Measuring Health Inequalities: A Toolkit

Intervention Scan Guide

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Table of contents

Purpose

This guide provides key information and considerations for conducting a scan to identify interventions (strategies, policies and programs) that reduce health inequalities associated with your health indicator of interest. It also includes guidance on how to use a template that the Canadian Institute for Health Information (CIHI) developed to help you structure and track your intervention scan. You can find this template at *Measuring Health Inequalities: A Toolkit — Intervention Scan Template*.

We have organized this guide and the accompanying Excel template into 3 steps:

Step 1: Develop a search strategy

Step 2: Document your search results

Step 3: Synthesize your search results

The Excel file includes a blank template and a sample template for each step. The sample templates have been completed using a case study on reducing inequalities in asthma hospitalizations among children and youth.

Before you begin

It is important to recognize that health inequalities are often caused by multiple factors, so any strategies to reduce health inequalities generally require a multi-pronged approach. For this reason, it is helpful to cast a wide net and consider a range of interventions and sources of evidence in your intervention scan. Depending on the target audience for your reporting, however, you might want to focus your scan on interventions that are most feasible or relevant to implement.

Range of interventions

1. **Consider interventions implemented directly within the health sector, as well as intersectoral interventions.**

   Both health sector and intersectoral interventions may be required to reduce health inequalities. The World Health Organization and the Public Health Agency of Canada define intersectoral action as "actions undertaken by sectors outside the health sector, possibly, but not necessarily, in collaboration with the health sector, on health or health equity outcomes or on the determinants of health or health equity."[1]

2. **Consider interventions that are targeted or universal, as well as interventions that apply a proportionate universal approach.** These are defined as follows:

   Targeted interventions: These interventions reduce inequalities by targeting action or removing barriers for specific population subgroups that are experiencing the greatest need.[2, 3] For example, smoking cessation programs can subsidize the cost of nicotine replacement therapies for individuals who do not have coverage for quit-smoking aids through extended health benefits, seniors programs, or private or third-party insurance.

   Universal interventions: These interventions are applied across the whole population, with the goal of establishing a safety net and providing everyone with access to essential services.[2, 3] These interventions may be operationally simpler to implement and have the potential to reduce inequalities across several population subgroups (e.g., along the entire income gradient). In some cases, universal interventions reduce inequalities by disproportionately benefiting specific population subgroups. For example, universal fiscal policies, such as increased cigarette pricing, generally have a greater positive impact on lower-income populations.

Proportionate universal interventions: These interventions encompass both universal and targeted approaches to ensure all population subgroups receive benefits and services proportionate to the level of inequality or need they experience.[3] When the gradient of inequality is steeper, more action should be concentrated on or targeted to the population subgroups with increased need. When the gradient is less pronounced, action can be distributed more equally across subgroups.[4] For example, smoking cessation programs can be provided to the whole population, together with specific services targeting lower-income population subgroups to reduce income-related inequalities in smoking prevalence.

Sources of evidence

To maximize your search results, it is helpful to consider a range of sources of evidence in your intervention scan.

As illustrated in the figure below, systematic reviews and meta-analyses published in the scientific literature are considered the highest quality of evidence with the lowest risk of bias.[5] However, you will also want to consider lower-quality sources to identify interventions, including sources in the grey literature, as they may include valuable information about the impacts of interventions on health inequality beyond what is available in the scientific literature.[6]

Casting your net wide is especially helpful given that, in Canada and internationally, there is a need for more evaluation of interventions to reduce health inequalities.[7] This is, in part, because rigorous evaluations of interventions tend to be complicated and expensive to implement.

Figure   Hierarchy of evidence
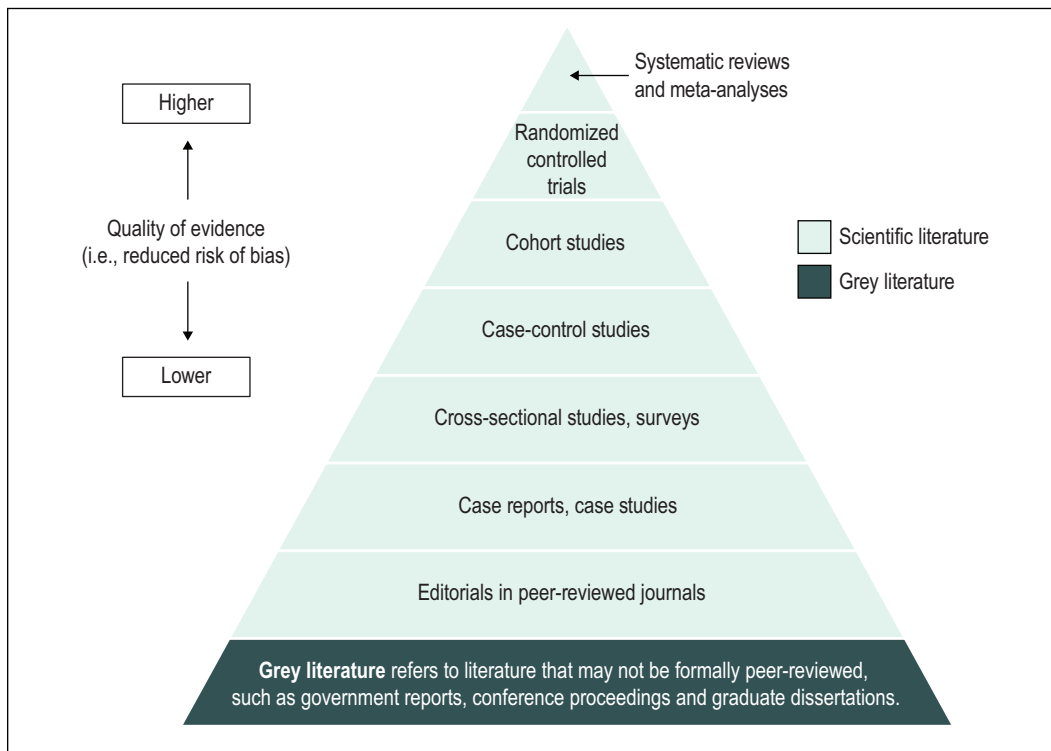
Source
Created by CIHI, based on various sources, including Evans D, Hierarchy of evidence: A framework
for ranking evidence evaluating healthcare interventions, *Journal of Clinical Nursing*, 2003.

The hierarchy of evidence outlines the general availability and quality of evidence.

Grey literature is the bottom level of the hierarchy. It includes literature that is not formally
peer-reviewed, such as government reports, conference proceedings and graduate dissertations.

The next 7 levels of evidence within the hierarchy are classified as scientific or peer-reviewed
literature. They are ranked from lower to higher quality of evidence, starting with editorials
in peer-reviewed journals, followed by case reports and case studies, cross-sectional studies
and surveys, case-control studies, cohort studies, randomized controlled trials, and systematic
reviews and meta-analyses.

Although grey literature is typically considered lower-quality evidence, it is important to
note that some grey literature sources may be of higher quality than some scientific literature
sources (e.g., editorials). These sources include reports from reputable and established
organizations such as CIHI, Statistics Canada and the Public Health Agency of Canada.
This is, in part, because government organizations often have access to rich, quality data
sets and can conduct extensive data linkages. They also engage a wide range of stakeholders
who can share expertise and relevant information.

Step 1: Develop a search strategy

The first step to conducting an intervention scan is to develop a search strategy. This includes identifying search terms and logic and identifying sources of scientific and grey literature.

For this step, refer to tables **1 Search terms template** and **1a Case study — Search terms** in the Excel file *Measuring Health Inequalities: A Toolkit — Intervention Scan Template*.

Identify search terms and logic

To generate ideas for search terms, consider

- Factors that influence the health indicator;
- Population subgroups that are affected by the inequality;
- Factors that might contribute to the inequality; and
- Interventions and settings to help reach your target population.

Factors that influence the health indicator: For any health indicator, there are many factors or determinants that can influence the indicator rate. To identify these factors, consider

- Downstream factors that directly affect the health indicator (e.g., primary care management directly affects asthma hospitalization rates); and
- Upstream factors that indirectly affect the health indicator (e.g., smoking legislation limits exposure to second-hand smoke, which leads to fewer asthma hospitalizations).

You can use these factors to generate key search terms.

- Search terms: primary care, second-hand smoke

Population subgroups that are affected by the inequality: This will include subgroups identified from your equity stratification analysis. For example, children living in lower-income neighbourhoods or in households with lower education levels have higher asthma hospitalization rates.

- Search terms: income, education

Factors that might contribute to the inequality: This can include a range of factors that contribute to worse indicator rates for specific population subgroups. For example, population subgroups with lower socio-economic status are more likely to live in areas with poorer housing quality where outdoor allergens, mould and other causes of asthma exacerbation are found. These environmental asthma triggers can contribute to higher asthma hospitalization rates among lower-income or lower-education population subgroups.

- Search terms: environment, indoor allergens

Interventions and settings to help reach your target population: This can include common interventions or settings that reach specific subgroups. An example is school-based interventions for inequalities affecting children and youth.

- Search terms: school-based interventions

Once you have generated a comprehensive list of search term ideas, you can identify the best terms to use by locating and searching Medical Subject Headings (MeSH) terms. These terms are used to index articles in databases. For example, you can expand terms such as "second-hand smoke" to include "involuntary smoking and environmental smoke pollution, tobacco."

When identifying your search terms and logic, it is helpful to consult a research librarian.

Identify sources of scientific and grey literature

As noted previously, it is important to consider the hierarchy of evidence within the scientific and grey literature.

Scientific literature can be retrieved from databases such as

- [PubMed](#)
- [MEDical Literature Analysis and Retrieval System Online — MEDLINE](#)
- [Excerpta Medica Database — Embase](#)
- [Psychological Information Database — PsycInfo](#)
- [Cumulative Index to Nursing and Allied Health Literature — CINAHL](#)

Systematic reviews and meta-analyses can also be retrieved from these databases and also from specific databases such as

- [The Cochrane Library](#)
- [The Campbell Collaboration](#)
- [Health Evidence](#)

Please be advised that some of these sources may require a subscription to access.

Grey literature can be retrieved from a number of sources, including

- Online search engines (e.g., custom Google search)
- Grey literature databases (e.g., Turning Research Into Practice [TRIP], Canadian Health Research Collection, New York Academy of Medicine: The Grey Literature Report)
- Targeted websites (e.g., CIHI, Public Health Agency of Canada, National Collaborating Centre for Healthy Public Policy)
- Conference abstracts and proceedings (e.g., Scopus, Conference Papers Index, MEDLINE)

Step 2: Document your search results

To keep track of your work, you will want to document the search strategy you implemented, the number of results you generated and the process you used to filter and review your results.

For this step, refer to tables **2 Search results template** and **2a Case study — Search results** in the Excel file *Measuring Health Inequalities: A Toolkit — Intervention Scan Template*.

Once you have identified relevant sources of evidence, you can track specific details about the intervention and evidence supporting its effectiveness in reducing health inequalities.

We have organized the search results template as follows:

1. Intervention overview
2. Source and quality of the evidence
3. Effectiveness
4. Generalizability of the evidence
5. Implementation overview
6. Article information

1. Intervention overview (columns A to C)

Use these columns to describe the intervention and whether you consider it to be targeted, universal or proportionate universal.

2. Source and quality of the evidence (columns D and E)

Use these columns to track information about the source and quality of the evidence. Tracking information about the study design (e.g., randomized controlled trial, observational study) and type of article (e.g., journal article, policy paper) will allow you to consider the quality of the evidence when you synthesize your results. For this step, you can also use critical appraisal tools such as the AMSTAR 2, a measurement tool to assess the methodological quality of systematic reviews.[8]

3. **Effectiveness (columns F to H)**

    Use these columns to track the evaluation results, including the following:

    - **Intervention outcomes (column F):** Use this column to track evidence supporting the overall effectiveness of the intervention. To do this, it may be helpful to consider a range of outcomes. Some interventions may demonstrate an improvement in the **final outcome** — namely, the health indicator rate. For instance, interventions to improve asthma self-management planning are associated with decreased asthma hospitalization rates. Other interventions may demonstrate improvements in **intermediary outcomes** — in other words, factors that influence the health indicator rate.

    - **Effects on population subgroups (column G):** Use this column to track evidence demonstrating that the intervention has reduced (or has the potential to reduce) health inequalities.

    - **Cost–benefit findings (column H):** Use this column to document information on the intervention costs or results of cost–benefit analysis.

4. **Generalizability of the evidence (columns I to L)**

    Use these columns to track information about the study population and local contexts. This information can help you determine for whom you can generalize the findings.

5. **Implementation overview (columns M and N)**

    Use these columns to track information about the status of the intervention, including implementation year, the year in which the intervention was completed and any follow-up period.

6. **Article information (columns O to R)**

    Use these columns to track information about articles, including key contact, publication year, hyperlink and additional notes.

Step 3: Synthesize your search results

To generate an overall summary of the interventions with the strongest evidence for reducing health inequalities, you will synthesize your search results.

For this step, refer to tables **3 Synthesis template** and **3a Case study — Synthesis** in the Excel file *Measuring Health Inequalities: A Toolkit — Intervention Scan Template*.

To synthesize your search results, consider doing the following:

1. Grouping search results relating to similar interventions
2. Ranking the evidence by considering its quality and generalizability (column B)
3. Summarizing the effectiveness of the intervention in reducing health inequalities (column C)
4. Making note of any information gaps or study limitations (column D)
5. Tracking key sources (columns E and F)

Once you have synthesized your search results, you should be able to identify and report on interventions for reducing health inequalities. By including this information when you disseminate the results of your analysis, your audience will better understand the significance of your findings, as well as potential approaches for addressing these health inequalities.

Appendices

Appendix A: Additional papers

The following papers provide more information on identifying search terms and logic:

Aromataris E, Riitano D. [Systematic reviews: Constructing a search strategy and searching for evidence](#). *American Journal of Nursing*. 2014.

Briscoe S, et al. [How do Cochrane authors conduct web searching to identify studies? Findings from a cross-sectional sample of Cochrane Reviews](#). *Health Information and Libraries Journal*. 2020.

Godin K, et al. [Applying systematic review search methods to the grey literature: A case study examining guidelines for school-based breakfast programs in Canada](#). *Systematic Reviews*. 2015.

Appendix B: Text alternative for figure

Figure   Hierarchy of evidence

The 8-tiered hierarchy of evidence outlines the general availability and quality of evidence with the lowest risk of bias.

Grey literature is the first level in the hierarchy. The 7 subsequent levels are classified as scientific literature. They are ranked from lower- to higher-quality evidence, starting with editorials in peer-reviewed journals, followed by case reports and case studies, cross-sectional studies and surveys, case-control studies, cohort studies, randomized controlled trials and, lastly, systematic reviews and meta-analyses.

Source
Created by CIHI, adapted from various sources, including Evans D, Hierarchy of evidence: A framework for ranking evidence evaluating healthcare interventions, *Journal of Clinical Nursing*, 2003.

References

1. World Health Organization, Public Health Agency of Canada. *Health Equity Through Intersectoral Action: An Analysis of 18 Country Case Studies*. 2008.

2. Canadian Institute for Health Information. *Trends in Income-Related Health Inequalities in Canada: Summary Report*. 2015.

3. Canadian Institute for Health Information. *Trends in Income-Related Health Inequalities in Canada: Methodology Notes*. 2015.

4. Public Health Ontario. *Focus On: A Proportionate Approach to Priority Populations*. 2015.

5. Akobeng AK. Understanding systematic reviews and meta-analysis. *Archives of Disease in Childhood*. 2005.

6. Godin K, et al. Applying systematic review search methods to the grey literature: A case study examining guidelines for school-based breakfast programs in Canada. *Systematic Reviews*. 2015.

7. Mackenbach JP, Gunning-Schepers LJ. How should interventions to reduce inequalities in health be evaluated?. *Journal of Epidemiology and Community Health*. 1997.

8. Shea BJ, et al. AMSTAR is a reliable and valid measurement tool to assess the methodological quality of systematic reviews. *Journal of Clinical Epidemiology*. 2009.

help@cihi.ca

cihi.ca