

Social Determinants of Health and Equity Standards at CIHI

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Health Terminology Standards Virtual Mini Conference:
Incorporating Social Determinants of Health (SDOH) into
Digital Health Systems

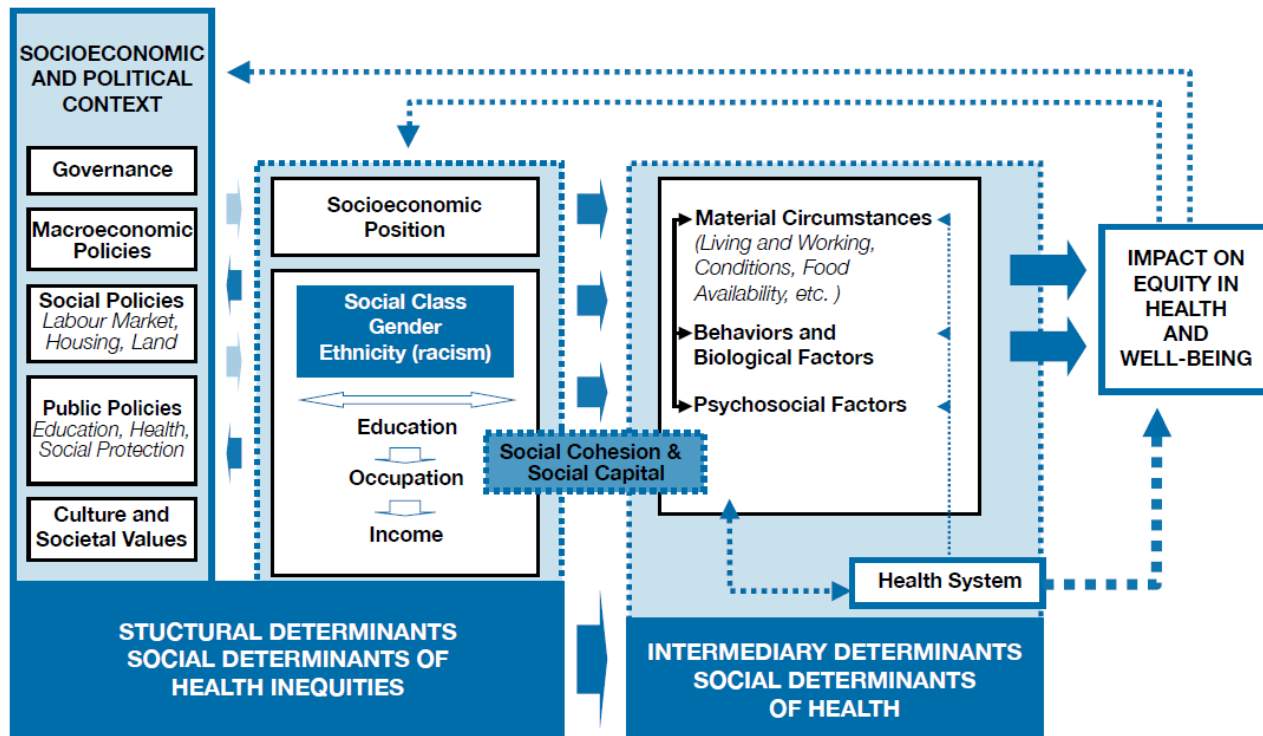
Canadian Institute for Health Information

Presentation Overview

- **Structural and Social Determinants of Health**
- **Equity Approach at CIHI**
 - Stratifier Standards
 - Inequality Measures
 - Data and Reporting
 - Inequality Resources
- **Future Work at CIHI**



Structural and Social Determinants of Health



Source: WHO. A Conceptual Framework for Action on the Social Determinants of Health, 2010

SOCIAL DETERMINANTS OF HEALTH

determine 75% of our overall health

Social Determinants of Health

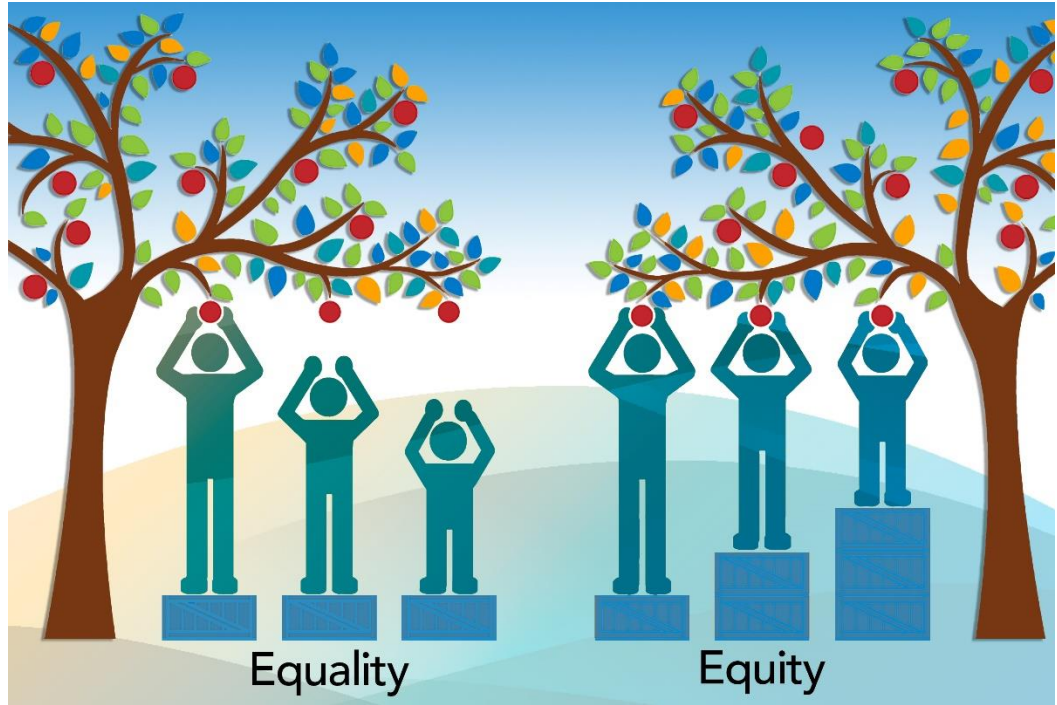
- CIHI Measuring Health Inequalities: An Introduction
<https://youtu.be/mMPZUZ6koVs>



Definitions: Equity, Equality, Inequality & Stratifier

HEALTH EQUITY

The absence of *unjust, avoidable differences* in health care access, quality or outcomes



Inequity ↑

Definitions: Equity, Equality, Inequality & Stratifier

HEALTH INEQUALITY

Measured differences between subpopulations that are determined by disaggregating health indicators (e.g. asthma rates) using equity stratifiers

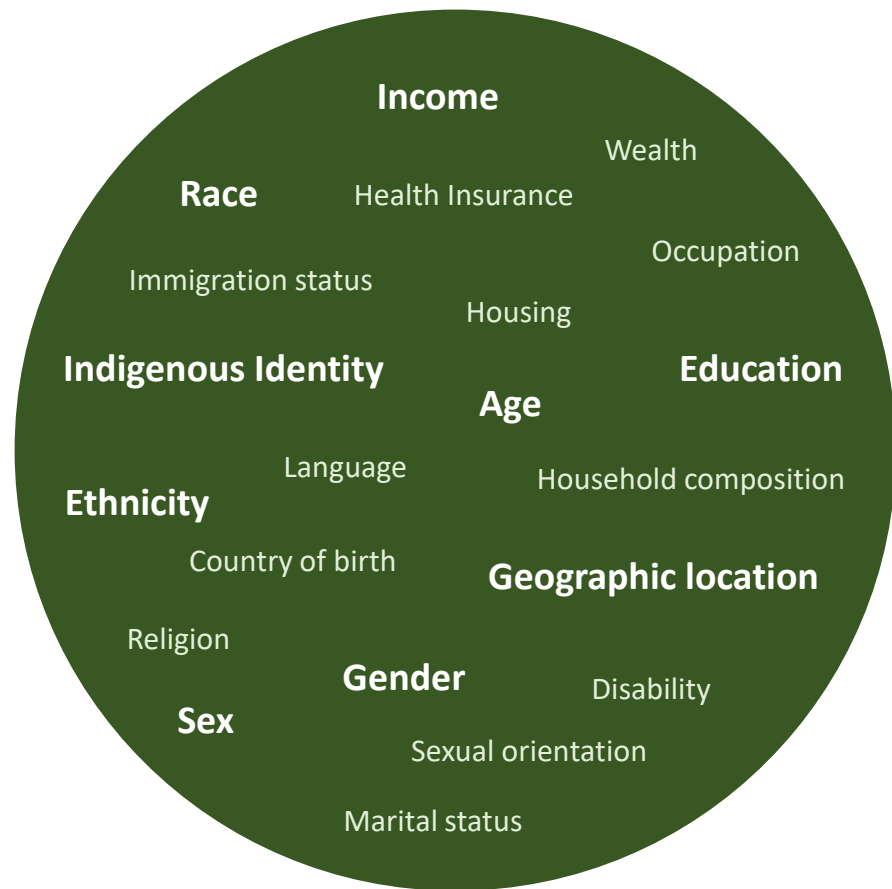
EQUITY STRATIFIER

A characteristic such as *age, sex, income* that can identify population subgroups in order to measure differences in health and health care

Equity Approach at CIHI



Dialogue to prioritize stratifiers for pan-Canadian reporting of health inequalities



CIHI – Stratifier Standards



In Pursuit of Health Equity: Defining Stratifiers
for Measuring Health Inequality

A Focus on Age, Sex, Gender, Income,
Education and Geographic Location

April 2018

2018 REPORT RELEASE

- Age
- Sex (assigned at birth)
- Gender (lived gender)
- Income
- Education
- Geographic Location
(urban/rural-remote)

CIHI – Stratifier Standards

Stratifier	Construct	Measure
Age	Age in years	Determine based on indicator
Sex (assigned at birth)	Assigned at birth	Male, Female
Gender (lived gender)	Lived gender	Female gender, male gender, gender diverse
Income	Relative income	Income quintiles
Education	Educational attainment	5 categories
Geographic location	Urban and rural/remote place of residence	Urban, Rural/remote statistical area classification

NEXT STEPS: Continue to update with new standards and explore opportunities to include stratifiers within CIHI data bases (e.g. via linkages)

CIHI – Stratifier Standards



Proposed Standards for Race-Based and
Indigenous Identity Data Collection and
Health Reporting in Canada

2020 DISCUSSION DOCUMENT RELEASED

- Race-based standards
- Indigenous identity standards

CIHI Race and Ethnicity: Some key learnings

- **Race and ethnicity are frequently misunderstood and conflated in data collection standards, surveys and discourse**
 - Greater understanding of these terms will enhance data collection on population subgroups
- **Race is a social construct most often characterized by phenotype or perceived physical differences (e.g. skin colour)**
 - Data can help identify inequalities that may stem from bias or racism
- **Ethnicity is multi-dimensional and refers to a sense of group belonging based on shared characteristics such as geographic origins, cultural traditions, language and/or religion**
 - Data useful for informing culturally appropriate care and health program planning

CIHI's Proposed Race-Based Data Standard

Proposed race-based question	
We know that people of different races do not have significantly different genetics. But our race still has important consequences, including how we are treated by different individuals and institutions. Which race category best describes you? Check all that apply:	
Proposed response categories	Examples
Black	African, Afro-Caribbean, African Canadian descent
East/Southeast Asian (optional: may collect as 2 separate categories — East Asian and Southeast Asian)	Chinese, Korean, Japanese, Taiwanese descent or Filipino, Vietnamese, Cambodian, Thai, Indonesian, other Southeast Asian descent
Indigenous (First Nations, Métis, Inuk/Inuit)*	First Nations, Métis, Inuk/Inuit descent
Latino	Latin American, Hispanic descent
Middle Eastern	Arab, Persian, West Asian descent (e.g., Afghan, Egyptian, Iranian, Lebanese, Turkish, Kurdish)
South Asian	South Asian descent (e.g., East Indian, Pakistani, Bangladeshi, Sri Lankan, Indo-Caribbean)
White	European descent
Another race category	Includes values not described above
Do not know	Not applicable
Prefer not to answer	Not applicable

Note

- * It is recommended that reporting on Indigenous identity data and communities be informed through engagement with Indigenous communities in the jurisdiction of data collection. Distinctions-based approaches — that is, identifying First Nations, Inuk/Inuit and Métis communities and/or other Indigenous populations such as nations or clans — may be preferred.

CIHI's Proposed Indigenous Identity Standard

Proposed Indigenous identity question*
Do you identify as First Nations, Métis and/or Inuk/Inuit?
Proposed response categories
Yes (if yes, select all that apply: First Nations, Métis, Inuk/Inuit)
No
Prefer not to answer

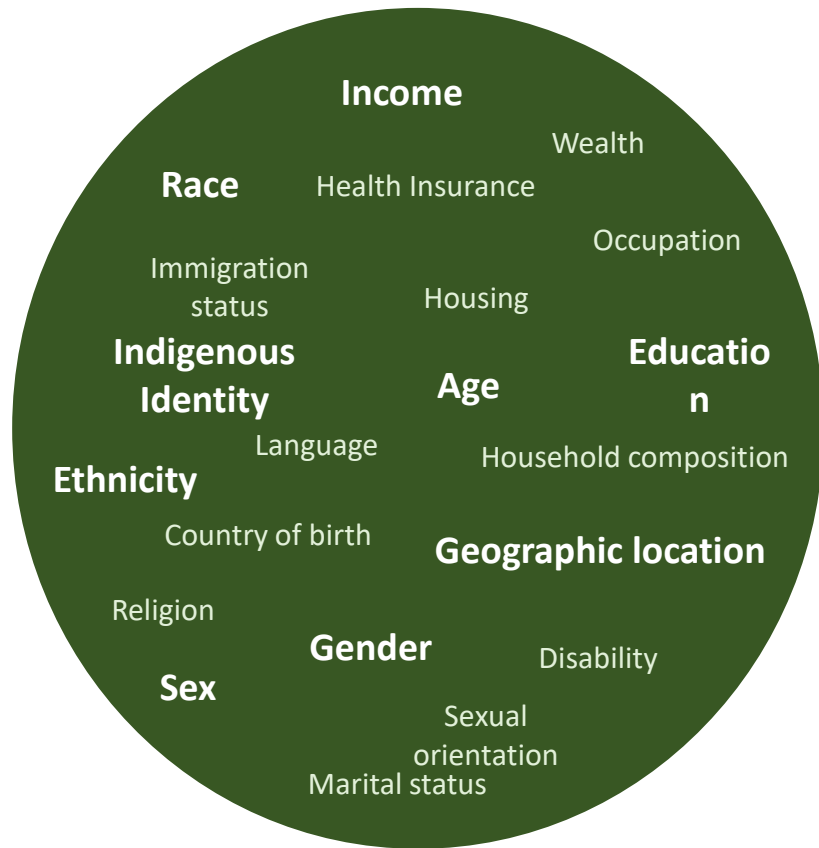
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Proposing a separate distinctions-based question on Indigenous identity to allow for flexibility in the way Indigenous people choose to self-identify

NEXT STEPS: Engagement with stakeholders, particularly racialized and Indigenous communities, finalize standards followed by public release

Considerations for the development of other stratifiers



- Revisit the Pan-Canadian Dialogue report and prioritization process

Highly rated stratifiers included:

- Housing
- Disability
- Language for receiving care
- Health insurance
- Immigrant status
- Sexual orientation

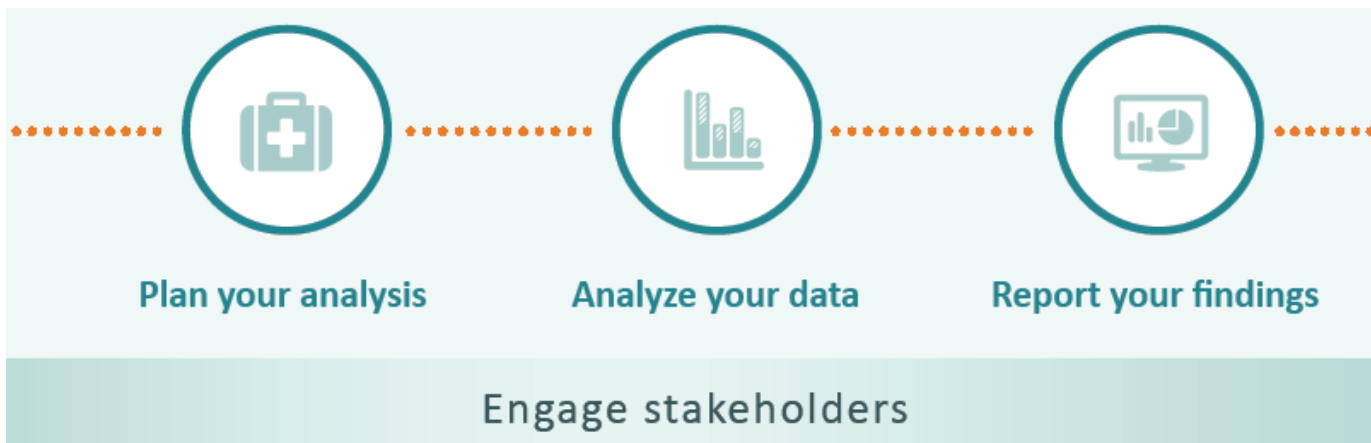
Criteria for Stratifier Selection

- Strength of evidence: stratifier is associated with access, quality and/or outcomes of health care
- Actionability: inequalities can be addressed through policy or program intervention at the clinical or health care system level
- Availability and use: definition exists that is standard, valid and reliable and has been used to measure inequality in health care in your jurisdiction
- Acceptability: stratifier information would be willingly provided by Canadians without concerns over privacy and/or data ownership
- Relevance: Stratifier reflects a priority population for improving access, quality and outcomes of health care within your jurisdiction

Measuring Health Inequalities: A Toolkit



- Assist analysts and researchers with varying knowledge and skill sets
- Consists of guidelines and resources organized in 3 phases:



<https://www.cihi.ca/en/measuring-health-inequalities-a-toolkit>

Measuring Health Inequalities: A Toolkit

Plan your Analysis

Step	Resources
Review and Select equity stratifiers	<ul style="list-style-type: none">• In Pursuit of Health Equity: Defining Stratifiers for Measuring Health Inequality (PDF)• Proposed Standards for Race-Based and Indigenous Identity Data Collection and Health Reporting in Canada.• Pan-Canadian Dialogue to Advance the Measurement of Equity in Health Care: Proceedings Report (PDF).
Identify potential disaggregation (e.g. income and sex)	<ul style="list-style-type: none">• Literature Review Template (XLSX)
Explore approach for accessing equity stratifiers	<p>How to link data at the area level</p> <ul style="list-style-type: none">• Equity Stratifier Inventory (XLSX)• Area-Level Equity Stratifiers Using PCCF and PCCF+ (PDF) <p>How to link data at the individual level</p>
Create analysis plan	Analysis Plan Template (PDF)

Measuring Health Inequalities: A Toolkit

Analyze your Data

Step	Resources
Conduct stratified analysis	<ul style="list-style-type: none">• Area-Level Equity Stratifiers Using PCCF and PCCF+ (PDF)• SAS Macros and Methodology Notes (PDF)
Quantify inequalities using summary measures	<ul style="list-style-type: none">• Interpreting Health Inequalities to Inform Action (video)• SAS Macros and Methodology Notes (PDF)

Inequality Measures

Absolute

- Rate difference (simple)
- Slope Index of Inequality (complex)
- Absolute Concentration Index (complex)
- Between group variance (complex)

Relative

- Rate ratio (simple)
- Relative Index of Inequality (complex)
- Relative Concentration Index (complex)
- Population Attributable Fraction (simple)
- Health concentration index (complex)
- Mean log deviation (complex)
- Theil's index (complex)

Inequality Measures

ABSOLUTE

- **Rate difference (simple)**
- Slope Index of Inequality (complex)
- Absolute Concentration Index (complex)
- Between group variance (complex)
- **Population impact number (complex)**

RELATIVE

- **Rate ratio (simple)**
- Relative Index of Inequality (complex)
- Relative Concentration Index (complex)
- Population Attributable Fraction (**Potential rate reduction**) (complex)
- **Potential rate improvement (complex)**
- Health concentration index (complex)
- Mean log deviation (complex)
- Theil's index (complex)

Examples of inequality measures

Rate Ratio (Simple and Relative)

- **Definition:** A simple measure of the relative inequality between subgroups that is calculated by subtracting the rate of the comparison group by the rate of the reference group

All income Quintiles (2012)	Age-standardized rate (per 100,000)	Interpretation
Q1 (lowest)	161	The rate of hospitalization, death etc is 2.4 times higher in the lowest income quintile compared to the highest income quintile
Q2	103	
Q3	89	
Q4	76	
Q5 (highest)	68	
Rate Ratio (Q1 / Q5)	161 / 68=2.4	

Rate Difference (Simple and Absolute)

- **Definition:** A simple measure of the absolute inequality between subgroups that is calculated by subtracting the rate of the reference group from the rate of the comparison group

All income Quintiles (2012)	Age-standardized rate (per 100,000)	Interpretation
Q1 (lowest)	161	The difference in the rate of hospitalization, death, etc between the lowest income quintile and the highest income quintile is 93 per 100,000
Q2	103	
Q3	89	
Q4	76	
Q5 (highest)	68	
Rate difference (Q1 – Q5)	$161 - 68 = 93$	

Potential Rate Reduction (Complex and Relative)

- **Definition:** A complex measure of relative inequality that captures the potential reduction in a health indicator rate that would occur in the hypothetical scenario that each population subgroup experienced the same low rate as the subgroup with the most desirable rate. It is also commonly known as the population-attributable fraction or population-attributable risk

All income Quintiles (2012)	Age-standardized rate (per 100,000)	Interpretation
Q1 (lowest)	161	Approximately 32% of hospitalizations, deaths, etc could have been avoided if all income quintiles had the same rate as Q5 (highest income)
Q2	103	
Q3	89	
Q4	76	
Q5 (highest)	68	
Potential rate reduction %	31.6%	

Population Impact Number (Complex and Absolute)

- **Definition:** A complex measure of absolute inequality that captures the potential reduction in the number of cases or events for a health indicator that would occur in the hypothetical scenario that each population subgroup experienced the same rate as the subgroup with the most desirable rate. It captures the gradient of inequality across multiple categories, such as income quintiles

All income Quintiles (2012)	Age-standardized rate (per 100,000)	Interpretation
Q1 (lowest)	161	There could have been approximately 9,000 fewer Hospitalizations, deaths etc. if all income quintiles had the same rate as Q5 (highest income)
Q2	103	
Q3	89	
Q4	76	
Q5 (highest)	68	
Population impact number	9,000	

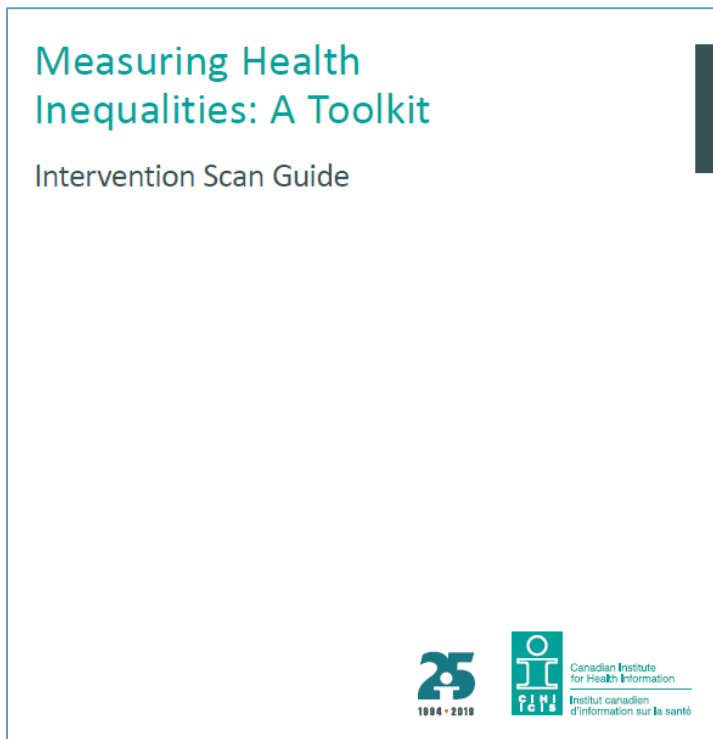
Measuring Health Inequalities: A Toolkit

Report your Findings

Step	Resources
Interpret results for key findings	<ul style="list-style-type: none">• Interpreting Health Inequalities to Inform Action (video)• Health Inequalities Interactive Tool
Present findings to your audience	<ul style="list-style-type: none">• Intervention Scan Guide (PDF)

Moving from Inequality Analysis to Action

Guide to assist in conducting a scan to identify interventions (strategies, policies, programs) that will reduce health inequalities associated with your health indicator of interest



Key resource: Area-Level Equity Stratifiers Using PCCF and PCCF+ Guide

- Main differences between PCCF and PCCF+
- Key considerations for use when measuring income- and geography-related inequalities
- Information on data quality and census geographies

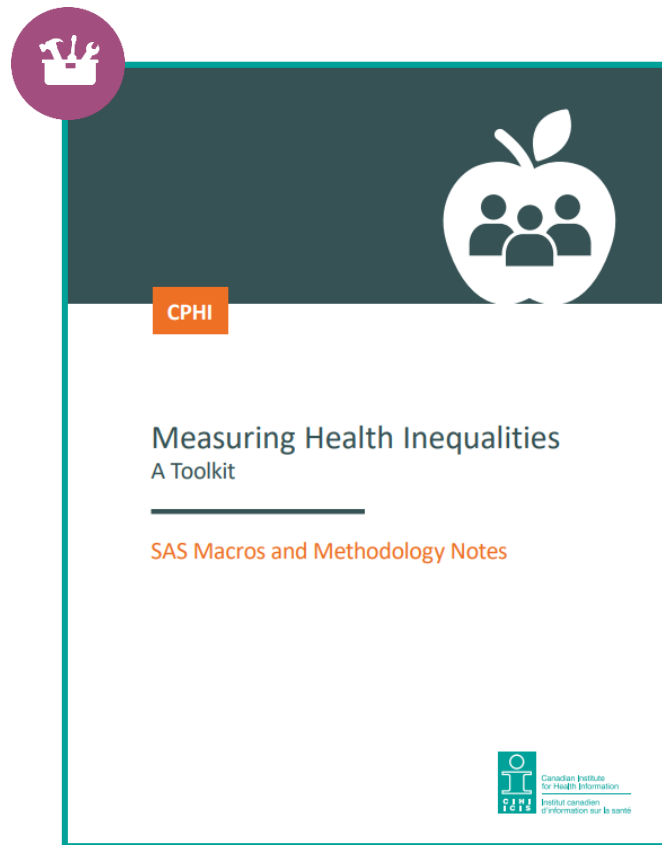


Measuring Health Inequalities: A Toolkit

Area-Level Equity Stratifiers Using PCCF and PCCF+

Key resource: SAS Macros and Methodology Notes

- Calculate indicator rates, as well as variance estimates, stratified by income and geographic location
- Calculate summary measures of inequality including rate ratios and rate differences



Key resources: Glossary and Supplementary Resources Infosheet



Glossary of Terms | October 1, 2018

Measuring Health Inequalities: A Toolkit — Glossary of Terms

absolute inequality: The magnitude of difference observed between population subgroups.

area-level analysis: Analysis using socio-economic or socio-demographic information aggregated by geographic areas such as neighbourhoods.

complex measure of inequality: A measure of inequality that incorporates data from all population subgroups (e.g., inequality across all income groups); it is a single number indicating the level of inequality. Examples include potential rate reduction (PRR) and population impact number (PIN).

composite index: An area- or individual-level measure consisting of a number of socio-demographic variables (or equity stratifiers) that aims to characterize the health status of an individual or population. Socio-demographic and socio-economic characteristics commonly used in calculating indices include income, education and unemployment (see the table).

deprivation index: A composite index that can identify population subgroups based on the level of deprivation using a number of variables (or equity stratifiers) (see *composite index*).

equity stratifier: A demographic, social, economic or geographic characteristic that can identify population subgroups for the purpose of measuring differences in health and health care that may be considered unfair and avoidable.

health equity: Absence of unfair and avoidable differences in health and health care access, quality or outcomes across the population. It is the ideal state in which all people are able to reach their full health potential and receive high-quality care that is fair and appropriate to them and their needs, no matter where they live, who they are or what they have.

health indicator: A measure designed to summarize information about a given priority topic in population health or health system performance. Health indicators provide comparable and actionable information across different geographic, organizational or administrative boundaries and/or can track progress over time.

health inequality: Any difference in health and health care access, quality or health outcomes between population subgroups. Health inequalities may be due to unavoidable biological and natural factors.



Resources | October 1, 2018

Measuring Health Inequalities: A Toolkit — Supplementary Resources

This document contains a list of organizations that have helpful resources to support planning for, analyzing and reporting on health inequalities. Many of these resources informed the development of CIHI's Measuring Health Inequalities: A Toolkit. If you have suggestions for this list, please email cphi@cihi.ca.

Table 1 Canadian organizations — National

Organization	Examples of resources
Canadian Council on Social Determinants of Health (CCSDH)	Communicating the Social Determinants of Health: Guidelines for Common Messaging (2013)
Canadian Institute for Health Information (CIHI)	Trends in Income-Related Health Inequalities in Canada (2015) Autism Hospitalizations Among Children and Youth in Canada: Trends and Inequalities (2018) CIHI's Indicator Library A Performance Measurement Framework for the Canadian Health System (2013) Health Inequalities
Canadian Research Data Centre Network (CRDCN)	Information on how to access Research Data Centres for Statistics Canada survey, census and administrative data sets Data set descriptions and resources (e.g., search data sets such as PCDF)
National Collaborating Centre for Determinants of Health (NCCDH)	A Guide to Community Engagement Frameworks for Action on the Social Determinants of Health and Health Equity (2013)
Public Health Agency of Canada (PHAC)	Health Inequalities Data Tool Key Health Inequalities in Canada: A National Portrait (2018)
Statistics Canada	Data available in the Research Data Centres (RDCs) Postal Code Conversion File Plus (PCCF+)

Inequality Resources at CIHI – Data and Reporting



Health Inequalities Interactive Tool

Richer Canadians tend to be healthier and live longer than poorer Canadians. Our [Trends in Income-Related Health Inequalities in Canada](#) project examined whether the country and its provinces have made progress in this area over the past decade.

Find out for yourself: **select an indicator** to explore health inequalities by year and changes over time at national and provincial levels.



Social Determinants

[Smoking](#)

[Obesity](#)



Quality of Care

[Influenza Immunization for Seniors](#)

[COPD Hospitalization, Younger Than Age 75](#)



Health Status

[Motor Vehicle Traffic Injury Hospitalization](#)

[Self-Rated Mental Health](#)

[Alcohol-Attributable Hospitalization](#)

[Hospitalized Heart Attacks](#)

[Diabetes](#)

Analysis

- Province
- By sex
- Income quintile

Measures

- Rate ratio
- Rate difference
- Potential rate reduction
- Population impact number

Note: CIHI's Health Inequalities Interactive Tool was recently updated by converting Flash-based content to HTML. As a result, you may notice inconsistencies

Health inequalities measurement and reporting at CIHI



Hospital Stays for Harm Caused
by Substance Use Among Youth
Age 10 to 24

September 2019

Chartbook
April 2018



Asthma Hospitalizations Among
Children and Youth in Canada:
Trends and Inequalities



Alcohol Harm in Canada
Examining Hospitalizations Entirely
Caused by Alcohol and Strategies
to Reduce Alcohol Harm



Trends in Income-Related Health Inequalities
in Canada

Technical Report

Revised July 2016



Drug Use Among Seniors
in Canada, 2016



Future Work for CIHI

- Expansion of selected equity stratifiers within CIHI data holdings
- Expanded analysis and reporting of health inequalities as stratifiers are added
- Continued stakeholder engagement related to future stratifiers, analysis and reporting





Questions?



Canadian Institute for Health Information

Better data. Better decisions. Healthier Canadians.

How to cite this document:

Canadian Institute for Health Information. *English Title*. Ottawa, ON: CIHI; 20XX.



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