homeless/ street entrenched individuals.</p> <p>Indicators:</p> <ul style="list-style-type: none"> ■ Reduction in select morbidity/ mortality indicators within vulnerable populations ■ Increased capacity to collect race/ ethnicity service level data. Baseline data established for health inequity/health disparity. ■ Increased client satisfaction in accessing services for sub-populations. <p>Public Health (Promotion & Prevention) Harm Reduction Program:</p> <p>Increase harm reduction services, specifically needle distribution, to reduce the spread of blood-borne pathogens, including HIV & Hep C.</p>			

	Organizational goals/ priorities	Integration of equity & prevention into programs & services	Staff initiatives (training, communication, etc.)	Ad Hoc Data Requests	Other initiatives
Fraser Health Authority		<p>Indicators:</p> <ul style="list-style-type: none"> ■ Reduced incidence of HIV & Hepatitis C where IVDU is indicated as transmission route. ■ By March 31, 2013, FHA will double the number of clean needles distributed annually from 400,000 to 800,000. <i>Additional targets beyond 2013 to be established.</i> 			
Vancouver Island Health Authority	<p>Objective: Improved health of high needs populations</p> <p>Top priority is to improve health of high-needs populations (children & youth, rural & remote residents, Aboriginal people, people with chronic diseases, & homeless/hard to serve populations) through community partners.</p> <p>Have requested the collection of, and access to, data related to SDH (housing, income, employment, social support, etc.) to help reduce disparity ratio.</p>	<p>Equity tool for PH programs Designed to review existing programs & ensure that potential barriers to program access are identified.</p> <p>Collecting key “determinant” data in clinical documentation systems for all admitted persons including: housing status, marital status, primary source of income, employment status, sedentary lifestyle & social support.</p> <p>Focus on high needs populations in Cowichan Valley, Oceanside, Parkville</p>	<p>Child, Youth & Family Health team held a one-day workshop on public health roles in tackling health inequities. Team also planned a Learning Circle on HE to explore neighbourhood characteristics, local strategies & equity focused evaluation.</p>	<p>Exploring GIS to look at hospital re-admission rates for acute myocardial infarction by neighbourhood & community characteristics. May also conduct the same analysis for childhood immunizations & tobacco sales.</p>	

	Organizational goals/ priorities	Integration of equity & prevention into programs & services	Staff initiatives (training, communication, etc.)	Ad Hoc Data Requests	Other initiatives
Vancouver Island Health Authority		<p>Continue implementation of Aboriginal Health Plan including improving cultural safety training & continued partnership with the Aboriginal Health Council</p> <p>Continue implementation of Mental Health & Substance Use Services Plan to address mental health & substance use, focusing on high needs groups</p>			
Northern Health Authority	<p>Goal 3: Build relationships & partnerships with Aboriginal communities to improve the health status of the Aboriginal population</p> <p>Also, developing a framework that includes Ministry requirements & requests of POP health group (gender, ethnicity, age, geography, etc.)</p>	<p>Refreshing the regional Aboriginal health strategy in partnership with Aboriginal communities & organizations, in alignment with Tripartite Health Plan.</p> <p>Strengthening seven Aboriginal Health Improvement Committees, focusing on chronic disease management, mental health & substance use issues, discharge planning, & cultural competency.</p> <p>Developing community profiles & toolkits to help communities build on health strengths. May conduct community scans.</p>	<p>Achieving 100% completion of the PHSA Cultural Competency program by Board, Executive & Senior Management teams by the end of 2011/12.</p> <p>Using the IMAGINE model, population health goals & measures are embedded into service planning, using a "How to do Population Health Checklist".</p> <p>Managers are tracked on how many upstream population health initiatives are being pursued within the non-contract employee performance management system.</p>		<p>IMAGINE grants weighed heavily towards addressing health inequities.</p>

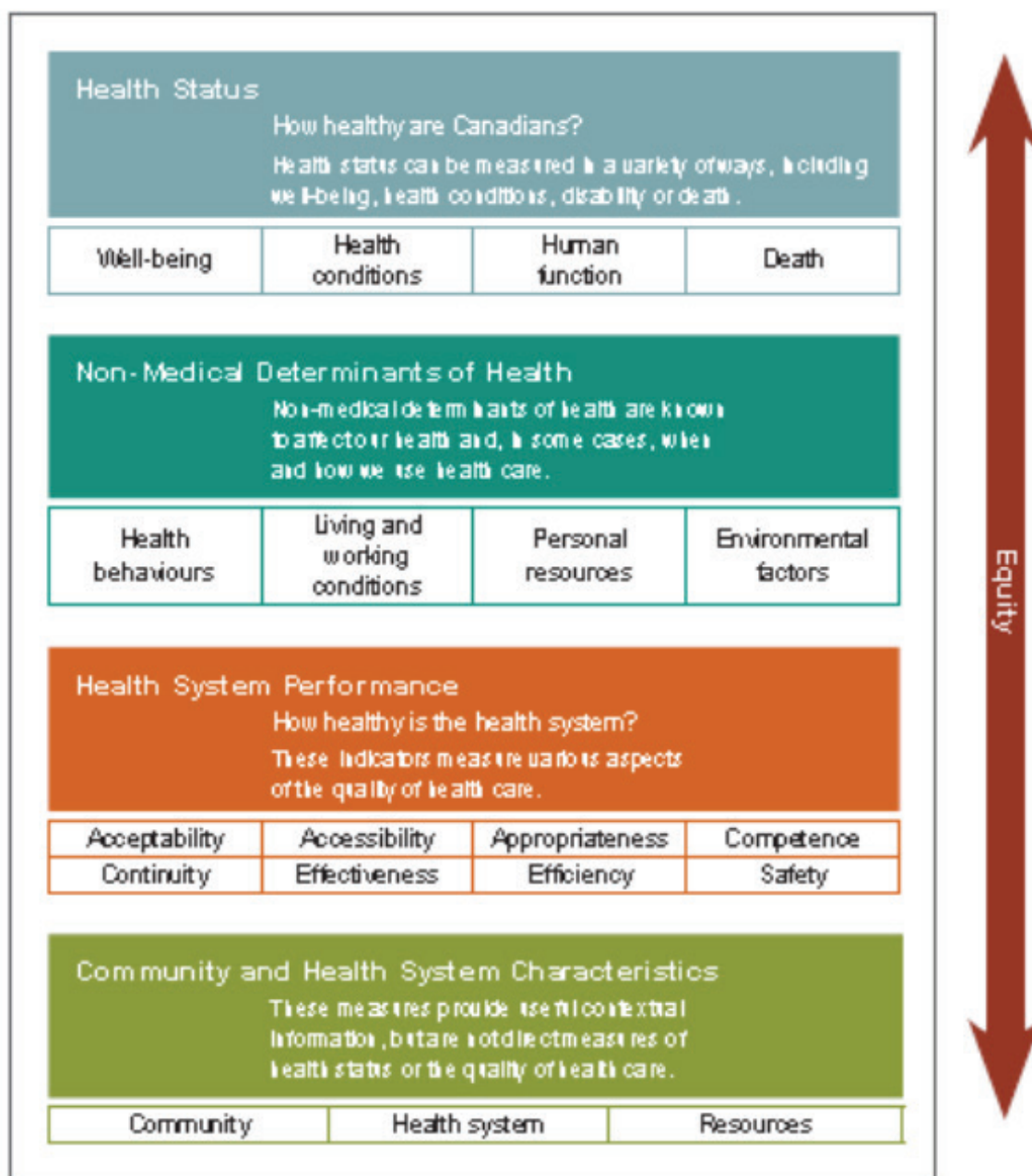
	Organizational goals/ priorities	Integration of equity & prevention into programs & services	Staff initiatives (training, communication, etc.)	Ad Hoc Data Requests	Other initiatives
Northern Health Authority		Partnering for Healthier Communities tracks upstream risk factors being addressed (priorities, participants, actions). Community Health Information Portal tracks & summarizes all population health data, widely available for planning purposes within NH & for external partners (w.r.t. specific risk factors & target populations.) E.g.: Men's Health report, Road Health, HIV, blood borne pathogens, community profiles & community health synopses, MHAS utilization data, suicide rates, etc.	Position papers are developed for Executive endorsement that represent an organizational approach to addressing various risk factors & form the basis of indicators of success.		
Interior Health Authority	Goal 1: Improve Health & Wellness, including "reduce health inequities"	Specific strategy for First Nations & Aboriginal communities Capturing self-reported Aboriginal status			
Provincial Health Services Authority	From Strategic Plan: Strategic Direction #2: Promoting Healthier Populations - Promote health in high risk populations.	PHSA maps & analyzes census data, stratified by income level, education & immigrant status to review for inequities. Uses the BC stats deprivation index & location to examine inequities by LHA.	Cultural competency provincial effort to improve the cultural competency of staff in relation to the Aboriginal population		

Organizational goals/ priorities	Integration of equity & prevention into programs & services	Staff initiatives (training, communication, etc.)	Ad Hoc Data Requests	Other initiatives
<p>Provincial Health Services Authority</p>	<p>Assess agencies, using 68 indicators to measure effectiveness, safety, access efficiency, continuity, patient-centered, work life, population focus</p> <p>Implements strategies to improve Aboriginal health care services in cancer, perinatal services, maternity and mental health and substance use services.</p> <p>Collaborates and leads initiatives that prevent disease progression and hospitalization through identification and appropriate referral of high risk patients.</p> <p>Improve childhood development – by mapping regional differences in birth weight; targeting improvements in prenatal care, birthing and infant care in those areas with the poorest outcomes, with a focus on aboriginal populations.</p> <p>Promote health in high risk populations – through primary prevention, early detection</p>			

Appendix B - Health Indicator Frameworks

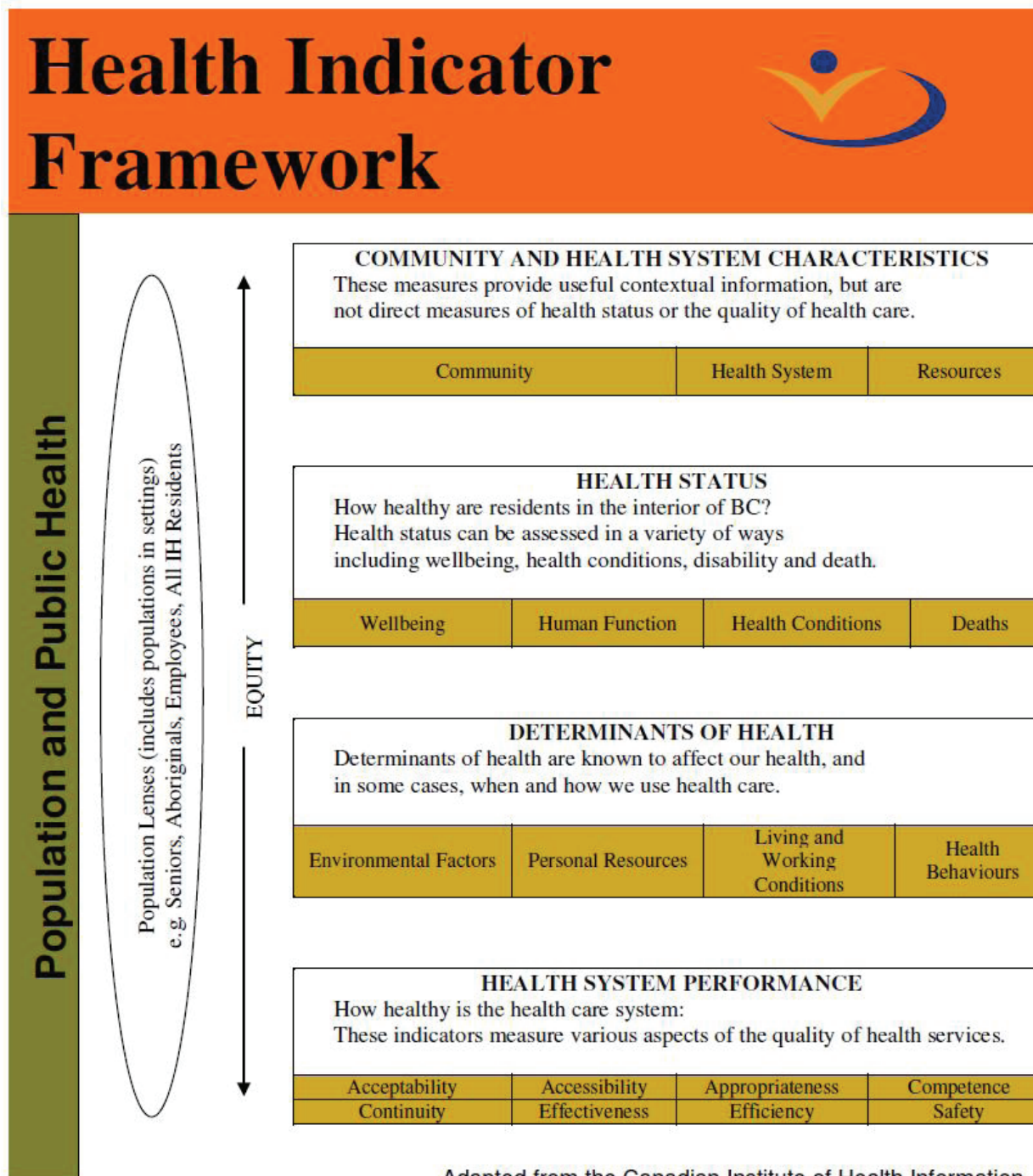
1. Canadian Health Indicators Project

Statistics Canada, Health Indicators Consensus Conference report: Report from the Third Consensus Conference on Health Indicators, March 2009. <http://www.statcan.gc.ca/pub/82-230-x/82-230-x2009001-eng.htm>



As adapted by Interior Health:

Note: the online version of this framework is no longer accessible.



Adapted from the Canadian Institute of Health Information

2. WHO Commission on Social Determinants of Health

A Conceptual Framework for Action on the Social Determinants of Health (2007)

http://www.who.int/social_determinants/resources/csdh_framework_action_05_07.pdf

This framework was developed to guide the work of the Commission on Social Determinants of Health. It was designed to answer the following questions:

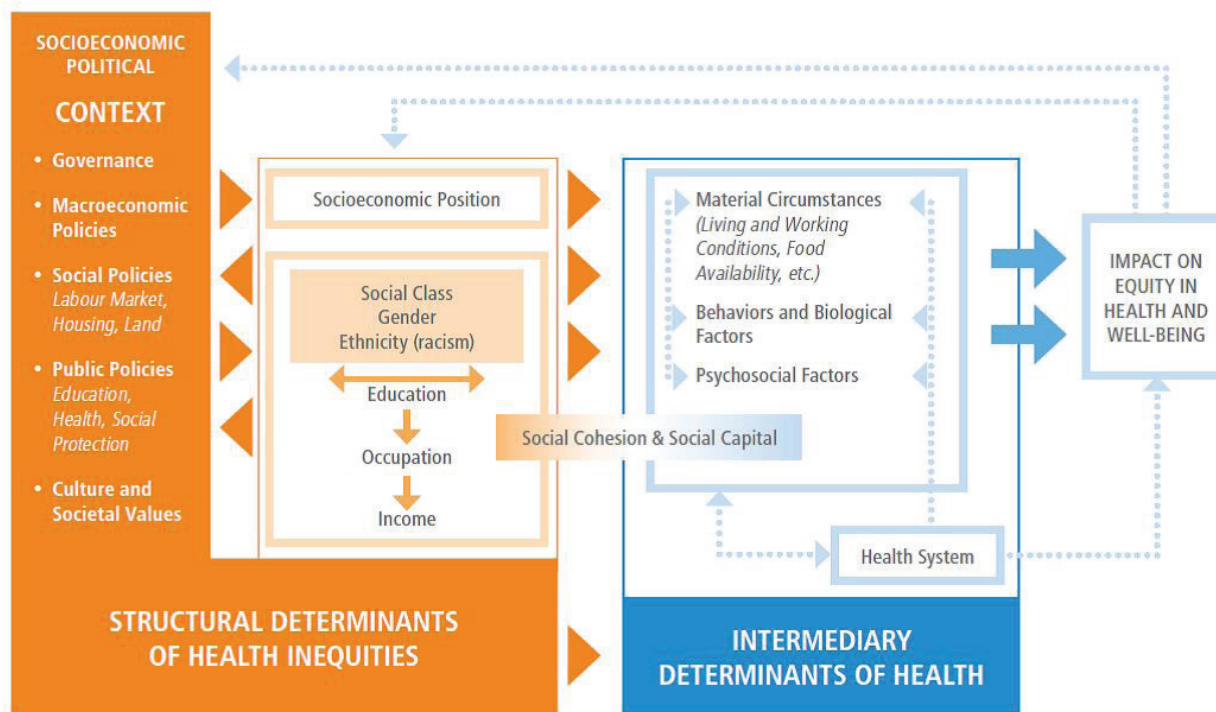
1. Where do health differences among social groups originate, if we trace them back to their deepest roots?
2. What pathways lead from root causes to the stark differences in health status observed at the population level?
3. In light of the answers to the first two questions, where and how should we intervene to reduce health inequities? (*Answered in a separate framework - #20 - WHO CSDH - Framework for Action on Tackling Social Determinants of Health Inequities*)

This framework was first drafted in May 2005 by CSDH Secretariat members Orielle Solar and Alec Irwin. Input was provided by other members of the Commission secretariat and the Commissioners themselves, with a revised draft submitted to CSDH Commissioners in June 2007, in Vancouver. A number of outside reviewers contributed to the discussion paper which formed the framework, including Canadians Ron Labonte and Ted Schrecker. It has been used in numerous European Union efforts, including "DETERMINE" - An EU Consortium for Action on SDH (ended June 2010), and by the Health Officers Council of BC.

The framework builds on three main theoretical directions of social epidemiology:

- (1) psychosocial approaches;
- (2) social production of disease/political economy of health; and
- (3) ecosocial theory and related multilevel frameworks.

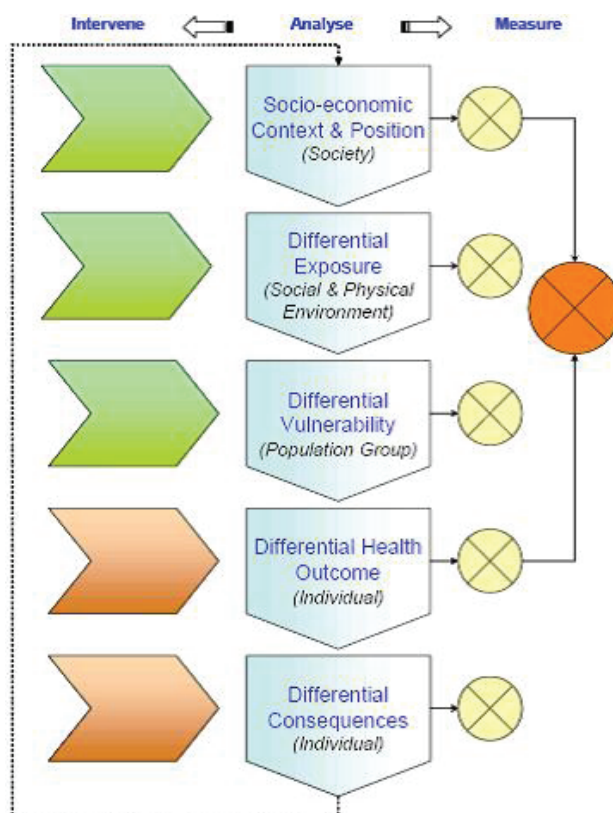
Figure 2. Conceptual framework of the social determinants of health



Source: Solar and Irwin, 2010⁶

Simplified Schematic Framework for Developing Health Disparities Indicators

WHO Commission on Social Determinants of Health, Scoping Paper: Priority Public Health Conditions, 2007. http://www.who.int/social_determinants/resources/pphc_scoping_paper.pdf. p. 14.



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.

Source: World Health Organization, *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 2008), page 181 http://www.who.int/social_determinants/final_report/en/index.html

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;

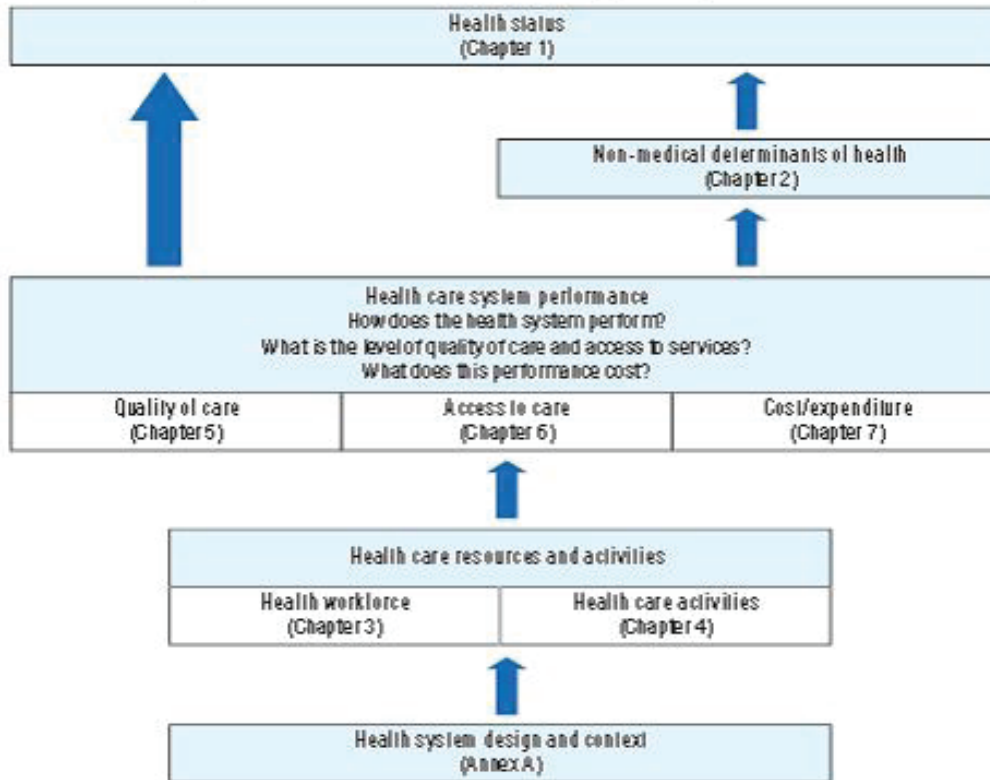
social consequences.

Source: World Health Organization, *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 2008), page 182 http://www.who.int/social_determinants/final_report/en/index.html

3. OECD Health at a Glance

<http://www.oecd.org/dataoecd/6/28/49105858.pdf>

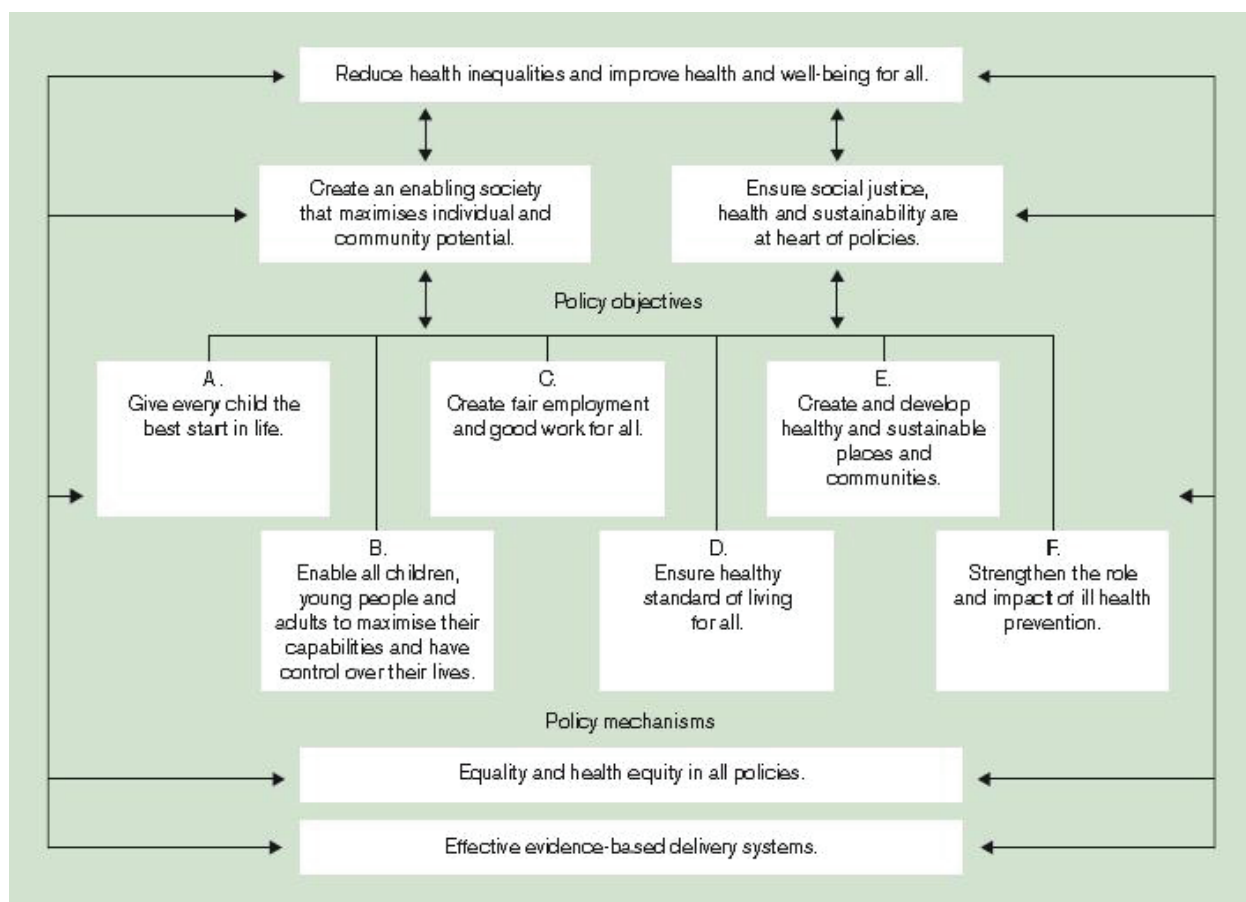
Figure 0.1. **Conceptual framework for health system performance assessment**



Source: Adapted from Kelley and Hurst (2006).

4. Marmot Review - Framework of indicators to assess performance improvement in delivering review recommendations (2010)

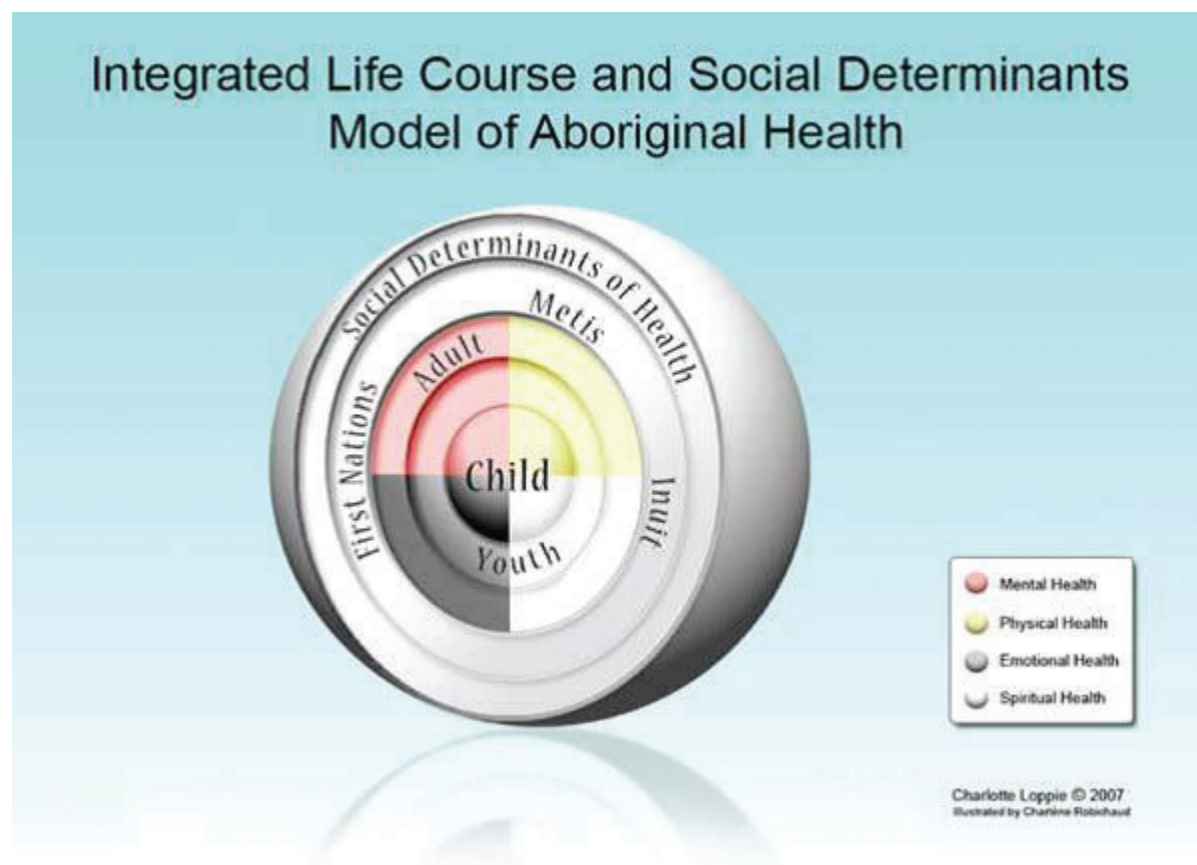
<http://www.instituteofhealthequity.org/projects/fair-society-healthy-lives-the-marmot-review>



5. The Integrated Life Course and Social Determinants Model of Aboriginal Health

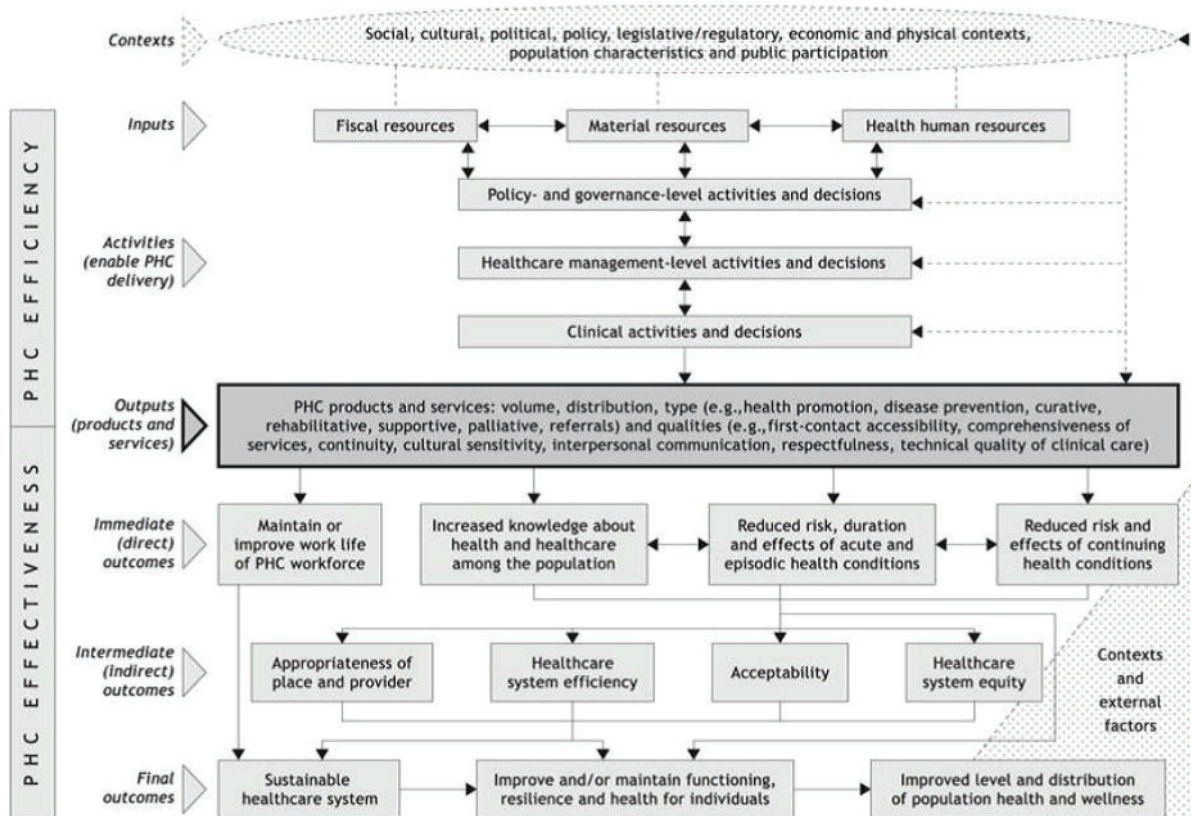
http://www.nccah-ccnsa.ca/docs/social%20determinates/NCCAH-loppie-Wien_report.pdf

This model conceptualizes the origin and influence of social determinants within distal, intermediate and proximal domains, based on Marmot's 2007 reference to the "causes of causes" of health. Proximal, intermediate and distal social determinants are filtered through socio-political contexts, life stages and health dimensions (physical, emotional, mental and spiritual) to shape overall well-being. The sphere reflects not only the multi-dimensionality of each domain of health and its social determinants, but also the interrelatedness of these domains. The model adds additional layers of abstraction to current Aboriginal health models, and reflects the complex and dynamic interplay of social, political, historical, cultural, environmental, economic and other forces that directly and indirectly shape Aboriginal health. The authors note that a particular advantage of the model is that it permits an exploration of potential trajectories of health influence across the life course.



6. Results-Based Logic Model for Primary Health

Wong, S. T., Browne, A. J., Varcoe, C., Lavoie, J., Smye, V., Godwin, O. et al. (2011). Enhancing measurement of primary health care indicators using an equity lens: An ethnographic study. <http://www.equityhealthj.com/content/10/1/38>



Also see: [Examples of the need to modify or develop PHC indicators: Inputs, Activities, Outputs](#)

Table 2 <http://www.equityhealthj.com/content/10/1/38/table/T2>

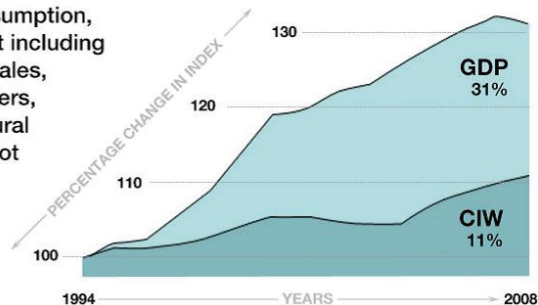
7. Canadian Index of Well-Being

<http://ciw.ca/en/TheCanadianIndexOfWellbeing.html>



HOW ARE CANADIANS REALLY DOING?

As a measure of economic consumption, GDP adds up every penny spent including on harmful activities. Tobacco sales, natural and human-made disasters, crime, war and depletion of natural resources all make GDP soar. Not surprisingly it provides a rather overly rosy view of how well Canadians are doing.



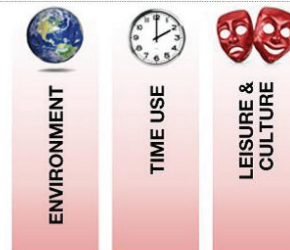
GETTING BETTER



The CIW adopts a much broader view of progress, adding activities that are beneficial and subtracting activities that are harmful to our society.

GETTING WORSE

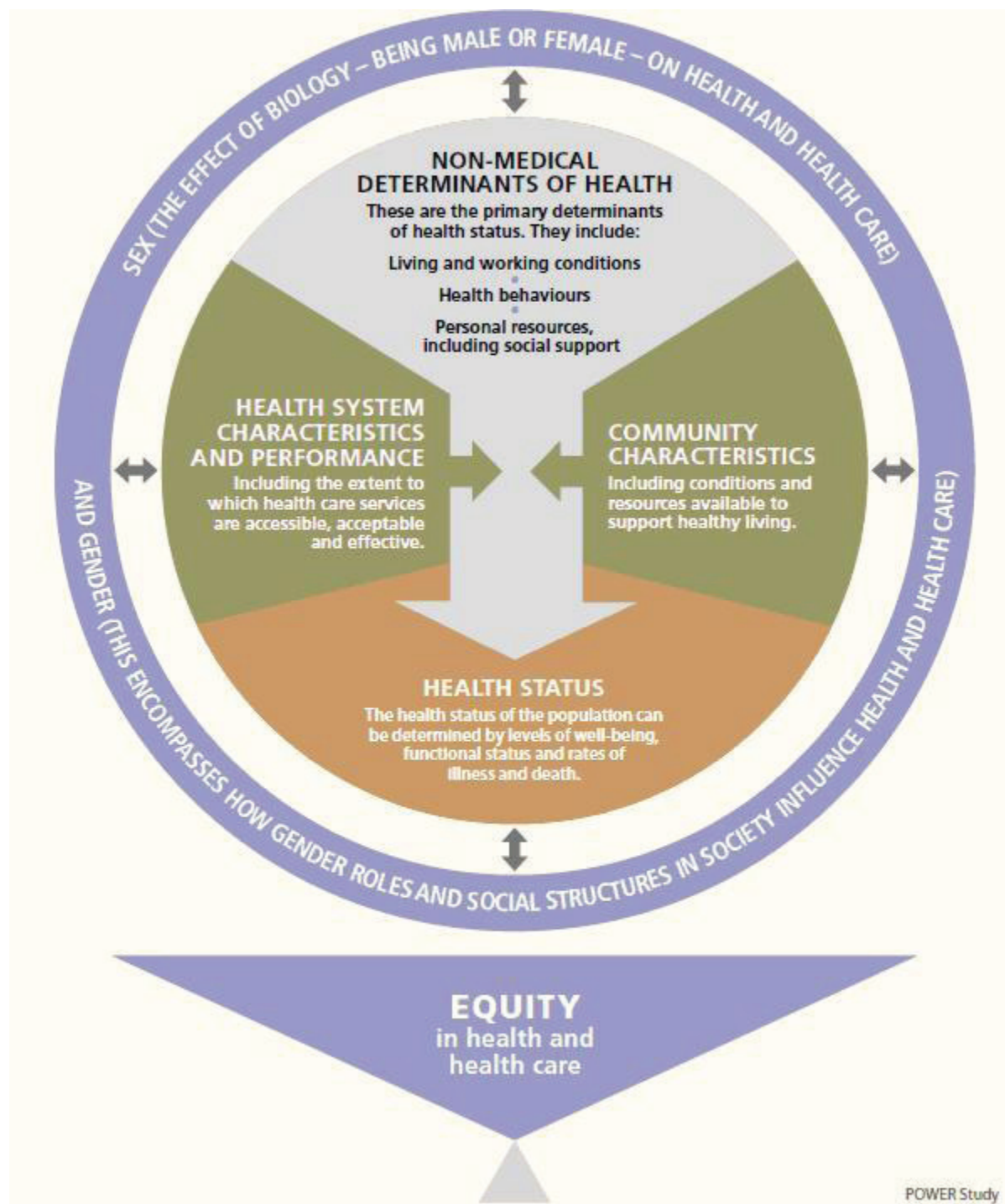
It gives a more realistic picture of our wellbeing, balancing gains in some areas against losses in others.



FIND OUT HOW CANADIANS ARE REALLY DOING »

8. Gender and Equity Health Indicator Framework Project for an Ontario Women’s Health Evidence-Based Report (2009)

http://www.powerstudy.ca/webfm_send/50



Key terms	Setting	Cross-cutting
<p>(indicator*/measure*/ marker*/ gauge*/assess*/audit*/index) AND</p> <p>(health equit*/health inequit*/ health equal*/health inequal*/ health status/determinants of health/utilization/quality of care/access to care/ deprivation)</p>	<ul style="list-style-type: none"> ■ health care system (acute care, primary care, community care) ■ health system ■ public health ■ chronic disease care ■ <i>other terms, as determined</i> <p>Each of the above terms taken in turn with</p> <p>(health equit*/health inequit*/ health status/ determinants of health/determinant of health/ uptake/frequency/utilization/ quality of care/access to care/ deprivation)</p>	<ul style="list-style-type: none"> ■ Challenge* /barrier*/ opportunit*/facilitator* ■ Names of specific barriers such as (politics, cost*, culture, awareness, etc.) ■ intersectoral
<p>(process*/approach*) AND (criteria/indicator*/measure*/ marker*/gauge*/index)</p>	<p>Phases:</p> <ul style="list-style-type: none"> ■ development ■ implementation ■ Evaluation/ measurement / assessment 	

Appendix C - Search Terms and Parameters

Phase I – Setting objectives and parameters

Refined focus and objectives – The objective of this project is to identify health equity indicators that will support actions that the health care system can take to reduce health inequities.

Clarification:

- We are primarily seeking indicators of **health status**, but will gather indicators of **determinants of health** as well (to be described separately in the report)
- **Access** and **quality of care** indicators to be included as well
- The health care system includes all current services provided by health authorities: acute care, community care, primary health care and public health care.

Focus:

1. Indicators
 - criteria to choose indicators (others groups have used, process to develop criteria, etc.)
 - health equity indicators and targets:
 - as they apply to health service planning and priority-setting, and clinical practice (directly influenced/impacted by the health care system)
 - as they apply across the life cycle
 - as assessed against existing data sources relevant to health equity and available in BC
2. Processes – a systematic approach to help reach consensus on a suite of recommended health equity indicators

Criteria for inclusion of literature - The review of bibliographic and other information sources will be guided by the following key search terms and search strings used to describe health equity indicators.

Dates: 2008 and later, with exceptions for milestone reports or key issues.

Appendix D - “Short-List” of Indicators Proposed for Further Exploration

Cross Cutting Equity Dimension	Definition
Income Quintile	Can measure income or more broadly, SES, in 20% increments
Aboriginal vs. Non-Aboriginal	
Urban vs. Rural	Statistical area classification (SAC), which codes census subdivisions. ⁱ
Immigrant vs. Non-Immigrant	
Persons Below Low-Income Cut-off vs. Persons Above LICO	LICO identifies households below which a family would be spending at least 20% or more than an average family on food, shelter and clothing. ⁱ
Education	level of education (elementary to secondary to university) ⁱ
Ethnicity	
Homelessness	Definition needs to be developed. Currently only collected by certain municipalities with inconsistent methodologies/ definition. (Vancouver) Source: Various municipalities ⁱⁱ
Age	Can be measured as specific age, or within groupings
Gender	Various options: male/female or broader categories that include lesbian, gay, bisexual, trans-gendered
Employment	Ratio of employment to population ⁱ
Neighbourhood Deprivation	Various options available, including INSPQ Deprivation Index, CAN-Marg, VANDIX

Health Status	Definition
Diabetes	<p>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.</p> <p>Source: Statistics Canada, Canadian Community Health Survey (CORE)ⁱⁱ</p>

Health Status	Definition
<p>Low Birth Weight</p>	<p>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.</p> <p>Source: Statistics Canada, Vital Statistics, Birth Database or PHAC ⁱⁱ</p>
<p>Overweight & Obesity</p>	<p>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).</p> <p>Source: Statistics Canada, Canadian Community Health Survey (CORE) ⁱⁱ</p>
<p>Life Expectancy (at birth and at 65)</p>	<p>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.</p> <p>Source: Statistics Canada, Vital Statistics, Death Database ⁱⁱ</p>
<p>Infant Mortality Rate (IMR) presented as:</p> <ul style="list-style-type: none"> - Crude IMR; and - IMR for live births \geq 500 grams 	<p>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.</p> <p>Source: Statistics Canada, Vital Statistics, Birth and Death Databases; and IMR for live births greater than or equal to 500 grams.</p> <p>Source: Birth-death linked file, PHAC (Health Surveillance and Epidemiology Division) ⁱⁱ</p>

Health Status	Definition
Hospitalization Composite Indicator for Mental Health Disorders	<p>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.</p> <p>Source: Discharge Abstract Database (CIHI), Ministère de la Santé et des Services Sociaux du Québec; Census 2001 and 2006 (Statistics Canada) ⁱⁱ</p>
Heart Disease	<p>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).</p> <p>Source: Statistics Canada, Vital Statistics, Death Database ⁱⁱ</p>
Perceived Health	<p>Population aged 12 and over who reported perceiving their own health status as being either excellent, very good, good, fair or poor.</p> <p>Source: Statistics Canada, Canadian Community Health Survey (CORE) ⁱⁱ</p>
Perceived Mental Health	<p>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.</p> <p>Source: Statistics Canada, Canadian Community Health Survey (CORE) ⁱⁱ</p>
Cancer	<p>Cancer: Total for all cancers</p> <p>Specific site codes:</p> <ul style="list-style-type: none"> ■ 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). <p>Age-standardized rate of new primary sites of cancer (malignant neoplasms) per 100,000 population.</p> <p>Source: Statistics Canada, Vital Statistics, Cancer Database, Canadian Cancer Registry ⁱⁱ</p>

Health Status	Definition
Unintentional Injuries	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 ⁱⁱ
Violence and Abuse	

Health System Performance	Definition
Hospital Re-admission Rate	
Ambulatory Care Sensitive Conditions	Age-standardized acute care hospitalization rate for conditions where appropriate ambulatory care prevents or reduces the need for hospitalization, per 100,000 population younger than age 75. Examples include grand mal status and other epileptic convulsions, chronic obstructive pulmonary disease, asthma, heart failure and pulmonary edema, hypertension, angina and diabetes. Sources: Discharge Abstract Database, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec. ⁱⁱⁱ
Visits to Dental Professional in Last 12 months	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) ⁱⁱ
Preventative Health Services (Mammography, Pap Screening)	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) ⁱⁱ
Child immunization Rates (DPT and MMR)	Coverage estimates for diphtheria, 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 ⁱⁱ
Access to GP	Number of GPs; population with no regular doctor ^{iv}

Non-Medical Determinants of Health	Definition
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) ⁱⁱ
Leisure Time Physical Activity	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) ⁱⁱ
Dietary Practices – Consumption of Fruits and Vegetables (Healthy Food Choices)	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) ⁱⁱ
Exposure to Secondhand Smoke at Home, in Vehicles & Public	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: Nonsmoking 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) ⁱⁱ

Non-Medical Determinants of Health	Definition
<p>Alcohol Use</p>	<p>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.</p> <p>Source: Statistics Canada, Canadian Community Health Survey (CORE) ⁱⁱ</p>
<p>Breastfeeding Practices</p>	<p>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.</p> <p>Source: Statistics Canada, Canadian Community Health Survey (CORE) ⁱⁱ</p>

Non-Medical Determinants of Health	Definition
Early Childhood Development (EDI)	<p>Domains include:</p> <ul style="list-style-type: none"> ■ 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 <p>“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).</p> <p>Source: EDI (Early Development Instrument) ⁱⁱ</p>
Sense of Community Belonging	<p>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.</p> <p>Source: Statistics Canada, Canadian Community Health Survey (CORE) ⁱⁱ</p>
Substance Use	<p>Drug use; number of syringes used per drug user.ⁱⁱⁱ</p>

Sources:

- i Canadian Institute for Health Information, *Reducing the Gaps in Health: A Focus on Socio-Economic Status in Urban Canada*, (Ottawa, Ont.: CIHI, 2008) [cited July 5, 2012] from: https://secure.cihi.ca/free_products/Reducing_Gaps_in_Health_Report_EN_081009.pdf
- ii Pan-Canadian Public Health Network, *Indicators of Health Inequalities*, August 21, 2009. [cited June 19, 2012] Available at: <http://www.phn-rsp.ca/pubs/ihl-idps/pdf/Indicators-of-Health-Inequalities-Report-PHPEG-Feb-2010-EN.pdf>
- iii Statistics Canada and the Canadian Institute for Health Information, *Health Indicators 2012*, Ottawa.
- iv Ministère de la Santé et des Services sociaux (2011), *Pour guider l'action: portrait de santé du Québec et de ses régions- Les statistiques*. Gouvernement du Québec, [cited July 10, 2012] from: <http://publications.msss.gouv.qc.ca/acrobat/f/documentation/2011/11-228-01F.pdf>

Appendix E - Characteristics of Ideal Indicators

Common Characteristics	V. Etches et al. ¹	NCCDH ²	Population Health Promotion Expert Group (2009) ³	Health Indicators Consensus Conference ⁴	St. Michael's Hospital ⁵ (for hospital settings)	Representative for Children and youth (BC) ⁶	Canadian Index of Well-Being ⁷	Child Health and Well-being Indicators Project ⁸
Developed through consensus	✓	✓					An open, transparent, and democratic consultative review process	
Based on a framework	✓	✓						
Valid	✓	✓	✓	Valid measure of an important health issue	Evidence of previous use; endorsement	Valid both for the general population and for diverse populations	✓	Use rigorous methods - objective statistical measures gathered through sound research techniques
Sensitive	✓	✓				Predictive - forward-looking so that indicators guide changes/improvements in child well-being.	✓	
Specific	✓							
Feasible	✓	✓			✓	✓		

Common Characteristics	V. Etches et al. ¹	NCCDH ²	Population Health Promotion Expert Group (2009) ³	Health Indicators Consensus Conference ⁴	St. Michael's Hospital ⁵ (for hospital settings)	Representative for Children and youth (BC) ⁶	Canadian Index of Well-Being ⁷	Child Health and Well-being Indicators Project ⁸
Actionable			✓ and important	✓		There is a short "causal chain" from action to an improvement in the conditions children experience or to their outcomes.		Relevant to policy: amenable to effective action through policy, programs and services
Based on available data			Available at nat'l, prov/terr and regional and sub-regional levels, or which are feasible to develop.	Available at at nat'l, prov/terr and regional and sub-regional levels or which are feasible to develop.			easy to obtain, and periodically updated	
Reliable	✓ and sustainable	✓ and sustainable	✓	✓		✓ both for the general population and for diverse populations	✓	
Understandable	✓	✓	Clear and accepted normative interpretation	Clear, interpretable,		✓ Clear to the general public and by policy makers	✓	✓ by decision-makers, the media, advocacy groups and the general public
Timely	✓	✓					✓	

Common Characteristics	V. Etches et al. ¹	NCCDH ²	Population Health Promotion Expert Group (2009) ³	Health Indicators Consensus Conference ⁴	St. Michael's Hospital ⁵ (for hospital settings)	Representative for Children and youth (BC) ⁶	Canadian Index of Well-Being ⁷	Child Health and Well-being Indicators Project ⁸
Comparable	✓	✓		Based on standard and therefore comparable definitions and methods	Transferable		✓ across jurisdictions and groups	✓ Based on standard and comparable definitions, across population sub-groups Pcomparable across jurisdictions
Relevant			Capture the essence of the issue	Measure of an important health issue	Applicable to equity	Worth measuring –represents a significant and relevant aspect of healthy functioning or the context in which children live.	Relevant to the concerns of main target audiences; Contributes to a coherent and comprehensive view of wellbeing of Canadians	Significant - measuring things that make the most difference towards improving the well-being of children

Common Characteristics	V. Etches et al. ¹	NCCDH ²	Population Health Promotion Expert Group (2009) ³	Health Indicators Consensus Conference ⁴	St. Michael's Hospital ⁵ (for hospital settings)	Representative for Children and youth (BC) ⁶	Canadian Index of Well-Being ⁷	Child Health and Well-being Indicators Project ⁸
Other:	Flexible for use at different organizational levels				Adaptable	Comprehensive – the set of indicators covers the wide scope of child well-being included in our definition.	Politically unbiased; Objective or subjective; Positive or negative; A constituent or determinant of wellbeing, or both; Attributable to individuals or groups of animate or inanimate objects.	Capable of producing estimates for key subgroups: comparable on variables such as age, sex, SES, location or cultural background

1 V. Etches et al. "Measuring Population Health: A review of indicators," Annual Review of Public Health, 2006, Vol. 27, pp. 29–55.

2 National Collaborating Centre for Determinants of Health, Selecting indicators for measuring health inequities, Purposeful Reporting to Advance Health Equity: Making it Possible in Canada, CPHA Pre-Conference workshop, June 11, 2012.

3 Population Health Promotion Expert Group (PHPEG.) Indicators of Health Inequalities Workshop - Facilitator's Report. 2009. (cited in Pan-Canadian report)

4 Statistics Canada, Health Indicators Consensus Conference report: Report from the Third Consensus Conference on Health Indicators, March 2009. [cited June 19, 2012] Available at: <http://www.statcan.gc.ca/pub/82-230-x/82-230-x2009001-eng.htm>

5 St.Michael's Hospital, Measuring Equity of Care in Hospital Settings: From Concepts to Indictors, May 2009 [cited July 6, 2012] from: http://www.stmichaelshospital.com/pdf/crich/measuring_equity.pdf

6 Representative for Children and Youth. Growing up in BC. British Columbia: Office of the Provincial Health Officer. October, 2010[cited June 19, 2012] from: <http://www.health.gov.bc.ca/library/publications/year/2010/growing-up-in-bc.pdf>

7 Michalos, A.C., Smale, B., Labonté, R., Muharjarine, N., Scott, K., Moore, K., Swystun, L., Holden, B., Bernardin, H., Dunning, B., Graham, P., Guhn, M., Gadermann, A.M., Zumbo, B.D., Morgan, A., Brooker, A.-S., & Hyman, I. (2011). The Canadian Index of Wellbeing. Technical Report 1.0. Waterloo, ON: Canadian Index of Wellbeing and University of Waterloo. [cited July 4, 2012] from: http://ciw.ca/reports/en/Reports%20and%20FAQs/Canadian_Index_of_Wellbeing-TechnicalPaper-FINAL.pdf

8 Office of the Provincial Health Officer (2010), Child Health and Well-being Indicators Project: Revised Health and Well-being Framework and Indicator Selection Criteria

BC Health Quality Matrix

Appendix F - BC Health Quality Matrix

AREAS OF CARE	DIMENSIONS OF QUALITY				
	ACCEPTABILITY	APPROPRIATENESS	ACCESSIBILITY	SAFETY	EFFECTIVENESS
STAYING HEALTHY Preventing injuries, illness, and disabilities	Care that is respectful to patient and family needs, preferences, and values	Care provided is evidence based and specific to individual clinical needs	Ease with which health services are reached	Avoiding harm resulting from care	Care that is known to achieve intended outcomes
GETTING BETTER Care for acute illness or injury					
LIVING WITH ILLNESS OR DISABILITY Care and support for chronic illness and/or disability					
COPING WITH END OF LIFE Planning, care and support for life-limiting illness and bereavement ⁴					
	EQUITY Distribution of health care and its benefits fairly according to population need EFFICIENCY Optimal use of resources to yield maximum benefits and results DIMENSIONS OF QUALITY				

⁴ Descriptor reflects direction of the Ministry of Health and input from the Provincial End of Life Standing Committee.

In 2008, the BC Health Quality Matrix was developed in collaboration with the members of the Health Quality Network which included BC's Health Authorities, Ministry of Health Services, academic institutions and provincial quality improvement groups and organizations.

www.bcpsqc.ca