



National Collaborating Centre  
for Methods and Tools

Centre de collaboration nationale  
des méthodes et outils



School of Nursing



# Rapid Review Guidebook

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Steps for conducting a rapid review

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# Conducting Rapid Reviews

## Purpose

The purpose of this document is to provide guidance on the process of conducting rapid reviews to use evidence to inform policy and program decision making. While a specific process is outlined, it is understood that rapid reviews may vary in scope and methodology and the timeline for preparing them may vary from a few days to several weeks or months. Ideally all of the outlined steps would be completed during a rapid review; however, there will be instances where timelines will be such that some steps may need to be skipped, or some steps may not be completed as thoroughly as they would be if more time were available. In instances where timelines are short, it is important to decide, with management, which steps must be completed, which ones may be skipped, and/or which ones may not be completed as thoroughly as possible. Throughout this guide, suggestions are made where time can be saved, as needed, on particular steps. This guide follows the seven step process of evidence-informed decision making promoted by the National Collaborating Centre for Methods and Tools. Rapid reviews are a form of knowledge synthesis that follow the systematic review process, but components of the process are simplified or omitted to produce information in a timely manner (Khangura, 2012).

## Evidence-Informed Decision Making

Evidence-informed decision making (EIDM) involves the translation of the best available evidence from a systematically collected, appraised and analyzed body of knowledge for consideration alongside other forms of knowledge in policy and program decisions. EIDM has been defined as a process characterized by: 1) the articulation of public health practice-based issues; 2) searching for and accessing relevant research evidence; 3) appraising the methodological quality of research evidence; 4) synthesizing the evidence; 5) adapting the evidence to the setting; 6) implementing the decision; and 7) evaluating the impact of the decision on public health practice and potentially population health outcomes. This guide will describe the first five steps in the process.

## Planning

Before working your way through these five steps it is important to plan. Planning to use the EIDM process includes the following steps. Steps 1 and 2 are further described in the next pages.

1. Preparing an overview of the public health topic.
2. Initiating a document that will become a final report. Step 5 of this guide thoroughly describes each section of the final report and suggested appendices.
3. Identifying key check-in points with your Manager/Associate or Medical Officer of Health. It is important to check in with your manager before you begin a rapid review and possibly at the completion of each step along the way.

## 1. Prepare an Overview of the Public Health Topic

The purpose of the overview is to describe the public health policy or program issue, what is currently known about the issue, and conclude with the question that the rapid review aims to answer. Gather all of this information (see section 1B), put it together in a written format and if time allows, in a conceptual model as well. The written overview will form the first section of the rapid review report. If a final report is produced, possible report sections are outlined in the Writing the Report section of this Guide.

### *1A. Identify your Team and Stakeholders*

Identify the primary lead, and other team members who will contribute to the rapid review. Identify those who have current knowledge of the issue who may be consulted, in particular policy and program decision makers in the health unit, epidemiologists, and library personnel. Consider who may be affected by the findings included in the rapid review. This may include other staff in the program or external partners and stakeholders. There may also be people who are more peripheral to the project who have an interest in the findings and wish to be informed of them. It will be important to remember these stakeholders for future knowledge exchange initiatives. The rapid review team may need to connect regularly with their manager during the initial stages of the rapid review process to ensure the public health policy or issue is clearly defined. The manager may need to connect with senior management during the process of refining the issue to ensure it is clear what is needed and wanted by senior management.

### *1B. Define the Public Health Topic*

Briefly explain the public health policy or program issue and what is driving the need for addressing the topic. The length of this section in the final report is one half page to one full page. Use the most current statistics, preferably Canadian, provincial and local data, to describe incidence and prevalence of the issue where appropriate. Include any information that compares the incidence and prevalence data with those of other relevant jurisdictions, if appropriate. Contact the epidemiologist for the topic (if available) to identify or confirm relevant statistics. A summary of current practices may also be included.

Provide definitions for conditions if they would not be widely understood by senior decision makers. Describe any political situations or issues of relevance. Describe any community situations or issues of relevance, including important partnerships that could be affected by any policy or program change implemented as a result of the findings of the rapid review.

Describe any practice issues that may be directly and/or indirectly affected by this rapid review, for the health unit and other partner or stakeholder organizations. Be sure, when quoting references, to use the primary source or reference and not a secondary reference (e.g. where an agency has quoted a primary reference).

*1C. Review Current Knowledge of the Public Health Topic, Issue, Disease or Situation (Review what you already have and then describe what the health unit already knows about this topic)*

Work together with the people assigned to the project to come to a common understanding of the relationships and factors underlying the public health issue. This common understanding can be acquired by reviewing a variety of materials such as:

- Systematic reviews on the issue
- Official statistics (such as the Chronic Disease Indicator Framework)
- Organizational reports
- Past briefing notes on the issue
- Regional Risk Factor Surveillance System
- Canadian Community Health survey
- Protocols
- Best practice guidelines
- Manuals
- Situational analysis or environmental scans
- Developed models or frameworks for the issue
- Consultation with external partners, such as academics
- Grey or unpublished literature
- Practice reviews
- Key informants or field experts

## 2. Initiate the Document that will become the Final Report

Create a program folder to electronically store your tools and documents. Create a document with the headings outlined in **Writing the Report** on page 22. Under the headings “Public Health Topic” and “Current Knowledge”, prepare a written description of the relevant information that you have identified in steps 1B and 1C. Explain the burden of illness associated with the public health issue, the threat to the population’s health, or other details that make the issue important. The team may also create a conceptual/logic model. Click on the following link to see an example of a logic model related to a youth suicide prevention program.

[http://www.excellenceforchildandyouth.ca/sites/default/files/docs/PEtoolkit2013/Pg9\\_LogicModelTemplate\\_Example\\_EN.pdf](http://www.excellenceforchildandyouth.ca/sites/default/files/docs/PEtoolkit2013/Pg9_LogicModelTemplate_Example_EN.pdf)

**The remainder of this document will identify the activities involved in completing each of the steps of a rapid review**

## Step 1: Define a Practice Question

### Definition

A practice question is one that is relevant to policy and program decision making in the health unit and is focused, clearly articulated and answerable. For example, in order for quantitative questions to meet these criteria, the question may use the **PICO framework**, identifying the following components: the **P**opulation of interest; the **I**ntervention(s) and/or **E**xposure (risk factor) being considered; the **C**omparator (what the intervention or risk factor is being compared to); and **O**utcome(s). Questions should be framed to be neutral rather than focused on a particular direction for the outcome. By framing the question in a neutral way you are in a better position to identify all of the research evidence relevant to the practice issue. Framing the question with a particular direction of the outcome (e.g. the intervention has a positive effect) may bias your search for evidence along the direction you have articulated. The following is an example of a focused, clearly articulated, answerable, and neutral practice question:

*What is the impact of school-based physical activity interventions on time spent engaged in moderate to vigorous physical activity, among children aged 6-12 years of age, in comparison to children not exposed to school-based interventions?*

The following is an example of a practice issue that requires further refining in order to be focused, clearly articulated and answerable:

*What interventions are effective in reducing health inequalities?*

The following is an example of a focused, clearly articulated, answerable, but not neutral practice question:

*Which school-based interventions are effective in increasing the amount of time children engage in moderate to vigorous physical activity?*

### 1.1 Type of practice question

A first step in defining a public health issue is in determining the type of question you have been asked to address. The following are examples of some of the types of practice questions you may be asked to answer with your rapid review:

- **Intervention:** What is the effect of an intervention or program on one or more outcomes?
- **Harm/Causation:** What is the relationship between a risk factor and an outcome? For example, the relationship between second hand smoke exposure and the risk for various types of cancer.
- **Diagnosis:** What is the extent to which a tool accurately identifies the presence of a disease or health condition?
- **Economics:** Assess the relative cost of an intervention for the expected outcome
- **Meaning/Lived experience:** What is the lived experience of a process or phenomenon?

## 1.2 Develop a focused, clearly articulated, answerable practice question

Once the type of practice question has been determined, it is time to define the question. From the above list, questions related to Intervention, Harm, Diagnosis and Economics are generally answered using quantitative research, while questions related to Meaning/Lived experience are answered by qualitative research. When a practice question is quantitative in nature, the following components should be identified as specifically as possible: Population, Intervention/Exposure, Comparison, and Outcome(s). The acronym PICO is used when addressing the effectiveness of an intervention or PECO if assessing the relationship between a risk factor to which a population is exposed and a (health) outcome. However, if a practice question is qualitative then the following components should be articulated: Population and Setting, or PS.

Depending on the question needing to be addressed, [other frameworks](#) may be applicable.

When a request for a rapid review is received, the primary lead should confirm the scope of the practice issue with their manager. If the scope is not clearly defined at the outset, the manager will seek additional clarity from senior management. It may be helpful to conduct a quick literature search to help inform the scope. Consider contacting a librarian, if available at your organization, to help scope the research question. It is important that team members understand the purpose of the review (e.g., what decision makers need and why they need this information). Specific questions that can be asked to ensure that the practice issue is clearly defined and understood by those developing the rapid review include:

1. Which populations are of interest?
2. What interventions/programs or risk factors are to be included?
3. Are there any interventions/programs or risk factors that should be excluded?
4. What outcomes should be addressed and/or excluded?

For qualitative questions, for example “what are the lived experiences of caregivers of youth with mental illness?”, the components requiring definition include: Population and Situation. However, even for some quantitative questions, it may be useful to gather qualitative research related to an intervention or risk factor that has been evaluated. For example, while the rapid review may focus primarily on the impact of an intervention/program on specific outcomes, qualitative research may provide further insight into why the intervention was effective or not, for whom, and in which settings or circumstances. So, it may be necessary to further refine the PICO components by adding Setting as a component or developing an additional question using PS.

Depending on how long you have to complete the rapid review you may spend more or less time defining each of the components (PICO, PECO, or PS).

The link to a tool available through Health Evidence™ is provided below. This tool provides guidance on how to develop PICO/PECO and PS practice questions.

[http://www.healthevidence.org/documents/practice-tools/HETools\\_DevelopingEfficientSearchStrategyUsingPICO\\_18.Mar.2013.doc](http://www.healthevidence.org/documents/practice-tools/HETools_DevelopingEfficientSearchStrategyUsingPICO_18.Mar.2013.doc)

Some requests for rapid reviews will require you to assess policy and program options, while taking into account the social determinants of health (SDOH) and/or the extent to which policies and programs address health inequities. In such instances further work will be required during the **Define** step to identify specific populations of interest and other factors related to inequalities such as ethnicity or socio-economic status. The following practice question illustrates how a question can change depending on whether an SDOH perspective is taken:

**Non SDOH perspective**

'What is the effect of school-based nutrition programs on dietary outcomes among children?'

**SDOH perspective:**

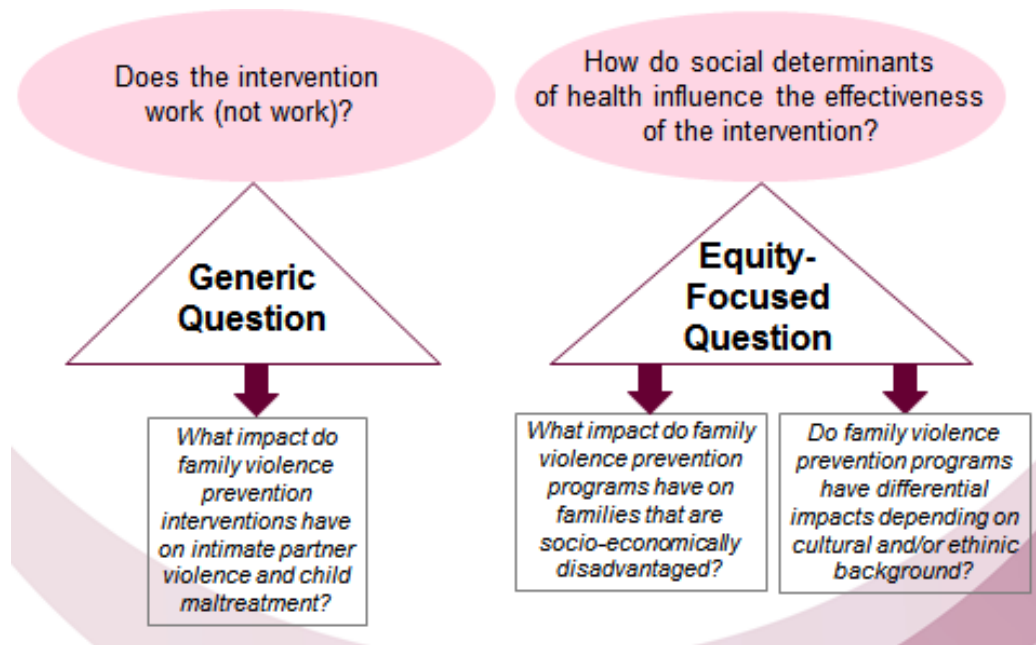
'What is the effect of school-based nutrition programs on dietary outcomes among children who are from socioeconomically disadvantaged households?'

or

'Do nutrition programs have differential effects on dietary outcomes depending on the socio-economic status of children and their families?'

**Figure 1** below depicts the addition of an equity lens to a public health practice issue.





**Figure 1: Applying an equity lens to a public health practice issue**

A tool to help further define the practice issue taking equity factors into account is PROGRESS-Plus. This tool can be used to identify and further refine specific factors related to the social determinants of health including:

- Place of residence
- Race/ethnicity/culture/language
- Occupation
- Gender/sex
- Religion
- Education
- Socioeconomic status
- Social capital
- Plus** other possible factors such as disease status or disability

More information on this tool can be accessed at:

<http://methods.cochrane.org/equity/projects/evidence-equity/progress-plus>

### 1.3 Confirm the practice question with your manager

The final activity in the Define step is to confirm with your manager that the focused, clearly articulated, answerable, neutral practice question(s) you have developed address(es) the needs

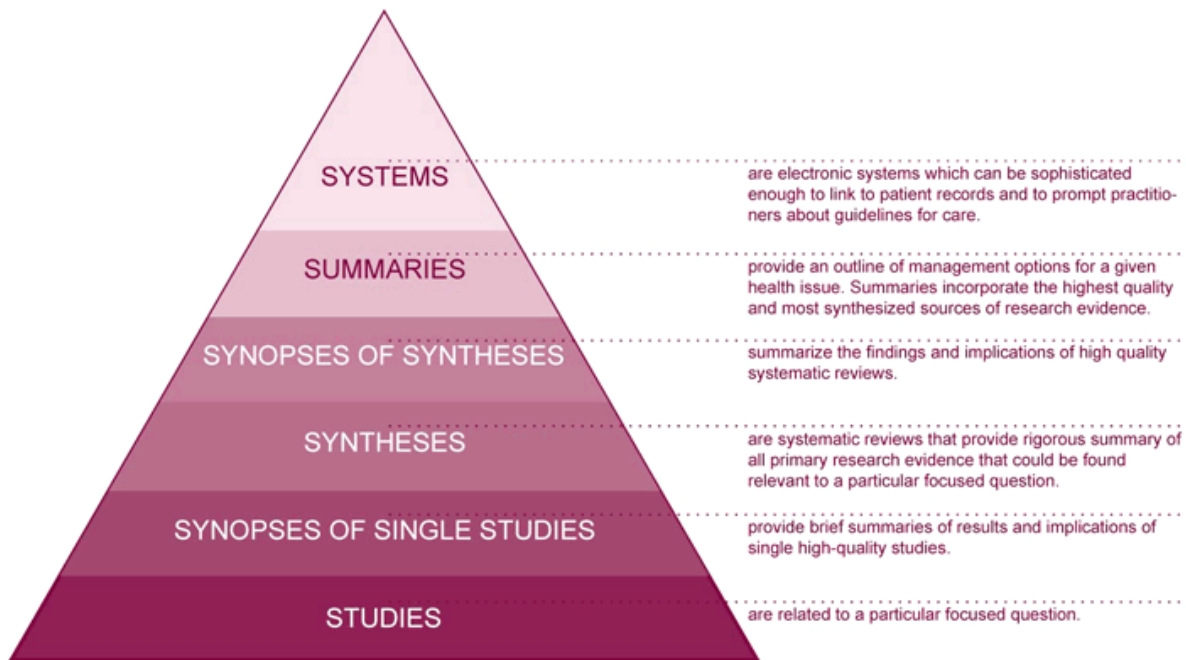
of those who requested the rapid review and is feasible within the required time frame and capacity. Once confirmation is received you are ready to move on to **Step 2: Searching for Evidence**.

## Step 2: Search for Research Evidence

### Definition

The second step in the rapid review process is searching for evidence to address the public health policy or program issue developed during the **Define** stage. In an ideal situation, or in conducting a full systematic review, you would conduct an exhaustive search for all available evidence – both quantitative and qualitative, published and grey literature – addressing the issue. However, in most instances an exhaustive search will not be feasible. Therefore, a process for identifying evidence is needed to ensure your search is effective and efficient so that your search efforts produce relevant results in a timely manner. Furthermore, when possible, it is important that policy and program decisions be informed by the results of a body of literature, rather than single studies. A body of literature will provide more generalizable findings applied at the level of a population, and therefore provide more accurate and realistic findings for policy and program decisions.

The amount of time in which you have to conduct a rapid review will significantly impact the extent to which a comprehensive search for all available evidence is conducted. The 6S Pyramid of Evidence illustrates a hierarchy of evidence starting with the most synthesized evidence at the top of the pyramid (systems) and ending with the least synthesized evidence (single studies) at the bottom. The 6S Pyramid is shown in **Figure 2**.



**Figure 2: 6S Pyramid of Evidence**

The National Collaborating Centre for Methods and Tools has identified relevant sources of public health evidence in the 6S Pyramid. This interactive version of the pyramid can be accessed at:

<http://www.nccmt.ca/eiph/search-eng.html>.

This tool can save you significant time by guiding you to search for synthesized evidence first and only proceeding to less synthesized evidence when you determine there is no evidence higher in the pyramid that addresses your practice question. When timelines are very tight, it may only be possible to search for the most synthesized evidence that exists at the summaries or syntheses levels.

The 6S Pyramid starts with systems, then moves down to summaries, synopses of syntheses, syntheses, synopses of single studies and single studies.

**Systems** are electronic platforms that combine patient level information with best practice guidelines to identify, for health professionals, the best course of action for patients. Currently there are no systems in place for public health although efforts are underway to develop them. This may become an important level of evidence in the near future. The next level down is summaries.

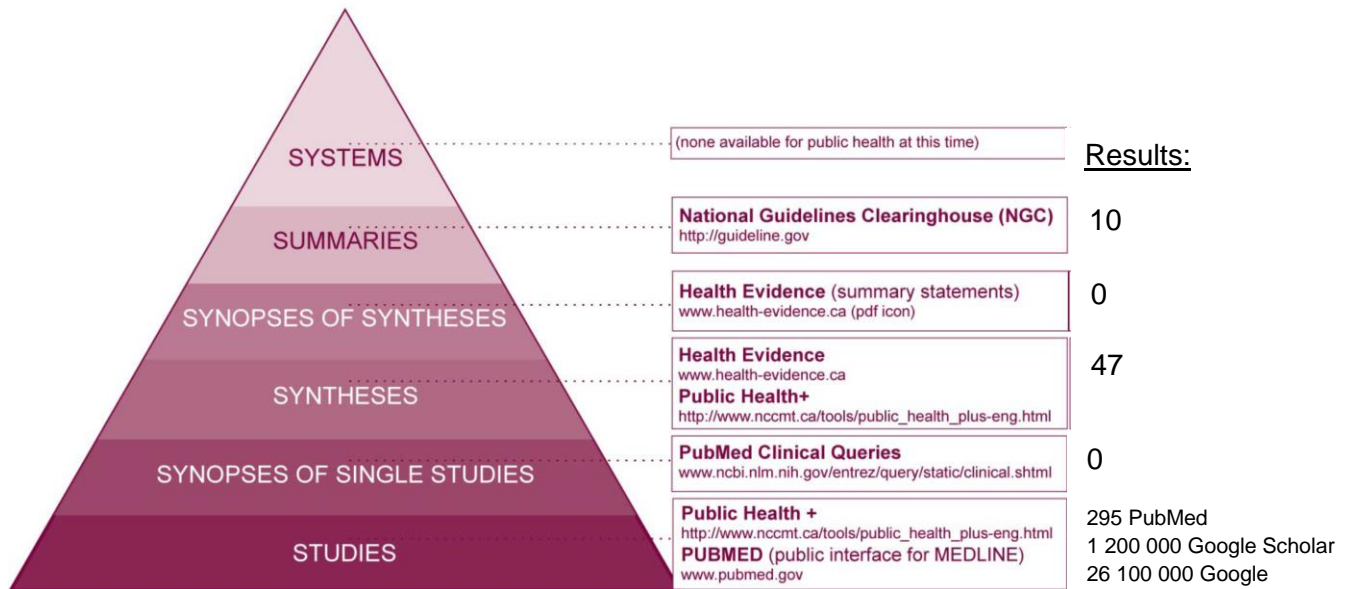
**Summaries** combine the results of all available research evidence along with expert opinion to create a single document that identifies recommendations for practice. Summaries are generally referred to as best practice guidelines. Summaries that have been rigorously developed and are recent (less than 3 years since release) are the most synthesized forms of evidence to inform public health policy and program decisions. If a relevant summary is found but was not rigorously developed or is more than 3 years since release, then additional evidence lower on the pyramid should be sought to determine if any new knowledge has emerged more recently that may impact recommendations for practice. The next level down on the pyramid is synopses of syntheses.

**Synopses of syntheses** are short summaries identifying the key findings of syntheses (reviews of all the available research evidence on a particular topic). Sites that provide synopses of syntheses can save you significant time in identifying relevant syntheses as you can quickly scan titles and content to identify syntheses that are relevant to your practice question. Generally, synopses of syntheses will include a direct link to the full text of the synthesis providing quick access to relevant evidence. Whether or not you find a synopsis of a synthesis, you should still search the syntheses level because there are many syntheses in public health for which synopses have not been written. If you were to only search for synopses of syntheses there would be a high potential to miss important evidence. Furthermore, if you do find a relevant synopsis based on a synthesis that is more than three years old, you should continue searching at the synthesis level of the pyramid.

**Syntheses**, as stated previously, combine the results of single studies on a particular topic into one document. You want to focus your search on identifying systematic reviews and meta-analyses. Sites which publish only syntheses can save you significant time because there is much less content to search through. Syntheses should be used to inform policy and program decisions as opposed to single studies. Results obtained from syntheses better reflect effects of an intervention at a population level, therefore more confidence can be placed on the results of syntheses when considering impact across the whole population of interest. If you identify a synthesis that addresses your practice question, has been rigorously conducted and is less than three years since publication, you would end your search for evidence at this point. If the synthesis was not rigorously conducted, and/or is more than three years since publication, you would continue down the pyramid to determine if additional single studies have been published since the synthesis. The results of these additional single studies, if rigorously conducted, would then be considered alongside the results of the synthesis or summary. To begin a search for single studies we start with searching for synopses of single studies. However, currently there are no high quality sources of synopses of single studies for public health, and so we continue down to the bottom of the pyramid to search for single studies.

The following **Figure 3** illustrates the number of results obtained by searching sources of evidence at all levels in the pyramid where the practice question was focused on the impact of

family violence prevention programs.



**Figure 3: Number of results obtained at each level of pyramid for question on impact of family violence prevention programs**

The example in **Figure 3** illustrates that higher levels on the pyramid return fewer results than those at the bottom of the pyramid. For example, at the summaries level, ten best practice guidelines were identified by searching for the term family violence. At the syntheses level 47 results were identified and at the studies level 295 single studies were identified. A search in Google Scholar returned 1 200 000 results and Google returned 26 100 000 results. Given that a much more manageable amount of evidence was identified at the higher level on the pyramid, searching from the top down has the potential to significantly reduce the time it takes to identify relevant evidence to address the practice issue.

### 2.1 Determine the database search strategy

Recall at this point the practice question developed during the **Define** stage. The components identified for your question (PICO, PECO, or PS), as well as the PROGRESS- Plus factors, can now be used as the basis for the keywords in the search strategy. Additional keywords such as social discrimination, social distance; social marginalization, social isolation; social stigma; and

social class could also be used at this point to focus the search further toward an equity perspective, as needed.

The following tips will also assist in refining the search strategy:

- 2.1.1 Brainstorm any terms, names, synonyms, alternate spellings and concepts related to your topic. Expand acronyms to the original words.
- 2.1.2 Use the MeSH (Medical Subject Headings) browser to find suitable subject terms related to your search topic. The MeSH browser can be found here:  
<http://www.nlm.nih.gov/mesh/MBrowser.html>
- 2.1.3 Identify what shouldn't be included in your parameters. For example, if you are searching for physical activity interventions for the work place setting, you do not want to include reports on physical education in schools in your final analysis. These are your exclusion criteria. Other possible inclusion and exclusion criteria may include publication date ranges or language (e.g. are you limiting your search to articles written in English / French?).
- 2.1.4 "Group" your concepts/terms, for example, (Smoking, Tobacco) (Adolescents, Adolescence, Teenagers, Teens, Youth, Young Adults). Depending on the database you may need to combine keywords with subject headings.
- 2.1.5 Document your process throughout.

The National Collaborating Centre for Methods and Tools hosts a suite of online learning modules, one of which focuses on searching. This module takes approximately 3-4 hours to complete and provides you with the opportunity to learn and practice new skills on searching for research evidence using the 6S Pyramid. The search module can be accessed through the NCCMT's Learning Centre after logging in with a free NCCMT account.

[www.nccmt.ca/learningcentre](http://www.nccmt.ca/learningcentre)

**Confirm your search terms with your manager.**

## 2.2 Conducting your search.

When conducting a rapid review, whenever possible have a librarian conduct the searches for you. Librarians will search electronic databases, which are primarily populated with single studies, as well as additional sources containing evidence higher up on the pyramid which may not be found in electronic databases.

There are two tools that you can use to keep track of the results of searches obtained from various sources of evidence. It is important to document your search strategy for at least two reasons: 1) you can include this information in supplementary documentation in the report to demonstrate the comprehensiveness of the search; and 2) if you were asked to look at this same topic again in the future, documentation of the search strategy and results will allow you to

quickly build from the previous search and move forward in time. While a small amount of additional time is needed to complete these forms, they can save time in the future and are instrumental in demonstrating an evidence-informed approach.

The **Levels & Sources of Public Health Evidence** tool provides a visualization of the 6S Pyramid and can be found here:

[http://www.healthevidence.org/documents/practice-tools/HETools\\_Levels&SourcesPublicHealthEvidence\\_18.Mar.2013.doc](http://www.healthevidence.org/documents/practice-tools/HETools_Levels&SourcesPublicHealthEvidence_18.Mar.2013.doc)

The **Resources to Guide & Track Your Search** tool provides a document in which to track your search terms and results and can be found here:

[http://www.healthevidence.org/documents/practice-tools/HETools\\_ResourcesGuide&TrackYourSearch\\_18.Mar.2013.doc](http://www.healthevidence.org/documents/practice-tools/HETools_ResourcesGuide&TrackYourSearch_18.Mar.2013.doc)

Most websites have very simple search engines, similar to Google. They are best searched using fewer keywords (2-3 usually works best). Re-run the search a few times, using alternate words to ensure you have collected the most relevant documents available in that resource.

Searching methods often differ between databases, but (Parentheses), "quotation marks" and asterisks\* are most commonly used to help define searches. Check individual databases "Help" features, if available, for details on how to search that particular database/site.

Consider the number of citations retrieved in your search – a large number retrieved may require you to refine your search question or inclusion / exclusion criteria. You can try narrowing the scope of your question or search a limited number of appropriate databases/sources. A small number of citations retrieved may require you to expand your search question or remove some of the limits on your inclusion/exclusion criteria, and search additional databases/sources. Searching can be an iterative process and you may need to revise your question, inclusion / exclusion criteria and/or search strategy before finalizing your method.

**If you still have too many or too few results, consult with a librarian if possible. Consider a consultation with your team, manager and stakeholders.**

### 2.3 Saving your search

Ensure you have documented each source searched, the terms used and the results for each source. Many databases allow you to save your search strategy to your user profile. This is an important step as you may try many different combinations of search terms before finalizing the search strategy. It will be important to capture the exact set of search terms and how they were specifically combined. It will also help you fill out the Search Process flowchart from Health Evidence, discussed below.



## 2.4 Citations retrieved – assessing for relevance

Save all citations in a reference management system (e.g. RefWorks, Endnote). If you are unfamiliar with which software your organization uses consult your manager and/or librarian. Assess the citations first for relevance by a quick review of titles and abstracts and their relation to your practice question.

At the title/abstract stage, there is no need to document the criteria which led to exclusion of individual citations but be mindful that you have not excluded articles based on outcome (positive or negative) from your results. You do not want to bias your report.

Relevant citations need full article retrieval (i.e. you need a hard or electronic copy of the full document.) If after reviewing the title/abstract you are unsure if the article meets your inclusion criteria, include it for full text retrieval. Consult your manager/librarian on the process for requesting/accessing full-text articles in your organization. Screen the full-text articles and exclude citations which do not meet your inclusion / exclusion criteria.

Document the reasons why they were removed from further consideration.

To help minimize bias, when possible, have two authors independently review the references at both the title/abstract and full text level to determine if they meet the inclusion/exclusion criteria. Decide how disagreements are dealt with. For example, a third person could be a tie breaker.

### Overview of Search Process flowchart

The Overview of Search Process flowchart from Health Evidence™ allows you to keep track of the citations retrieved and decisions made regarding relevance and quality at various points throughout your search, appraisal and documenting process. The tool can be accessed here:

[http://healthevidence.org/documents/practice-tools/HETools\\_KeepingTrackSearchResultsFlowchart\\_18.Mar.2013.ppt](http://healthevidence.org/documents/practice-tools/HETools_KeepingTrackSearchResultsFlowchart_18.Mar.2013.ppt)

Update the flowchart at three key points during the review process:

- Retrieving citations
- Assessing citations for relevance based on your search question
- Critical appraising the evidence

## Step 3: Critically Appraise the Information Sources

### Definition

Critical appraisal is the process of assessing the quality of study methods in order to determine if findings are trustworthy and meaningful. Critical appraisal helps you answer the question: “Were the methods used good enough that I can be confident in the findings and apply these findings to public health practice?”

### 3.1 Conduct critical appraisal

If critical appraisal was not already conducted by a credible source (e.g. Health Evidence™), you need to critically appraise every document you include in your rapid review using an appropriate tool (see table below). These tools guide you through a series of questions to assess the quality of the methods the authors used to conduct the research. If you have a very short timeline, sites like Health Evidence™ ([www.healthevidence.org](http://www.healthevidence.org)) will save you time as all reviews included on this site have been assessed for methodological quality by two independent raters and an overall rating for each review is provided on the site. Some sites that house best practice guidelines and other research evidence repositories also provide assessments of methodological quality. For each site you use, you will need to determine whether the evidence has been assessed for methodological quality. If the site has not assessed the quality of the evidence, it is important that you conduct this assessment before extracting data from the documents. The critical appraisal should be conducted by two raters independently, and where discrepancies in ratings exist, the raters should discuss their ratings until a consensus on the ratings is reached.

Use **Table 1** below and consider the type of research evidence you have found to determine what tool to use. The table includes a link to the collaboration or organization that developed each tool as well a direct link to the tool itself.

**Table 1: Critical Appraisal Tools by Type of Evidence**

Type of Evidence	Collaboration/Organization	Direct Link
Summaries/Guidelines	AGREE II: <a href="http://www.agreetrust.org">www.agreetrust.org</a>	AGREE II Tool: <a href="http://www.agreetrust.org/agree-ii">www.agreetrust.org/agree-ii</a>
Syntheses/Systematic Reviews and Meta-Analyses	Health Evidence™: <a href="http://www.healthevidence.org">www.healthevidence.org</a> AMSTAR: <a href="http://www.amstar.ca">www.amstar.ca</a> CASP: <a href="http://www.casp.uk-net">www.casp.uk-net</a>	Health Evidence™ Tool: <a href="http://www.healthevidence.org/documents/our-appraisal-tools/QA_Tool&amp;Dictionary_10_Nov16.pdf">www.healthevidence.org/documents/our-appraisal-tools/QA_Tool&amp;Dictionary_10_Nov16.pdf</a> AMSTAR Tool: <a href="http://www.amstar.ca/Amstar_Checklist.php">www.amstar.ca/Amstar_Checklist.php</a>

		<a href="http://docs.wixstatic.com/ugd/ded87_7e983a320087439e94533f4697aa109c.pdf">CASP Tool: http://docs.wixstatic.com/ugd/ded87_7e983a320087439e94533f4697aa109c.pdf</a>
Single Studies (Quantitative and Qualitative)	CASP: <a href="http://www.casp-uk.net">www.casp-uk.net</a>	Collection of CASP Tools: <a href="http://www.casp-uk.net/casp-tools-checklists">www.casp-uk.net/casp-tools-checklists</a>

## Step 4: Synthesize the Evidence – “Putting it all Together”

### Definition

In the synthesize step, results from all of the high quality and relevant evidence that you gathered is aggregated. The overall goal is to come to a conclusion about what is known about the practice question in the literature. This step involves: 1) extracting relevant information from included documents (e.g., guidelines, systematic reviews and single studies); 2) summarizing the overall results from included documents; and 3) formalizing conclusions. This step helps answer the question “What does the research evidence say about the issue and what are the practice implications of the research?”

#### 4.1 Data Extraction

Consider how much detail is important to extract from each of the included documents. Data extraction answers the question “what do the included documents tell us?” Ideally, data extraction should be conducted by two people independently, and they should meet to discuss any discrepancies until a consensus on the extracted data is reached.

Extracted information should include title, author(s), date of publication, type of publication (e.g., summary, synthesis, single study), number and type of included studies (if a summary or synthesis), settings and population studied, interventions implemented, outcomes measured and results, and if relevant to the question, whether results differed among subgroups, such as by gender, socioeconomic status, ethnicity, etc.

An example of a data extraction table is included in **Table 2** on the following page. This table includes a sample of results from a review of studies examining the effectiveness of family or community-based interventions to decrease sedentary behavior in three age groups.

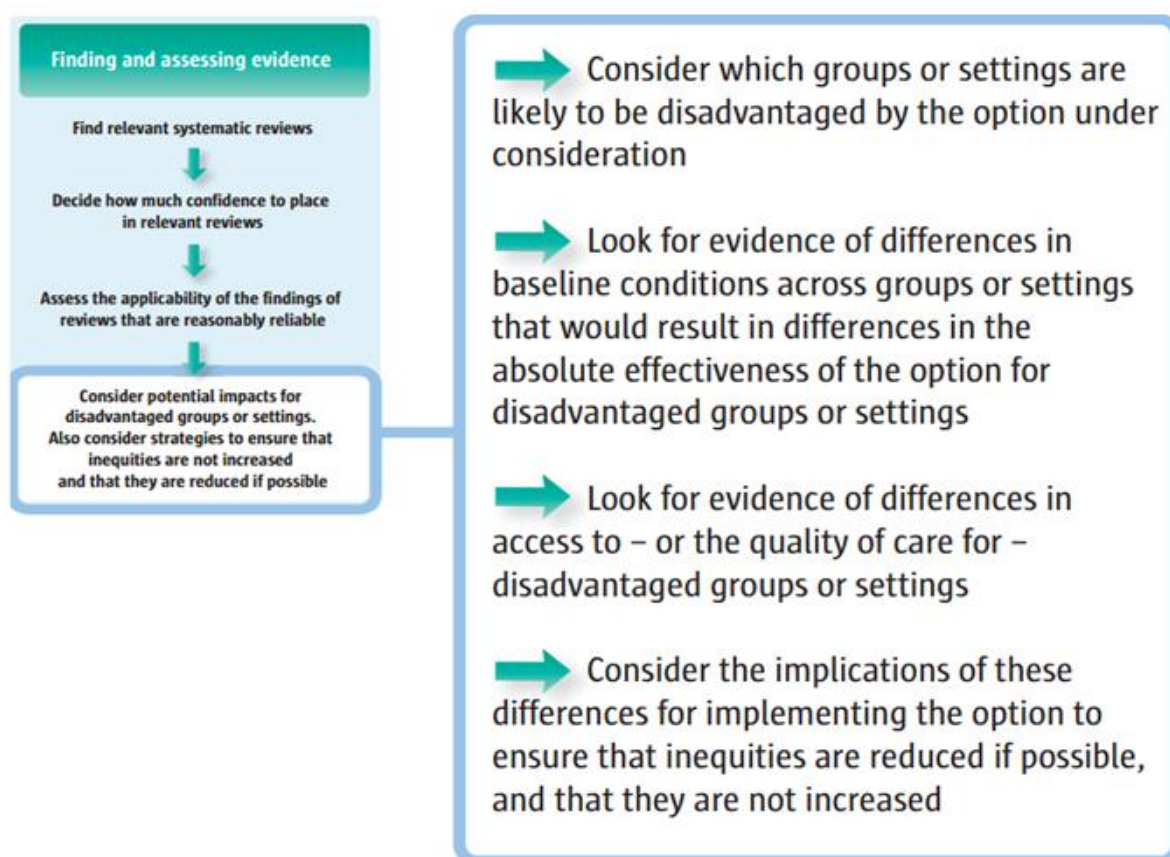
**Table 2. Sample Data Extraction Table**

What is the effectiveness of family or community-based interventions to decrease sedentary behaviour? 3 age groups: Children 5-13; Adolescents 14-18; Adults 18-50								
Participants	Author (Year)	Quality	Interventions	Outcomes Measured (how measured, tools used)	Years	Study Design	Results	Sub Population Differences
<b>Children 5-13</b>	DeMattia (2007)	Strong (7)		Outcomes should focus on decrease in sedentary B or increase in PA, so did prelim relevance screening based on what looked like it would meet that criteria				
	Connelly (2007)	Strong (7)	Provision/making PA compulsory					
	Salmon (2007) *also adolescents	Strong (7)	Promoting PA participation (focus mostly school setting but 57 interventions total are evaluated and some are family)					
	Flynn (2006) *also adolescents	Strong (10)						
	Flodmark (2006) *also adolescents	Moderate (6)						
	Campbell (2001)	Moderate (5)						

## 4.2 Data synthesis

Synthesis answers the question “what are the overall conclusions from all of the included research?” Use the results from the Data Extraction Table (Table 2) to organize results and findings to simplify the process of drawing conclusions.

Additional tables can be created to group data according to: a) population, b) intervention, or c) outcomes. An equity perspective can also be included in a separate column to identify differential effects of the intervention on, for example, different populations. Arranging the data in this way can assist in identifying similarities and differences in results across studies. In addition, the following tool “Support Tools for evidence-informed health policy making 10: Taking equity into consideration when assessing the findings of systematic reviews” can provide further guidance on applying an equity perspective.



**Figure 4: Applying a health equity perspective to data extraction.** Image from Oxman, A. D., Lavis, J. N., Lewin, S. & Fretheim, A. (2009). SUPPORT Tools for evidence-informed health Policymaking (STP) 10: Taking equity into consideration when assessing the findings of a systematic review. *Health Research Policy and Systems*, 7, (S1): S10. doi: 10.1186/1478-4505-7-S1-S10

### 4.3 Drawing implications for the Organization

Now that all the data has been extracted, categorized and considered it is time to answer the following question: “based on the research, what should be done?” The evidence should be considered in its entirety to develop recommendations for policy and practice as opposed to selecting the results of particular single studies to highlight. Synthesizing the evidence across studies is not an exercise in vote counting, meaning it is not sufficient to tally up those studies finding a positive effect and comparing that to the number of studies showing no effect, or a harmful effect. Synthesizing the evidence requires careful consideration of the commonalities and differences across the studies, along with weighting of results by their methodological quality. Furthermore, if your search identified a summary and/or synthesis and a few single studies, the results of the single studies need to be considered alongside all of the evidence included in the synthesis. The results of a recently published single study should not be given equal weight in comparison to the results of a high quality synthesis or summary. In other words, if you had a synthesis that included 20 single studies and two additional single studies published since the review, then the results of the two new single studies need to be considered alongside the 20 single studies in the synthesis.

Recommendations for policy and programs may be quite diverse. The following is a list of some possible recommendations: start a new program; modify an existing program; stop a program; deliver an existing program differently; re-focus programs to focus on different populations; or continue with the status quo. The following tool can be used to document how you arrived at your conclusions.

[http://healthevidence.org/documents/practice-tools/HETools\\_BriefingNote\\_18.Mar.2013.doc](http://healthevidence.org/documents/practice-tools/HETools_BriefingNote_18.Mar.2013.doc)

In addition, you can use the Health Equity Impact Assessment tool to summarize the findings using an equity perspective as well as support development of policy and program options that take into account their impact on health equity. This tool can be accessed using the following link:

<http://www.nccmt.ca/registry/view/eng/146.html>.

Consult with your manager regarding the recommendations to be included in the rapid review. Following approval of the recommendations from your manager, proceed with writing the final report. The draft rapid review report should be reviewed and approved by your manager and possibly others before continuing on to Step 5.

## Step 5: Identifying Applicability and Transferability Issues for Further Consideration during the Decision Making Process

### Definition

This step is crucial to determine if the policy or program will be relevant and suitable in Canada or your local context which would increase its chance for success. Adapting research evidence to the local context helps answer the question: “Can this research be used with our population?”

This step should involve meeting with others on the team from the organization who were involved in the rapid review’s development. To help team members prepare for the discussion they need to receive a copy of the draft rapid review and other supplemental documents you have created related to this practice question prior to the meeting.

The Applicability and Transferability tool is designed to capture important issues related to the proposed policy or program and should be documented in the notes section of the tool. Team members should discuss which factors included in the Applicability and Transferability tool would be important to consider prior to making policy or practice decisions. The identified factors could then be included in supplementary documentation accompanying the rapid review, to be discussed by managers and senior managers, and any other relevant stakeholders.

The Applicability and Transferability tool can be accessed at the following link:

<http://www.nccmt.ca/publications/9/view-eng.html>.

However, the assessment of the recommendations can also occur using an equity lens. In this situation the following tool will more adequately help you focus in on equity issues related to the applicability and transferability of evidence.

<http://stmichaelshospitalresearch.ca/research-programs/urban-health-solutions/resources-and-reports/knowledge-translation-toolkit/>

## Writing the Report

### Definition

A documented report constitutes the organizational record of the process that resulted in the development of the evidence brief. It involves creating a final report of the steps, results, and implications. It is a tool for communication and contributes to the knowledge bank. As much as possible, the document should use plain language. Consider reviewing and revising the report every 2-3 years. It should follow a 1:2:20 format: one page of key messages, a 2-page executive summary, and an up to 20-page full report.

### Sections to include

The EIDM Report requires the following sections:

#### Key Messages

This is one page, in bulleted format. Write this section last.

Provide, in plain language, statements that are the ‘bottom line’ about the implications arising from the result of the rapid review development process.

These are derived from the evidence itself as well as the applicability and transferability discussion.

#### Executive Summary

The length of the executive summary is 1 to 2 pages. Write this section after completing the full report. Provide a concise overview of the policy and/or program question, context, methods and results of the research, a synthesis of overall findings and concluding policy or program recommendations.

#### Public Health Topic

The length of this section is up to five to six sentences. Describe the issue that led you to conduct the rapid review (what was behind the request for the evidence brief to be conducted).

#### Current knowledge

The length of this section is up to one and a half pages. Include only what is relevant for your issue. Include available data about the incidence, prevalence, or other statistics relevant to the health issue. In addition, where available, focus on Canadian statistics. Include any information that compares the incidence and prevalence data with those of other relevant jurisdictions (if appropriate).

#### Public health policy or program question

The length of this section is up to three sentences.

Include the plain language practice question the rapid review aims to answer.



## Synthesis of findings

The length of this section is five to six sentences for each finding or conclusion.

Provide an overall summarizing statement for each conclusion (for each outcome or intervention, depending on how you decide to present the findings and include the population studied). Use PICO to frame how you state your results. For example, “There was no effect shown among 7-14 year old school children (*population*) of curriculum based interventions (*intervention*) compared to educational interventions (*comparison intervention*) on screen time (*outcome*)”.

Following the overall statement, describe each of the relevant references that support the conclusion. Where effects were found, report the magnitude or size of the effect, with applicable statistics for each intervention. Where applicable, interpret the effect size. For example, “At 15-60 months post intervention, participants who received the school-based physical activity intervention were X times more likely to engage in 60 minutes of physical activity per day compared to those not exposed to the intervention (*comparison population*) (include relevant statistics such as odds ratios or relative risks, or weighted mean difference and 95% Confidence Intervals if available).

Note: Data Synthesis Table is appended to the report.

## Implications for the Organization

The length of this section is one sentence per recommendation.

Based on the evidence, outline the recommendations made. Outline the financial and resource implications of any policy or program change implemented as a result of the review.

## References

Be sure to include all references quoted in the final report in your reference list. For help using a reference management system contact the library (if available).

## Appendix

Details on the following sections can be included in an appendix when and if time permits.

### *Literature search*

The completed tools on sources searched and keywords used can be included here. In addition, including the full search strategy for at least one database will allow your rapid review to be reproduced by others and lend credibility to your report.

### *Relevance assessment criteria*

The criteria developed to determine which evidence was included and excluded can be provided here.

### *Results of the search*

Describe the total number of documents of each type of evidence that were identified in the search (final version of the implemented search).

Describe how many articles of each type were found to meet the relevance criteria.

### ***Critical appraisal***

Describe the process used to appraise quality (e.g. the tools used to assess quality, how many reviewers independently completed the assessments and the method to resolve any disagreement in assessment among reviewers).

Describe how many papers of each type were assessed in each category of weak, moderate or strong quality. Include a summary statement stating the final number of documents included in the review, including a statement about any papers that were excluded based on a weak quality score.

Note in the report that the Critical Appraisal Outcome Tool is appended. If time permits a table providing the ratings for each criterion for each document should be provided by the reviewers

### ***Description of included studies***

Include the completed data extraction table(s) and note this in the report.