



Rapid Evidence Synthesis

TOOLKIT FOR FINDING AND SUMMARIZING EVIDENCE
ON SHORT TIMELINES

JUNE 2023

GETTING STARTED

What is rapid evidence synthesis and what does it produce?

Rapid evidence synthesis is a series of methods that adapts systematic review methods for shorter timelines than for a full systematic review.

The evidence reviews produced using rapid evidence synthesis methods can be used to inform planned or in-progress research projects, including funding proposals. It can be combined with the other resources in this set of toolkits to develop and optimize implementation strategies. Some rapid evidence synthesis products are suitable for peer-reviewed publication.

Who is this toolkit for?

Users of this toolkit will be familiar with searching, scanning, and evaluating the scientific literature. The toolkit was developed and tested by implementation scientists but can be used by any researcher who needs to produce a report of the literature in 1-4 months.

Why prioritize rapid evidence synthesis?

Researchers and implementation scientists often need information on a short timeline to answer specific project-related questions or develop the rationale for funding a project. Rapid, agile, but rigorous evidence synthesis methods provide project partners with the information they need, when they need it.

When do I use this toolkit?

If a project team needs a focused literature summary to make internal decisions or plan a project, a rapid review can produce a high-quality evidence synthesis product tailored for these specific needs. For work that will inform clinical guidelines or practice or quality improvement initiatives, we advise researchers conduct a full systematic review (Greenhalgh et al., 2005; Cooper et al., 2018).

What is included in this toolkit?

This toolkit contains step-by-step instructions, with real-world examples, for producing a rapid evidence synthesis product. The appendix has tested templates for planning and carrying out a rapid evidence synthesis.

How should I use this toolkit?

Read the introduction to the toolkit if you want background and historical information on evidence synthesis and additional guidance for when, why, and how to use the toolkit. If you are ready to conduct a rapid evidence synthesis, see the step-by-step instructions starting with Scoping.

TABLE OF CONTENTS

1. INTRODUCTION	<u>04</u>
2. SELECTING AN EVIDENCE PRODUCT TO FIT YOUR PURPOSE	<u>08</u>
3. PREPARING AN EVIDENCE SYNTHESIS PRODUCT: STEP-BY-STEP INSTRUCTIONS	<u>09</u>
4. REFERENCES	<u>31</u>
5. APPENDICES	<u>36</u>
6. ACKNOWLEDGEMENT	<u>46</u>



INTRODUCTION

Purpose of this toolkit

As researchers, navigating the scientific literature is normal. We search it, we find relevant articles, we cite them. However, there are many benefits to taking a more systematic and rigorous approach to synthesizing the literature, including:

- Getting a firm grounding in the literature base of your topic
- The possibility of publishing your review
- Using evidence-informed methods

Systematic reviews are a well-established method for informing decision-making. However, sometimes we don't have the rationale, time, or resources to complete a full systematic review. **The purpose of this toolkit is to provide guidance for adapting evidence synthesis methods for implementation science-related evidence needs with 1-4 month timelines.**

The primary audience for this toolkit is implementation scientists who have some familiarity with navigating the scientific literature. Also, we acknowledge that typically, completing a systematic literature review requires access to subscription-only scientific literature.

We developed this toolkit for the OPTICC and IMPACT Centers to advance rapid, practical implementation methods. Center scientists and pilot project leaders primarily use rapid evidence methods for identifying determinants (i.e., facilitators and barriers) that might affect implementation of an evidence-based practice. They then prioritize these determinants, match them with potential implementation mechanisms and strategies using causal pathway diagrams, and conduct rapid testing to optimize implementation strategies. Though originally written as a tool for this process, this toolkit can be used by any independent researcher seeking to systematically review evidence on a shortened timeline.

In this toolkit, we will provide:

- An overview of evidence synthesis products and the types of evidence needs they are designed to address
- Links to existing toolkits for systematic review and scoping review methods
- Guidance for selecting evidence synthesis products for evidence needs with 1-4 month timeframes, including their level of rigor
- Guidance for refining your research question(s) to a scale that can be addressed in 1-4 months
- Step-by-step instructions for conducting evidence syntheses in 1-4 months

- Guidance on ways to disseminate your evidence synthesis
- Examples of the OPTICC/IMPACT evidence synthesis process

Evidence synthesis products – a brief overview

Traditional evidence synthesis methods

Evidence synthesis was born in the 1990s along with the evidence-based medicine movement. The primary goal of synthesis is systematically using published evidence to guide clinical decisions via clinical guidelines (Claridge and Fabian, 2005). Evidence-based medicine is one of the major developments in modern medicine, and counts among its accomplishments tremendous advances in the scientific methods of evidence synthesis, most commonly systematic reviews (Djulbegovic and Guyatt, 2017; Sackett et al., 1996).

The rigor and methods of systematic reviews have continued to evolve, and systematic reviews and meta-analyses are considered some of the most robust forms of evidence (Chloros et al., 2022). Beyond clinical guidelines, these methods are increasingly used for other purposes such as to identify research gaps, inform policy, guide selection of practices to implement, and summarize an ever-increasing literature base.

However, systematic reviews take a long time and use a lot of resources. These resources are justified when informing clinical care, as patients could be harmed if clinical guidelines and the evidence behind them is incomplete or inaccurate. However, as evidence synthesis methods become more widely used, not all their uses directly inform clinical care, so resource-intensive methods may not always be warranted. Thus, the field of “rapid evidence reviews” has evolved.

The typical phases of a full systematic review are:

Research plan phase

- **Research questions:** defining the questions of interest and articulating what the review will be used for
- **Scoping:** refining the research questions, selecting the type of review, completing the inclusion and exclusion criteria, and finalizing the search terms and strategy
- **Stakeholder engagement:** getting stakeholder feedback on the research questions and scope
- **Register/publish protocol:** publishing as an academic manuscript, posting for public comment, or registering with a systematic review registry (such as PROSPERO, Cochrane Collaboration, or Campbell Collaboration)

Systematic review phase

- **Searching:** conducting and documenting the literature search
- **Study selection:** reviewing all records returned in the literature search, typically checking titles and abstracts against inclusion and exclusion criteria and excluding irrelevant records, then reviewing the full text of remaining records against inclusion and exclusion criteria
- **Quality appraisal:** assessing quality of full-text articles meeting inclusion criteria, typically using a formal tool for assessing study design and quality
- **Data abstraction:** transferring data elements of interest to a study database for analysis
- **Data synthesis:** producing data tables for writing and for reporting, assessing need or ability to conduct meta-analysis, standardizing effect estimates and conducting meta-analyses if warranted, and narratively synthesizing findings
- **Stakeholder engagement:** presenting findings to stakeholders, getting feedback to assist with interpretation, and making changes as needed
- **Completing report:** writing an academic manuscript or technical report for scientific publication

Adapting systematic review methods for rapid evidence needs

Rapid evidence reviews use truncated or otherwise abbreviated systematic review methods. Adaptations of traditional systematic review methods typically include one or more of the following:

- **Divert or redeploy team effort:** increasing the size and/or effort of the review team to complete the review in a shorter timeframe
- **Narrow the scope:** limiting the number of research questions, the search timeframe, or the study designs, or narrowing populations and/or interventions
- **Use shortcuts in study selection:** for example, having a single reviewer assess articles for inclusion and identifying articles unlikely to be relevant using keyword searching and/or artificial intelligence (AI) tools
- **Omit or do informal quality rating:** not conducting quality rating or using informal rating methods
- **Abstract limited data from articles:** focusing on a minimal set of data elements to extract from included studies
- **Prepare a shorter report that may or may not be published:** including potential phased reporting of separate research questions

What not to shorten and downsides of rapid systematic review methods

High-quality literature reviews can be conducted in short timelines. The length of the review process need not be an indicator of reduced quality or credibility. If well conducted and presented clearly, a rapid systematic review can be highly accessible to decision-makers and stakeholders. However, methods for shortening a review's completion time can introduce bias by increasing the chances the included evidence base is incomplete, contains inappropriately included evidence, or has methodological or applicability issues that are not adequately described in the report.

We highlight aspects of a review that we do not recommend shortening. First, stakeholder engagement is arguably the most important step in any review, and rapid systematic reviews are no exception (King et al., 2022). We have yet to find a substitute for meaningful, well-prepared discussion with relevant stakeholders in the planning stages of a review. During these discussions, the review team and stakeholders can achieve shared understanding on the purpose of the review, how it will be used, the research questions, timeframe in which the evidence is needed, and the full scope and limitations of the review and expected evidence. If time is particularly short, we recommend prioritizing whatever time is available for the writing and discussions needed to achieve a refined scope.

Second, it can be tempting to allow expediency to omit a search for specific population group data, or to forgo a health equity focus. However, this might prevent you from providing evidence important to understanding health equity issues. Consider designing your product to enhance, rather than inhibit, your ability to comment on health equity concerns. Consider focusing your scope on historically marginalized populations. Even a lack of evidence is a finding and can inform future research needs.

[Back to Table of Contents](#)

SELECTING AN EVIDENCE PRODUCT TO FIT YOUR PURPOSE

Understanding how precisely a systematic review will be used is critically important, perhaps especially in the context of rapid evidence synthesis. As mentioned above, the systematic review method was born as a tool for guiding clinical care as part of the evidence-based medicine movement, and the rigor of these traditional methods reflects that use. However, we have seen multiple other uses for systematic reviews, including mapping evidence gaps to inform new research, guiding organizational or programmatic decisions, and determining the need for a full systematic review. **Table 1** shows multiple evidence synthesis products with different uses and time frames.

Table 1: Example evidence products and their intended use

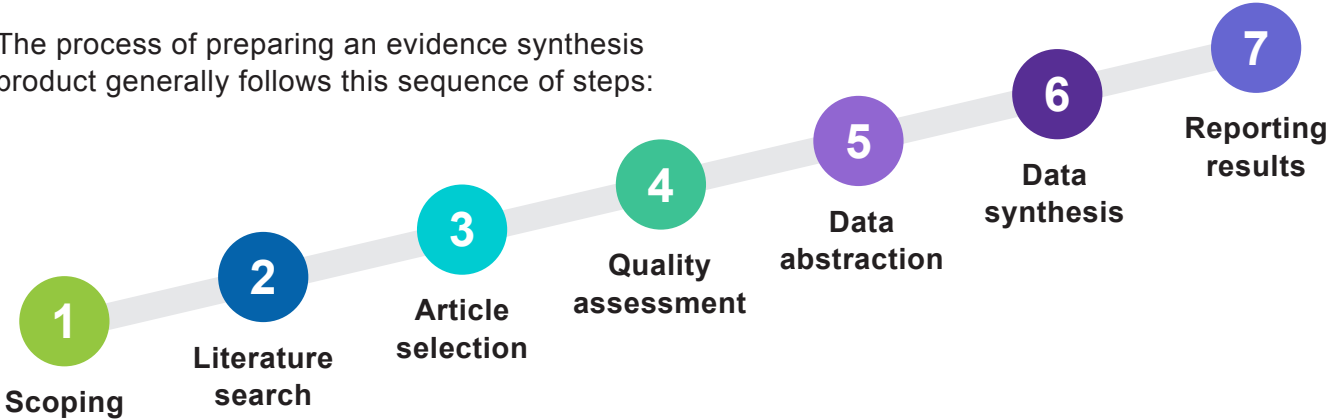
Product	Description	Intended use	Publishable?	Search	Potential time frame	Potential team size
Evidence scan	Summarizes findings of existing systematic reviews and major trials or other well-conducted studies. Product varies based on need; could include: - High-level summary/key takeaways - List, table, or inventory developed using evidence synthesis methods	Guide time-sensitive team decision-making; inform larger research projects and/or grant proposals	Usually for internal use only	Best evidence (nonsystematic);	1-4 months	1-2 team members
Evidence Summary	Short report with detailed evidence tables or inventories, synthesis and recommendations for future research	Guide internal decision-making	For internal or external use	Best evidence (nonsystematic)	3-6 months	2-3 team members
Scoping/narrative review*	Iterative/flexible summary of concepts, definitions, current research and gaps	Map existing evidence; identify gaps; determine need for full review	Yes, publishable as a scientific product	Systematic/iterative	4-8 months	1-3 team members
Rapid systematic review*	Systematic review conducted using abbreviated methods (e.g., search, study designs, study selection)	Inform clinical questions with time-sensitive needs; identify gaps	Yes, publishable as a scientific product	Systematic	3-6 months	2-3 team members
Full systematic review*	Systematic review using gold-standard methods	Inform clinical questions or practice	Yes, publishable as a scientific product	Systematic	6-12 months	3-5 team members

*These three products are not officially within scope of this toolkit but the processes to generate them overlap with the steps of rapid evidence synthesis so some examples are from producing scoping or systematic reviews

[Back to Table of Contents](#)

PREPARING AN EVIDENCE SYNTHESIS PRODUCT: STEP-BY-STEP INSTRUCTIONS

The process of preparing an evidence synthesis product generally follows this sequence of steps:



In the following sections, we provide guidance for each step of this process and describe areas of flexibility depending on your project’s purpose, scope, and timeline.

1 Scoping: Right-sizing scope for available time, evidence needs

Scoping is the process of aligning the goals, processes, and products of your evidence synthesis with the evidence needs and timelines of your project partners. Scoping is perhaps the most important phase in developing an evidence product. While you may choose to accelerate other phases of your review, it is important to set aside plenty of time and mental space to scope your evidence synthesis. The amount of time spent on scoping varies, but we often spend a quarter or more of our evidence synthesis project time on this phase.

“The art of proposing a question must be held of higher value than solving it.”

– Mathematician Georg Cantor

Involve stakeholders

We recommend consulting with project stakeholders (e.g., project advisers, future users of the product, health professionals, decisionmakers) as you select and refine the topic of your evidence synthesis. If your project is focused on surfacing previously identified determinants for implementing an evidence-based practice in a specific setting, stakeholders might simply be your project team. An expert in evidence-based practices or implementation science (or an expert in implementing that evidence-based practice) also can provide insights to inform your scoping.

Stakeholders can provide valuable insight and clarity to help focus the purpose and utility of your evidence synthesis, your research questions, and inclusion criteria (Garritty et al., 2021; Tricco et al., 2017). Stakeholders also can help identify foundational literature and exemplar papers on your topic of interest. We recommend seeking stakeholder input and feedback during the scoping phase, sharing the evolving work plan to enable shared understanding of the planned work, and checking in periodically throughout all phases of the review.

As you work with stakeholders, consider these practices:

- Share your draft written work plan (see “Start a work plan” in this section and **Appendices A and B**). This can help the team and stakeholders develop a shared understanding of the planned work. It serves as a record of evolving changes to the plan and documentation of the review activities.
- Be clear about the exact timeframe constraints for the review, and adjust your scope and workplan accordingly.
- Check in with stakeholders as you start to identify articles for inclusion in your review. Stakeholders can help you prioritize which data elements to extract from included studies.
- Review your preliminary learnings with stakeholders. They can help you interpret your findings and determine the best format for reporting your results.

Preliminary scan of the literature

Before you embark on your evidence synthesis, we recommend conducting a preliminary scan of the literature to identify any existing evidence reviews on your topic, gauge the feasibility of your own evidence product, and inform conversations with stakeholders (Tricco et al., 2017). A preliminary scan can help you identify:

- **Existing evidence reviews on the same topic:** If you identify existing evidence reviews on your topic, you may choose to alter your approach. For example, you could
 - Rely exclusively on the existing reviews as the basis of your own evidence product
 - Do a deeper dive to extract additional relevant details from the individual studies included in the reviews
 - Update the existing reviews with more recent primary studies, and/or expand your inclusion criteria to incorporate additional primary studies
 - Adapt the search strategies from these reviews for your own evidence product
- **Existing reviews on similar topics:** These reviews might serve as a model for the design and/or output of your own evidence product. You can adapt the search strategies and methods of these reviews to fit your own research questions and inclusion criteria.

- **Exemplar papers:** These are studies related to your topic that you expect to include in your final evidence product (Tricco et al., 2017; Dobbins, 2017). While identifying exemplar papers in advance is not essential, it can help you crystallize your scope and approach. At the Literature Search phase of your review, test your candidate search strategies by checking whether they identify these exemplar papers.

TIP ONE

At the Literature Search phase of your review, test your candidate search strategies by checking if they identify the exemplar papers.

Start a work plan

To organize and document the scope of your review, we recommend a well-developed work plan. It will be a reference guide throughout your review, and can evolve over time as you gain a deeper understanding of the relevant evidence (Garrity, et al., 2021; Tricco et al., 2017). A sample work plan template is in **Appendix A**, and an example of a completed work plan is in **Appendix B**.

Crystallizing your purpose

To clarify the purpose of your evidence product, consider the following questions:

- Who will want this evidence product?
- Why do they want it?
- What would they like to learn from it?
- How will they use this information?

To organize your thoughts, you could phrase your purpose with the following format:

This *[type of evidence product]* will describe/provide a *[list, table, inventory, summary, synthesis, analysis, etc.]* of *[outcomes of interest for your evidence product]* that *[users of evidence product]* will use to *[describe how evidence product will be used]*.

Here are some examples of purpose statements:

- Example 1: This evidence scan will provide a list of implementation-related costs that the principal investigator will use to design an implementation strategy costing toolkit.
- Example 2: This rapid systematic review will provide an inventory of implementation barriers that the project team will use to guide rapid ethnography and future implementation trial design.

It is important to clearly define the purpose of your evidence product. This has implications for your scope, search strategy, and synthesis.

EXAMPLE Clarifying the purpose for Paula's evidence scan

In 2020, a researcher with Kaiser Permanente Washington's (KPWA) Learning Health System program asked Paula to synthesize the evidence about pain management models. Paula met with stakeholders from the program and asked what kinds of information they were interested in and how they intended to use the information. They explained that they wanted to design a new model for working with patients with chronic musculoskeletal pain and they wanted to pilot test this model in a rural primary care clinic. They were hoping Paula could produce a brief, high-level summary describing key elements of evidence-based pain management models that could be implemented in primary care. They planned to use this evidence scan to design their pain management pilot program and obtain buy-in and support from KPWA leaders. Based on these conversations, Paula crystallized the purpose of the evidence product as follows:

This evidence scan will describe key elements of evidence-based pain management models that are implementable in primary care. The team will use this evidence scan to design and implement a pilot pain management program in a rural primary care clinic and obtain buy-in and support from KPWA leaders.

This process of crystallizing her purpose helped Paula prioritize which evidence to include (for example, pain management models that were implementable in a primary care clinic) and how to present this evidence (for example, by concretely describing key features of these models and by providing case studies to help the clinic understand how to implement these features).

Refining your research questions

Your research questions should clearly articulate what you want to learn from your review. Good research questions are:

- **Specific** (clearly stating the outcomes, populations, settings, etc., of interest)
- **Answerable** (feasible to address given your available literature and resources)
- **Neutral** (not framed with a particular direction for the outcome in mind) (Dobbins, 2017)

Here are some examples of well-formulated research questions:

- **Example 1:** What are categories of costs associated with implementation strategies for cancer-related interventions in health care delivery organizations?
- **Example 2:** What are barriers to implementing measurement-based behavioral health care for youth in under resourced settings?

EXAMPLE Refining research questions for Rosemary’s scoping review

For her IMPACT Center project, Rosemary was interested in leveraging existing literature to develop causal pathway diagrams that depict how peer-support interventions support the delivery of mental health interventions. Initially, her primary research question was:

What mechanisms have been examined to explain how peer support interventions improve psychosocial, mental health, and service provision outcomes for clients? (initial research question)

However, after consultation with Nora and Paula and a preliminary scan of the literature, Rosemary refined her research question to provide more specificity about how she would identify relevant evidence (e.g., focus on theories used in randomized controlled trials), ensure it would be answerable given her time constraints and the existing evidence base (determined with a preliminary literature scan), and remain neutral on the expected direction of outcome (e.g., avoiding terms like “improve” or “worsen.”) Her refined research question was:

What theories or conceptual models have been used in randomized controlled trials of one-to-one peer support interventions for adults or youth receiving outpatient mental health services? (refined research question)

This refined research question helped Rosemary improve the focus and efficiency of her review while still allowing her to achieve her goal of developing causal pathway diagrams that were grounded in the research literature.

Refining your inclusion criteria

Clearly define the parameters of evidence you will consider eligible for your review. These parameters often follow the PICOTS format (population, intervention, comparison, outcomes, timing, setting), with additional categories such as study design, language, and/or other criteria important to your particular review (Tricco et al., 2017; Dobbins, 2017). Typically, several discussions over time may be required to fully refine the inclusion criteria.

Keep in mind that the outcomes for your evidence product may differ from the primary outcomes of your included studies. For example, you may be interested in identifying barriers to implementing cancer screening programs. The studies included in your review may describe the implementation of these programs and report outcomes such as screening participation or cancer detection rates. However, for your evidence product, you may focus on abstracting information about implementation barriers—your outcome of interest.

It is often helpful to organize your inclusion and exclusion criteria in a table (see example). As with most components of your work plan, your inclusion and exclusion table may evolve over time as you become more familiar with the literature.

EXAMPLE Clarifying inclusion criteria for Ruben’s rapid systematic review

In consultation with project stakeholders, Ruben crafted the following research question for his IMPACT Center project: “What are the determinants (e.g., barriers and facilitators) of implementing measurement-based behavioral health care for youth in under-resourced settings?” Next, he took a first pass at outlining his inclusion and exclusion criteria based on his current knowledge of the literature.

Version 1.0: Inclusion and Exclusion Criteria on Determinants of Measurement-Based Care for Youth in Underresourced Settings

Population	Youth	
Setting	<ul style="list-style-type: none">• Underresourced mental or behavioral health care clinics• Community mental health centers	
Intervention	Measurement-based care in behavioral or mental health	
Comparison		
Outcomes of interest for this evidence product	<ul style="list-style-type: none">• Implementation determinants• Intervention effectiveness?• Intervention fidelity?	
Timing (years of search)	<ul style="list-style-type: none">• 2018-present• Existing review used for publications pre-2018	
Study design	<ul style="list-style-type: none">• Quantitative• Qualitative• Mixed-methods	

After reviewing several articles against his inclusion criteria, Ruben realized the need to add more specificity to some inclusion criteria, broaden his scope for other criteria, and add explicit exclusion criteria. He refined his criteria in an iterative process as he became more familiar with the literature and the types of data that would be more (and less) relevant to his evidence product. A subsequent, more refined version of his inclusion and exclusion table is below, with deleted text in ~~strike through~~ and with revisions and notes in magenta text.

Version 3.0: Inclusion and Exclusion Criteria on Determinants of Measurement-Based Care for Youth in Underresourced Settings

	Inclusion	Exclusion	Note on refined criteria
Population	<p>Youth</p> <p>Those who have experienced measurement-based behavioral health care (MBC) for youth, including:</p> <ul style="list-style-type: none"> • Youth clients/patients (age <19) • Parents of youth clients/patients • Clinicians • Clinic staff 	Adult patients	<i>Ruben realized that multiple populations (youth clients, parents, clinicians, clinic staff) might report barriers or facilitators to implementing MBC. However, he wanted to exclude studies of MBC provided exclusively to adults.</i>
Country	<ul style="list-style-type: none"> • U.S. 		<i>Ruben determined U.S.-based studies would be the most applicable to the rapid ethnography and user-centered design components of his IMPACT Center project.</i>
Setting	<ul style="list-style-type: none"> • Underresourced Mental or behavioral health care clinics • Community mental health centers <p><i>Particularly interested in underresourced settings</i></p>	<ul style="list-style-type: none"> • Academic medical centers • Primarily medical facilities (e.g., primary care) • Inpatient facilities (e.g., psychiatric hospitals) 	<i>Ruben decided that studies in any behavioral or mental health clinics could provide valuable information on implementation determinants, even if not “underresourced.” However, he emphasized underresourced settings as of particular interest for his project. Ruben also noted settings not relevant for his project.</i>
Intervention	MBC in behavioral or mental health	<ul style="list-style-type: none"> • Parent-mediated services • Teacher-delivered interventions • Nurse-delivered interventions 	<i>Reviewing some literature helped Ruben identify interventions to exclude because they would not be relevant to his IMPACT Center project</i>
Comparison	<i>Any, including no comparison</i>		<i>Ruben could assess his outcomes (implementation determinants) regardless of comparison groups, so he decided not to exclude studies based on comparators</i>
Outcomes of interest for this evidence product	<p>Implementation determinants (e.g., barriers and facilitators)</p> <p>Intervention effectiveness?</p> <p>Intervention fidelity?</p>		<i>Ruben focused his outcomes and provided concrete examples</i>
Timing (years of search)	2018-present (bridging from existing review)		<i>Ruben further narrowed his scope to studies published after a 2018 review on MBC barriers and facilitators</i>

Study design	<ul style="list-style-type: none"> Quantitative Qualitative Mixed-methods 	<ul style="list-style-type: none"> Editorials, opinion pieces, narrative reviews Not peer-reviewed (e.g., conference abstracts) 	<i>Reviewing some literature helped Ruben identify article types to exclude because of a higher risk of bias</i>
Language	English		<i>Ruben opted to focus on English-language articles due to time constraints and an interest in literature most relevant to his U.S.-based project</i>

2 Literature search

A literature search collects relevant documents via an organized series of queries to online publication databases. Your search strategy will be informed by your type of evidence product, the purpose of your review, and resource constraints (Garritty et al., 2021; Tricco et al., 2017; Dobbins, 2017). Regardless of the search strategy, we recommend:

- (a) Saving your search results in a single location or reference management system (e.g., EndNote, RefWorks)
- (b) Documenting your search process for future reference

Table 2 describes two types of search strategies (systematic and “best evidence”) and key characteristics of each.

Table 2: Types of Search Strategies

	Systematic search	“Best evidence” search
Definition	A structured, comprehensive, reproducible, and transparent method of identifying extensive literature relevant to your topic (Cooper et al., 2018)	A process designed to surface key foundational articles and existing syntheses but not necessarily every article on a given topic
Desired search results	All available articles relevant to your topic and published within your search dates	Key systematic reviews, foundational literature, frequently cited articles, recent studies
Timeline and staff capacity	Longer timeline and sufficient staff capacity to review references	Quick timeline and/or limited staff capacity to review references
Team members	Ideally 2 or more team members available to review references	1-2 team members available to review references
Research librarian consultation?	Highly recommended	Beneficial but not essential
Quality of search method	More rigorous	Less rigorous
Comprehensiveness of search results	More comprehensive	Less comprehensive

	Systematic search	“Best evidence” search
Reproducible?	Yes	No
Suitable for publication in peer-reviewed journal?	Yes	Maybe
Suitable for dissemination to external audience?	Yes	Maybe
Important to document search process?	Yes	Yes

Systematic search

A systematic search is a structured, comprehensive, reproducible, and transparent method of identifying research literature relevant to your topic (Cooper et al., 2018). As described in **Table 2**, it is a rigorous method that is suitable for dissemination to an external audience and publication in a peer-reviewed journal. **Detailed guidance for developing a systematic search strategy is outside the scope of this toolkit**, however, we can offer the following recommendations:

- **Consult with a research librarian or information specialist.** If your institution does not have librarians, consider making an appointment with a research librarian at a local public university. Research librarians can help you increase the quality, rigor, comprehensiveness, and manageability of your search strategy. This consultation is particularly important if you hope to publish your evidence product in a peer-reviewed journal.
- Use your inclusion and exclusion criteria as the basis for selecting search terms and synonyms that are specific to your population, setting, intervention, outcomes, etc.
- Use PubMed’s [Medical Subject Headings](#) (MeSH) browser to find MeSH terms related to your search topic.
- Review the search strategies of systematic (and nonsystematic) reviews on similar topics to gain ideas on search terms, search structure, and databases.
- Incorporate implementation science-focused search terms related to your topic (see Sample implementation-related terms).

You can also **test your search strategy** with the following steps:

1. Run test searches in a database you are familiar with
2. Document the number of search results returned
3. Review the first few pages of references to gauge the relevance of your results
4. Check whether your search returned any key exemplar papers that you expect to include in your review, see Step 1. Scoping)

Developing a search strategy is an iterative process. You may need to revise your search strategy and/or test it in a different database if your test does not return sufficient relevant results or your key exemplar papers, or if the search yields too many results to review within your time and resource constraints. As you continue to test and refine your search strategy, consider adding or excluding specific terms, and/or restricting by certain criteria (e.g., date ranges, publication language, study designs).

Sample implementation science-related search terms

For implementation science-related evidence synthesis, consider using search terms from previous publications:

- **Implementation-related terms** used in Weiner et al. (2020):

Adopt[tiab] OR adopts[tiab] OR adopted[tiab] OR adoption[tiab] NOT “adoption”[MeSH Terms] OR Implement[tiab] OR implements[tiab] OR implementation[tiab] OR implementation[ot] OR “health plan implementation”[MeSH Terms] OR “quality improvement”[tiab] OR “quality improvement”[tiab] OR “quality improvement”[MeSH Terms] OR diffused[tiab] OR diffusion[tiab] OR “diffusion of innovation”[MeSH Terms] OR “health information exchange”[MeSH Terms] OR “knowledge translation”[tw] OR “knowledge exchange”[tw]

- **Determinant-related terms** used for PubMed search in Powell et al. (2020):

implement* OR integrat* OR barriers OR facilitators OR “lessons learned” OR disseminat* OR fidelity OR adhere OR adherence OR diffus* OR adopt* OR sustain* OR “knowledge translation” OR translat*

EXAMPLE Designing a systematic search for Laura’s evidence scan

For her evidence scan on the costs of implementing cancer-related interventions in health care delivery organizations, Laura needed three domains of search terms: (1) implementation science-related terms; (2) cost-related terms; and (3) cancer-related terms. To select her implementation science-related terms, Laura looked to an existing systematic review on measures of readiness for implementation (Weiner et al., 2020), which specifies the implementation-related terms used to build its PubMed search strategy.

For her cost- and cancer-related terms, Laura experimented with different combinations of PubMed’s MeSH terms and regular search terms. Laura limited her searches to articles published from 2014 to present to align with her inclusion criteria. Laura used an Excel spreadsheet (see Sample table) to document different iterations of her search strategy and the number of results returned. She then reviewed the candidate search strategies and their first few pages of results to select a search strategy that (a) returned a large number of results; (b) was still manageable within her timeline; and (c) did not contain an overabundance of irrelevant articles.

Note: this method of developing a search strategy fit the goals of Laura’s evidence product, which was to create a table of implementation-related costs. However, consulting with a research librarian could have increased the quality, rigor, and comprehensiveness of Laura’s search strategy and opened opportunities to publish her evidence product in a peer-reviewed journal.

Sample table for documenting and testing search strategies:

Search #	Query	Search Details	Results	Date searched	Notes
25	#1 and #11 and #21	("neoplasms/prevention and control"[MeSH Terms]	227	2021-05-18	Decided 5/18/2021 to use this search
24	#1 and #11 and #21	"neoplasms/prevention and control"[MeSH Terms]	590	2021-05-18	
23	#11 and #13 and #21	("costs and cost analysis/classification"[MeSH Term]	4,418	2021-05-18	
22	#11 and #13 and #21	"costs and cost analysis/classification"[MeSH Term]	6,989	2021-05-18	
21	Adopt[tiab] OR adopts[tiab] OR adopted	("Adopt"[Title/Abstract] OR "adopts"[Title/Abstra	819,152	2021-05-18	Implementation terms from Wiener 2020
19	#16 and #18	"neoplasms/prevention and control"[MeSH Terms]	369	2021-05-18	
18	Implement[tiab] OR implements[tiab]	"Implement"[Title/Abstract] OR "implements"[Titl	342,470	2021-05-18	
17	#1 and #11 and #12	"neoplasms/prevention and control"[MeSH Terms]	206	2021-05-18	
16	#1 and #11 and #12	"neoplasms/prevention and control"[MeSH Terms]	527	2021-05-18	
15	#11 and #12 and #13	("costs and cost analysis/classification"[MeSH Term]	3,674	2021-05-18	
14	#11 and #12 and #13	"costs and cost analysis/classification"[MeSH Term]	5,821	2021-05-18	
13	#1 or #7	"neoplasms/prevention and control"[MeSH Terms]	4,351,340	2021-05-18	Cancer terms
12	#2 or #8 or #9	"Implementation Science"[MeSH Terms] OR "imple	522,548	2021-05-18	Implementation terms (simple)
11	#4 or #5 or #6 or #10	"costs and cost analysis/classification"[MeSH Terms]	869,106	2021-05-18	Costs terms
10	cost*	"cost"[All Fields]	869,049	2021-05-18	
9	adoption	"adopt"[All Fields] OR "adoptability"[All Fields] OR	250,771	2021-05-18	
8	implementation	"implementability"[All Fields] OR "implementable	290,056	2021-05-18	
7	cancer	"cancer s"[All Fields] OR "cancerated"[All Fields] O	4,351,340	2021-05-18	Cancer terms (big)
6	"Direct Service Costs/classification"[Me	"direct service costs/classification"[MeSH Terms]	7	2021-05-18	
5	"Health Care Costs"[Mesh]	"Health Care Costs"[MeSH Terms]	67,779	2021-05-18	
4	"Costs and Cost Analysis/classification"	"costs and cost analysis/classification"[MeSH Term	319	2021-05-18	
2	"Implementation Science"[Mesh]	"Implementation Science"[MeSH Terms]	688	2021-05-18	Implementation - mesh only
1	"Neoplasms/prevention and control"[M	"neoplasms/prevention and control"[MeSH Terms]	97,920	2021-05-18	Cancer - mesh only

Best-evidence search

A best-evidence search is designed to surface limited high-quality evidence, such as existing syntheses and key foundational articles. As described in **Table 2**, it is less rigorous and comprehensive than a systematic search and thus less suitable for publication in a peer-reviewed journal. However, a best-evidence search typically requires less time and resources than a systematic search, and can be a great fit for projects that need a grounding in the evidence base but do not necessarily need to incorporate every article on a particular topic.

Approaches to best-evidence searches vary (Hartling et al., 2015; Abou-Sett et al., 2016; Polisena et al., 2015) and there is no single “right” way to conduct these searches. We offer strategies that we have found useful:

- **Preliminary literature scan:** Familiarize yourself with the literature before you embark on your search (see Step 1. Scoping). Review articles recommended by stakeholders, narrative reviews on your topic, and previously identified “exemplar papers” that you expect to include in your final product. You can conduct informal searches with a search engine (e.g., Google), and research literature databases.
- **Focused literature search:** After familiarizing yourself with the literature base, search database(s) using keywords from your inclusion criteria. Refine your results to focus on higher quality, more recent, and more frequently cited evidence by:
 - o Filtering by article type or study design: This will identify articles likely to be of higher quality. Study designs generally considered to be higher quality are systematic reviews and meta-analyses, followed by randomized clinical trials.
 - o Filtering by publication date: This will identify more recent literature, which potentially could be more relevant to your project.

- o Identifying highly cited articles: Most databases show how many times an article has been cited (e.g., “cited by 248 articles”). Typically the articles that are considered foundational to a field are the ones that are most frequently cited.
- **“Snowballing”**: This process uses relevant articles to locate additional articles (Page et al., 2021) using two main strategies:
 - o Reverse snowballing/backward citation searches: As you identify relevant articles (particularly exemplar or foundational articles), review the references cited in the introduction and discussion sections to find additional articles.
 - o Forward snowballing/forward citation searches: Most databases allow “forward citation” (or “cited by”) searching, which shows articles that cite or are related to an article. While viewing the record for a specific article, look for links labeled “cited by,” “similar articles,” “related articles,” “citation map,” or something similar.

Continue snowballing until you approach saturation (repeatedly identifying the same articles with no identifications of new articles).

- **Systematic review deep dive**: Technically a form of snowballing, this is examining the primary articles included in a systematic review on your topic (see example). This can be particularly useful when you need a more granular detail than provided in the systematic review (e.g., about implementation strategies used).

EXAMPLE Mike’s deep dive into an existing systematic review

For Mike’s IMPACT Center project, he sought to identify determinants of youth engagement in digital video-based mental health interventions to inform focus group planning and the development of causal pathway diagrams. Since Mike had a short timeline for this work, he chose to follow a best-evidence approach for his search strategy. He started with a preliminary literature scan, which uncovered an existing systematic review on barriers to digital mental health care for adolescents. Mike decided to do a “deep dive” into this systematic review by examining each individual study included in the review, identifying which interventions included video content (a focus area for his project), and extracting details about barriers and facilitators of youth engagement in those interventions.

3 Article selection

The article selection process applies a predetermined set of inclusion and exclusion criteria to the documents collected in the literature search, to decide which will be used to generate the evidence synthesis product. Once you have completed your literature search, you will assess the articles for relevance to your evidence product.

Article selection typically follows a two-step process (Garritty et al., 2021; Tricco et al., 2017; Dobbins, 2017):

- 1. Title and abstract screening:** The purpose of this phase is to remove references that are clearly irrelevant to your research question. For this phase, one or more team members act as screeners to examine the title and abstract of each citation and determine whether it should (a) be excluded, or (b) move forward to full-text review (because it could be relevant to your research question). You can also include option (c) discuss as a team. There is no need to document reasons for exclusion at this phase.
- 2. Full-text screening:** The purpose of this phase is to select articles for inclusion in your evidence product. For this phase, one or more screeners examine the full text of each article to assess whether it meets the inclusion criteria (see 1. Scoping, Refining your inclusion criteria).

Screeners should focus on the methods section of an article, which typically provides sufficient information for determining whether the article meets the prespecified criteria for population, intervention, comparison, outcomes, timing, setting, or other characteristics. Screeners decide whether each article should be (a) excluded, or (b) included in your review. You can include option (c) discuss as a team. For this phase, the best practice is documenting your reasons for excluding each article (e.g., ineligible population, outcomes, study design). This is particularly important if you intend to publish your evidence product, as it can help you create a literature flow diagram (Page et al., 2021).

Both phases can be accelerated by using a single screener instead of dual-independent review (which uses two screeners). If using a single screener, we recommend erring on the side of including articles or discussing them as a team rather than excluding articles. This reduces the likelihood of discarding potentially relevant articles.

Another approach is to conduct dual-independent review for a subset of references (e.g., 25% of the total references). The two screeners discuss questions and discrepancies in their reviews, then proceed to single review for the remainder of the references. Regardless of the procedure, document your article selection process, particularly if you intend to publish in a peer-reviewed journal.

Here are additional tips to make the article selection process smoother and more efficient:

Pilot article review

A pilot article review helps unify coding across screeners and clarify your inclusion criteria. Best practice is to pilot test both title and abstract screening and full-text screening.

First, select a subset of your citations to screen. We recommend about 30-50 citations for your Pilot Title and Abstract screening and about 15-20 articles for your Pilot Full-Text screening. Second, ask team members to screen the pilot citations independently and document their decisions (e.g., include, exclude) and notes (e.g., reasons for exclusion, questions about the inclusion criteria). Next, compare team members' ratings, discuss discrepancies, and update or clarify your inclusion criteria. If needed, you can do more pilot reviews until screeners' ratings are consistent and team members feel comfortable applying the inclusion criteria.

We recommend all team members who will participate in the article selection process participate in the pilots. If you will be conducting article selection independently, consider asking a project adviser or stakeholder to join you for the pilots. If that is not possible, it may still be helpful to pilot test your title and abstract screening and full-text screening yourself, to help clarify and finalize your inclusion criteria.

Software

Web-based software can help manage title and abstract screening, full-text screening, and other steps in the evidence synthesis process. Most software tools support collaboration among team members and provide customizable options for rating, tagging, and excluding articles. Software ranges from simple, free platforms designed solely for title and abstract screening (such as [Abstrackr](#) or [Rayyan](#)) to paid programs for title and abstract screening, full-text screening, quality rating, and data abstraction (such as [DistillerSR](#)). The [Systematic Review Toolbox](#) offers a searchable index of systematic review software. Researchers have published evaluations and key features of dozens of existing systematic review software tools (Kohl et al., 2018; Cowie et al., 2022; Harrison et al., 2020).

Cheat sheets

“Cheat sheets” are quick reference guides to help you make decisions during the article selection process. They are typically 1-2 pages and contain your research question(s), inclusion and exclusion criteria, reasons for exclusion (also called exclusion codes or “E-codes”) and, if helpful to your project, additional codes for tagging articles of interest (such as “relevant for discussion,” “priority population,” “find original trial”). A sample cheat sheet is in **Appendix C**.

4

Quality assessment

Quality assessment (also called “critical appraisal” or “risk of bias assessment”) is the process of appraising a study’s methods to evaluate the validity of its findings (Garritty et al., 2021; Tricco et al., 2017; Dobbins, 2017). For traditional systematic reviews, researchers assess the methodological quality of all studies included after the full-text screening phase.

Among many tools available (Farrah et al., 2019; Page et al., 2018) to assess risk of bias for specific study designs are:

- [Cochrane Risk of Bias](#) (RoB) tool (Sterne et al., 2019) for randomized trials
- [Newcastle-Ottawa Scale](#) (Wells et al., 2021) for nonrandomized studies

- [Risk Of Bias In Non-randomized Studies of Interventions](#) (ROBINS-I) (Sterne et al., 2016) for nonrandomized studies
- [Mixed Methods Appraisal Tool](#) (MMAT) (Hong et al., 2018) for mixed-methods research

These tools can help you identify and exclude poor-quality studies with serious limitations that could invalidate their results, as well as describe the overall methodological quality of your body of evidence.

For the implementation science field, quality assessment may involve evaluating the extent to which studies follow best practices for reporting key details of implementation strategies and outcomes. For example, the [Standards for Reporting Implementation Studies](#) (StaRI) initiative provides a 27-item checklist of items that authors should report in implementation studies of any study design (Pinnock et al., 2017a; Pinnock et al., 2017b).

For traditional systematic reviews, quality assessment typically involves two team members independently evaluating studies using a risk-of-bias tool and resolving discrepancies by consensus or discussion with a third team member. For evidence synthesis products with a shorter timeframe, researchers can abbreviate the quality assessment phase; however, this should be noted as a limitation of your evidence product. To abbreviate the quality assessment phase, researchers may consider the approaches described below (Garritty et al., 2021; Tricco et al., 2017; Dobbins, 2017):

- Using a single team member for quality assessment, with or without a second team member checking the first team member’s ratings for all or a subset of studies. (An example of this approach is described in the Lewis et al. 2020 review).
- Limiting quality assessment ratings to the items most important to your evidence product
- Identifying one or more “fatal flaws” that would prompt you to exclude a particular study for poor quality
- Omitting the quality assessment phase entirely (and noting this as a limitation)

For certain evidence products, such as those designed to scope the available literature rather than evaluate specific effects, quality assessment may not be necessary (Tricco et al., 2017).

5 Data abstraction

Data abstraction (also called data extraction) is the process of pulling out relevant information from your included articles (Garritty et al., 2021; Tricco et al., 2017; Dobbins, 2017). This should include basic information about the studies (e.g., first author, year of publication, study design, population description, sample size, geographic location, clinical setting), as well as additional details to help answer your research question (e.g., intervention description, implementation strategies used, barriers to implementation, facilitators of implementation, implementation outcomes measured, effect sizes). For most projects with rapid evidence needs, it may be simplest to abstract these data into a table in Microsoft Excel or Word. An example

template for data abstraction is in **Appendix C**. Some systematic review software tools (see 3. Article selection) also allow you to create custom forms for data abstraction.

For traditional systematic reviews, data abstraction typically involves one team member independently abstracting data and a second team member checking the data for accuracy, with conflicts resolved by consensus or discussion with a third team member. For evidence synthesis products with a shorter timeframe, researchers may consider various options for abbreviating the data abstraction phase, such as:

- Using a single team member for data abstraction
- Limiting data abstraction and/or dual review of data abstraction to a minimal set of data elements needed to address your research question
- Using data from existing systematic reviews on your topic (Garritty et al., 2021; Tricco et al., 2017; Dobbins, 2017)

When abstracting data, best practice is to stay close to how the information is reported in the included articles. For example, if an article describes how providers were trained on an intervention, we recommend summarizing that description (e.g., “online portal with 12 self-learning modules”) rather than attempting to pre-emptively fit this description into a category (e.g., “conduct ongoing training”). We recommend waiting until the next step (data synthesis) before starting to analyze or categorize your data and look for patterns across articles.

EXAMPLE Designing a data abstraction table for Paula’s rapid systematic review

In 2019, a team working with Kaiser Permanente Washington’s (KPWA) Learning Health System program asked Paula to help synthesize research literature on transition practices and implementation strategies used when transitioning stable patients from outpatient mental health services to primary care.

After the team had selected its set of included articles, Paula put together a draft data abstraction table based on the information she thought would help address the research question. Paula reviewed her draft data abstraction table with the team and incorporated feedback on additional data elements that would be useful for the project (e.g., information on the types of providers involved in the transition processes).

Rather than develop categories of transition practices and implementation strategies in advance, Paula created a single large free-text field to capture information about transition practices and implementation strategies as described in the included articles. Paula then abstracted data from the included articles into the updated data abstraction table, and a second team member reviewed the data for accuracy. For an example snippet of Paula’s data abstraction table, see **Appendix D**.

Data synthesis is the process of reviewing and organizing the information you have abstracted to identify similarities and differences across studies and to start drawing conclusions about your research questions (Garritty et al., 2021; Tricco et al., 2017; Dobbins, 2017). Data synthesis answers the question, “What are the overall conclusions from all of my included research?” (Dobbins, 2017).

While it is tempting to start synthesizing your data while you are abstracting it, best practice is to complete the data abstraction phase before turning to data synthesis. This can help you avoid jumping to conclusions and biasing your data abstraction phase. It can also save you time by avoiding the need to continuously revisit your included studies.

Data synthesis can take a variety of forms, but may include:

- A table or narrative summary describing your included studies (which may include an overview of populations, settings, sample sizes, effect sizes, etc.)
- A table or narrative summary that organizes your findings in a way that addresses your research question
- Charts or other visuals to display your findings (e.g., frequencies of implementation strategies identified in included studies)
- Additional tables that group your data by certain categories (e.g., by population, intervention, outcome), particularly for situations in which your findings differ by these categories
- A narrative summary or bullet points of your overall conclusions and implications

While many traditional systematic reviews also include meta-analyses to combine estimates of effect, advanced statistical analyses may not be relevant or practical for evidence products intended to support implementation science-related evidence needs with short timeframes.

Mapping your findings to a framework

Another useful way to organize and synthesize your findings is to categorize your data according to an existing framework or model. Mapping your findings to an existing framework also can help you draw connections to prior research. For implementation science-focused evidence products, you may consider mapping your findings to an implementation science framework, model, or taxonomy, such as:

- Implementation **process models (phases/steps)**
 - o Aarons et al. (2011); Exploration, Preparation, Implementation and Sustainment (EPIS) framework
 - o Meyers et al. (2012); Quality Implementation Framework
- Implementation **frameworks**

- o Proctor et al. (2009); Conceptual model of implementation research
- o Tabak et al. (2012); Models used in dissemination and implementation research
- o Nilsen (2015); Categories of implementation theories, models, frameworks
- o Strifler et al. (2018); Review of knowledge translation theories, models, & frameworks
- Implementation **outcomes**
 - o Proctor et al. (2009); Conceptual model of implementation research
 - o Proctor et al. (2011); Outcomes for implementation research
 - o Glasgow et al. (2019); RE-AIM planning and evaluation framework
 - o Damschroder et al. (2022a); CFIR Outcomes Addendum
- Implementation **contexts**
 - o Pfadenhauer et al. (2017); Context and Implementation of Complex Interventions (CICI) framework
- Implementation **strategies**
 - o Powell et al. (2015); Expert Recommendations for Implementing Change (ERIC) project
 - o Waltz et al. (2015); Categories of implementation strategies from ERIC project
 - o Slaughter et al. (2015); Fidelity to implementation strategies
 - o Cook et al. (2019); Implementation strategies in school settings
- Implementation **determinants, barriers and facilitators**
 - o Aarons et al. (2011); Exploration, Preparation, Implementation and Sustainment (EPIS) framework
 - o Chaudoir et al. (2013); Factors that affect implementation of health innovations
 - o Lewis et al. (2018); Mechanisms of change in implementation science
 - o Medlinskiene et al. (2021); Barriers and facilitators to uptake of new medicines
 - o Damschroder et al. (2022b); Consolidated Framework for Implementation Research (CFIR)
- Essential **elements of implementation studies or research proposals**
 - o Proctor et al. (2012); Ten key ingredients for implementation research
 - o Lewis et al. (2019) Ten point research agenda to improve implementation of measurement-based care
 - o Neta et al. (2021); Dissemination and Implementation Research at the National Cancer Institute

EXAMPLE Synthesizing data for Paula’s rapid systematic review

For Paula’s rapid systematic review on transitioning stable patients from outpatient mental health services to primary care, her data abstraction table contained a large free-text field that listed each transition practice as described in the included articles (see **Data abstraction** and **Appendix D**).

Paula then put all transition practices from all included articles into one long bulleted list. Next, she grouped these practices into initial categories, such as “medication management,” “shared treatment planning,” and “ongoing process improvement.” Paula met with her project team to share her initial categorizations and specific examples of each. After review and discussion, the team identified two distinct types of categories on Paula’s list: transition practices and implementation strategies.

Through iterative review and discussion, the team refined their definitions and categorizations of each transition practice, and the team identified an organizing framework (by Waltz et al., 2015) to define categories of implementation strategies. Paula then created a new data synthesis table to display categories and specific examples of transition practices and implementation strategies used in the included studies (**Table 3**).

Table 3. Excerpt of table from Paula’s rapid systematic review (Blasi, 2021)

Table Summary and examples of categories of transition practices and implementation strategies.		
	Description	Examples
<i>Implementation strategies: Approaches and techniques that enhance the adoption and sustainment of the identified transition practices</i>		
Train and educate stakeholders	Provide opportunities for mental health and primary care staff to learn about transitioning patients from mental health to primary care	Organize training sessions or webinars about managing mental health conditions and medications in primary care Provide staff with educational materials, such as an outline of the transition process, an annotated literature review, and/or sample language to help mental health providers talk with patients about transition planning
Use evaluative and iterative strategies	Involve staff and patients in evaluating and improving transition processes	Seek input from mental health providers, primary care providers, and patients about criteria for transition and content of transition letters and progress notes Perform critical reviews of patients who have mental health-related hospital admissions after their transition

7 Reporting results

Reporting your results involves pulling together all your accumulated evidence into a concise format that succinctly yet methodically addresses your research questions (Khangura et al., 2012). In most cases, you will decide on the format of your final evidence product during the scoping phase, as part of crystallizing your purpose and consulting with stakeholders.

We recommend continuing to check in with stakeholders as you complete your data synthesis to confirm the best format for reporting your results. Depending on the purpose of your evidence synthesis, your final product could include a range of one or more formats, including:

- A bulleted list (e.g., of implementation barriers)

- A table (e.g., displaying categories and examples of implementation strategies)
- A literature review section of a grant or manuscript
- A full scientific manuscript published in a peer-reviewed journal

Some examples of these formats are highlighted below:

EXAMPLE Table of barriers and facilitators for Mike’s IMPACT Center project

The evidence synthesis phase of Mike’s IMPACT Center project identified determinants (barriers and facilitators) of youth engagement in digital video-based mental health interventions. The “product” of his evidence synthesis was a table of barriers and facilitators (**Table 4**, below) that his team used to inform focus group planning and the development of causal pathway diagrams.

Table 4. Rapid Evidence Review-Identified Barriers and Facilitators of Using Video-delivered EBP Content

Barriers	Facilitators
Intervention-specific: Suitability of intervention (i.e., low accessibility & convenience)*	Intervention-specific: Suitability of intervention (i.e., high accessibility & convenience)
Intervention-specific: Usability of intervention (i.e., difficult to use and/or understand)*	Intervention-specific: Usability of intervention (i.e., easy to use platform and easy to understand)
Intervention-specific: Acceptability (features)*	Intervention-specific: Acceptability (features)
Person-specific: opportunity (i.e., [lack of] trust & anonymity)	Person-specific: opportunity (i.e. trust & anonymity)
Person-specific: Motivation (i.e., perceived lack of helpfulness and usefulness of intervention decrease likelihood of engagement)*	Person-specific: Motivation (i.e., perceived helpfulness and usefulness of intervention increase likelihood of engagement)
Not using/unfamiliarity with using the internet to access health related information	Regularly using the internet to access health-related information
Not having family members who exemplify using the internet to obtain health information	Parents who use the internet to obtain health information
Insufficient support/resources including lack of tech devices and/or access to the internet	Access to the internet, tech devices, and/or support and financial resources to engage with intervention
Not speaking English or language of intervention/English as a second language which may lead to lower comprehension	English-speaking//speaking the same language as in intervention
Busy schedule/lack of free time to engage with platform*	Time/ability to prioritize engagement with intervention in schedule
Intervention not engaging user sufficiently	Interactive elements in videos that facilitate engagement from viewer
Overly formal or academic language used in intervention*	Familiar and accessible language to audience used in intervention
Short attention span of young people*	Short videos and/or videos designed to captivate attention or give space for inattentiveness
Unappealing visual presentation of platform	Appealing visual presentation
Culturally insensitive aspects of intervention (i.e., inclusion of religious overtones)*	Culturally inclusive and sensitive platform

EXAMPLE Table of implementation Approaches and Drivers from Rapid Review by Owuso-Addo et al. (2021)

Here is an excerpt from a table displaying information about implementation processes from a peer-reviewed rapid evidence review about effective implementation approaches for healthy aging interventions for older adults:

Author,Year, Country	Area of intervention	Participants	Implementation processes						
			Approaches to implementation						Implementation drivers
			Self-directed/professional-led	Inter-agency partnership	Collaborative support/partnership	Co-design	Use of volunteers	Person-centred care	
Corbett et al. 2018 US	Physical activity (PA)	Older adults aged 70–89 years			✓				<ul style="list-style-type: none"> ○ Tailored social problem-solving strategies ○ Instructional materials to reinforce training ○ Structured PA beginning with lighter intensity to higher intensity
Reed et al. 2018 Australia	Chronic disease self-care management support	Older people aged 60+	✓		✓	✓		✓	<ul style="list-style-type: none"> ○ Clinician-led with no care coordination elements ○ Coaching and facilitation ○ Goal-setting ○ Care planning
Kerse et al. 2010 New Zealand	Home-based PA program plus social visits	Community-dwelling older people aged 75+						✓	<ul style="list-style-type: none"> ○ Use of significant others ○ Use of booster sessions ○ Tailoring PA participant's current level of ability ○ Individualised PA ○ Social visits
Wolff (2014) Germany	PA plus views on ageing	Community-dwelling adults 65+			✓	✓			<ul style="list-style-type: none"> ○ Group-based PA sessions supplemented by individualised-engagements ○ Goal-setting ○ Behaviour change techniques:- self-monitoring, using cues and action planning
...etc.									

EXAMPLE Rapid evidence synthesis products published in peer-reviewed journals

Here are examples of rapid evidence synthesis products that were created to meet immediate needs for implementation science projects and revised for publication in peer-reviewed journals:

- Blasi PR, Mettert KD, Coleman K, Lewis CC, Wagner E, Coghill MN, Dang T, Richards JE. Transitioning Patients from Outpatient Mental Health Services to Primary Care: A Rapid Literature Review. *Implement Res Pract.* 2021;2:1-13. doi:10.1177/26334895211041294.
- Heggie R, Boyd K, Wu O. How has implementation been incorporated in health technology assessments in the United Kingdom? A systematic rapid review. *Health Res Policy Syst.* 2021;19(1):118. Published 2021 Aug 18. doi:10.1186/s12961-021-00766-2
- Owusu-Addo E, Ofori-Asenso R, Batchelor F, Mahtani K, Brijnath B. Effective implementation approaches for healthy ageing interventions for older people: A rapid review. *Arch Gerontol Geriatr.* 2021;92:104263. doi:10.1016/j.archger.2020.104263
- Teper MH, Godard-Sebillotte C, Vedel I. Achieving the Goals of Dementia Plans: A Review of Evidence-Informed Implementation Strategies. *World Health Popul.* 2019;18(1):37-46. doi:10.12927/whp.2019.26060
- Slade SC, Philip K, Morris ME. Frameworks for embedding a research culture in allied health practice: a rapid review. *Health Res Policy Syst.* 2018;16(1):29. Published 2018 Mar 21. doi:10.1186/s12961-018-0304-2
- Wolfenden L, Carruthers J, Wyse R, Yoong S. Translation of tobacco control programs in schools: findings from a rapid review of systematic reviews of implementation and dissemination interventions. *Health Promot J Austr.* 2014;25(2):136-138. doi:10.1071/HE13089

REFERENCES

- Aarons GA, Hurlburt M, Horwitz SM. Advancing a Conceptual Model of Evidence-Based Practice Implementation in Public Service Eectors. *Adm Policy Ment Health*. Jan 2011;38(1):4-23. doi:10.1007/s10488-010-0327-7.
- Abou-Setta AM, Jeyaraman MM, Attia A, Al-Inany HG, Ferri M, Ansari MT, Garritty CM, Bond K, Norris SL. Methods for Developing Evidence Reviews in Short Periods of Time: A Scoping Review. *PLoS One*. 2016;11(12):e0165903. doi:10.1371/journal.pone.0165903.
- Blasi PR, Mettert KD, Coleman K, Lewis CC, Wagner E, Coghill MN, Dang T, Richards JE. Transitioning Patients from Outpatient Mental Health Services to Primary Care: A Rapid Literature Review. *Implement Res Pract*. 2021;2:1-13. doi:10.1177/26334895211041294.
- Chaudoir SR, Dugan AG, Barr CH. Measuring Factors Affecting Implementation of Health Innovations: A Systematic Review of Structural, Organizational, Provider, Patient, and Innovation Level Measures. *Implement Sci*. Feb 17 2013;8:22. doi:10.1186/1748-5908-8-22.
- Chloros GD, Prodromidis AD, Giannoudis PV. Has Anything Changed in Evidence-Based Medicine? *Injury*. Apr 20 2022;doi:10.1016/j.injury.2022.04.012.
- Claridge JA, Fabian TC. History and Development of Evidence-Based Medicine. *World J Surg*. May 2005;29(5):547-53. doi:10.1007/s00268-005-7910-1.
- Cook CR, Lyon AR, Locke J, Waltz T, Powell BJ. Adapting a Compilation of Implementation Strategies to Advance School-Based Implementation Research and Practice. *Prev Sci*. Aug 2019;20(6):914-935. doi:10.1007/s11121-019-01017-1.
- Cooper C, Booth A, Varley-Campbell J, Britten N, Garside R. Defining the Process to Literature Searching in Systematic Reviews: A Literature Review of Guidance and Supporting Studies. *BMC Med Res Methodol*. Aug 14 2018;18(1):85. doi:10.1186/s12874-018-0545-3.
- Cowie K, Rahmatullah A, Hardy N, Holub K, Kallmes K. Web-Based Software Tools for Systematic Literature Review in Medicine: Systematic Search and Feature Analysis. *JMIR Med Inform*. May 2 2022;10(5):e33219. doi:10.2196/33219.
- Damschroder LJ, Reardon CM, Opra Widerquist MA, Lowery J. Conceptualizing Outcomes for Use with the Consolidated Framework for Implementation Research (CFIR): The CFIR Outcomes Addendum. *Implement Sci*. Jan 22 2022a;17(1):7. doi:10.1186/s13012-021-01181-5.
- Damschroder LJ, Reardon CM, Widerquist MAO, Lowery J. The updated Consolidated Framework for Implementation Research Based on User Feedback. *Implement Sci*. Oct 29 2022b;17(1):75. doi:10.1186/s13012-022-01245-0.
- Djulbegovic B, Guyatt GH. Progress in Evidence-Based Medicine: A Quarter Century on. *Lancet (London, England)*. Jul 22 2017;390(10092):415-423. doi:10.1016/S0140-6736(16)31592-6.
- Dobbins M. Rapid Review Guidebook. 2017. National Collaborating Centre for Methods and Tools. Accessed September 1, 2022. <https://www.nccmt.ca/tools/rapid-review-guidebook>.

- Farrah K, Young K, Tunis MC, Zhao L. Risk of Bias Tools in Systematic Reviews of Health Interventions: An Analysis of PROSPERO-Registered Protocols. *Syst Rev*. Nov 15 2019;8(1):280. doi:10.1186/s13643-019-1172-8.
- Garritty C, Gartlehner G, Nussbaumer-Streit B, et al. Cochrane Rapid Reviews Methods Group Offers Evidence-Informed Guidance to Conduct Rapid Reviews. *J Clin Epidemiol*. Feb 2021;130:13-22. doi:10.1016/j.jclinepi.2020.10.007.
- Glasgow RE, Harden SM, Gaglio B, et al. RE-AIM Planning and Evaluation Framework: Adapting to New Science and Practice With a 20-Year Review. *Front Public Health*. 2019;7:64. doi:10.3389/fpubh.2019.00064.
- Greenhalgh T, Peacock R. Effectiveness and Efficiency of Search Methods in Systematic Reviews of Complex Evidence: Audit of Primary Sources. *BMJ*. Nov 5 2005;331(7524):1064-5. doi:10.1136/bmj.38636.593461.68.
- Harrison H, Griffin SJ, Kuhn I, Usher-Smith JA. Software Tools to Support Title and Abstract Screening for Systematic Reviews in Healthcare: An Evaluation. *BMC Med Res Methodol*. Jan 13 2020;20(1):7. doi:10.1186/s12874-020-0897-3.
- Hartling L, Guise JM, Kato E, Anderson J, Belinson S, Berliner E, Dryden DM, Featherstone R, Mitchell MD, Motu'apuaka M, Noorani H, Paynter R, Robinson KA, Schoelles K, Umscheid CA, Whitlock E. A Taxonomy of Rapid Reviews Links Report Types and Methods to Specific Decision-Making Contexts. *J Clin Epidemiol*. Dec 2015;68(12):1451-62 e3. doi:10.1016/j.jclinepi.2015.05.036.
- Heggie R, Boyd K, Wu O. How has Implementation Been Incorporated in Health Technology Assessments in the United Kingdom? A systematic rapid review. *Health Res Policy Syst*. 2021;19(1):118. Published 2021 Aug 18. doi:10.1186/s12961-021-00766-2.
- Henrikson NB, Blasi PR, Dorsey CN, Mettert KD, Nguyen MB, Walsh-Bailey C, Macuiba J, Gottlieb LM, Lewis CC. Psychometric and Pragmatic Properties of Social Risk Screening Tools: A Systematic Review. *Am J Prev Med*. Dec 2019;57(6 Suppl 1):S13-S24. doi:10.1016/j.amepre.2019.07.012.
- Hong QN, Pluye P, Fàbregues S, Bartlett G, Boardman F, Cargo M, Dagenais P, Gagnon M-P, Griffiths F, Nicolau B, O'Cathain A, Rousseau M, Vedel, I. Mixed Methods Appraisal Tool (MMAT), version 2018. Registration of Copyright (#1148552). Canadian Intellectual Property Office, Industry Canada. Accessed March 7, 2023. http://mixedmethodsappraisaltoolpublic.pbworks.com/w/file/attach/127916259/MMAT_2018_criteria-manual_2018-08-01_ENG.pdf
- Khangura S, Konnyu K, Cushman R, Grimshaw J, Moher D. Evidence Summaries: The Evolution of a Rapid Review Approach. *Syst Rev*. Feb 10 2012;1:10. doi:10.1186/2046-4053-1-10.
- King VJ, Stevens A, Nussbaumer-Streit B, Kamel C, Garritty C. Paper 2: Performing Rapid Reviews. *Syst Rev*. Jul 30 2022;11(1):151. doi:10.1186/s13643-022-02011-5.
- Kohl C, McIntosh EJ, Unger S, Haddaway N, Kecke S, Schiemann J, Wilhelm R. Online Tools Supporting the Conduct and Reporting of Systematic Reviews and Systematic Maps: A Case Study on CADIMA and Review of Existing Tools. *Environmental Evidence*. 2018/02/01 2018;7(1):8. doi:10.1186/s13750-018-0115-5.

- Lewis CC, Klasnja P, Powell BJ, Lyon AR, Tuzzio L, Jones S, Walsh-Bailey C, Weiner B. From Classification to Causality: Advancing Understanding of Mechanisms of Change in Implementation Science. *Front Public Health*. 2018;6:136. doi:10.3389/fpubh.2018.00136.
- Lewis CC, Boyd M, Puspitasari A, Navarro E, Howard J, Kassab H, Hoffman M, Scott K, Lyon A, Douglas S, Simon G, Kroenke K. Implementing Measurement-Based Care in Behavioral Health: A Review. *JAMA Psychiatry*. Mar 1 2019;76(3):324-335. doi:10.1001/jamapsychiatry.2018.3329.
- Lewis CC, Boyd MR, Walsh-Bailey C, Lyon AR, Beidas R, Mittman B, Aarons GA, Weiner BJ, Chambers DA. A Systematic Review of Empirical Studies Examining Mechanisms of Implementation in Health. *Implement Sci*. Apr 16 2020;15(1):21. doi:10.1186/s13012-020-00983-3.
- Medlinskiene K, Tomlinson J, Marques I, Richardson S, Stirling K, Petty D. Barriers and Facilitators to the Uptake of New Medicines into Clinical Practice: A Systematic Review. *BMC Health Serv Res*. Nov 5 2021;21(1):1198. doi:10.1186/s12913-021-07196-4.
- Meyers DC, Durlak JA, Wandersman A. The Quality Implementation Framework: A Synthesis of Critical Steps in the Implementation Process. *Am J Community Psychol*. Dec 2012;50(3-4):462-80. doi:10.1007/s10464-012-9522-x.
- Moher D, Liberati A, Tetzlaff J, Altman DG, Group P. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med*. Jul 21 2009;6(7):e1000097. doi:10.1371/journal.pmed.1000097.
- Neta G, Clyne M, Chambers DA. Dissemination and Implementation Research at the National Cancer Institute: A Review of Funded Studies (2006-2019) and Opportunities to Advance the Field. *Cancer Epidemiol Biomarkers Prev*. Feb 2021;30(2):260-267. doi:10.1158/1055-9965.EPI-20-0795.
- Nilsen P. Making Sense of Implementation Theories, Models and Frameworks. *Implement Sci*. Apr 21 2015;10:53. doi:10.1186/s13012-015-0242-0.
- Owusu-Addo E, Ofori-Asenso R, Batchelor F, Mahtani K, Brijnath B. Effective Implementation Approaches for Healthy Ageing Interventions for Older People: A Rapid Review. *Arch Gerontol Geriatr*. Jan-Feb 2021;92:104263. doi:10.1016/j.archger.2020.104263.
- Page MJ, McKenzie JE, Higgins JPT. Tools for Assessing Risk of Reporting Biases in Studies and Syntheses of Studies: A Systematic review. *BMJ open*. Mar 14 2018;8(3):e019703. doi:10.1136/bmjopen-2017-01.
- Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, Shamseer L, Tetzlaff JM, Akl EA, Brennan SE, Chou R, Glanville J, Grimshaw JM, Hróbjartsson A, Lalu MM, Li T, Loder EW, Mayo-Wilson E, McDonald S, McGuinness LA, Stewart LA, Thomas J, Tricco AC, Welch VA, Whiting P, Moher D. The PRISMA 2020 statement: An Updated Guideline for Reporting Systematic Reviews. *BMJ*. Mar 29 2021;372:n71. doi:10.1136/bmj.n71.
- Pfadenhauer LM, Gerhardus A, Mozygemba K, Lysdahl KB, Booth A, Hofmann B, Wahlster P, Polus S, Burns J, Brereton L, Rehfues E. Making Sense of Complexity in Context and Implementation: The Context and Implementation of Complex Interventions (CICI) Framework. *Implement Sci*. Feb 15 2017;12(1):21. doi:10.1186/s13012-017-0552-5.

- Pinnock H, Barwick M, Carpenter CR, Eldridge S, Grandes G, Griffiths CJ, Rycroft-Malone J, Meissner P, Murray E, Patel A, Sheikh A, Taylor SJ; StaRI Group. Standards for Reporting Implementation Studies (StaRI) Statement. *BMJ*. Mar 6 2017a;356:i6795. doi:10.1136/bmj.i6795.
- Pinnock H, Barwick M, Carpenter CR, Eldridge S, Grandes G, Griffiths CJ, Rycroft-Malone J, Meissner P, Murray E, Patel A, Sheikh A, Taylor SJ; StaRI Group. Standards for Reporting Implementation Studies (StaRI): explanation and elaboration document. *BMJ open*. Apr 3 2017b;7(4):e013318. doi:10.1136/bmjopen-2016-013318.
- Polisena J, Garritty C, Kamel C, Stevens A, Abou-Setta AM. Rapid Review Programs to Support Health Care and Policy Decision Making: A Descriptive Analysis of Processes and Methods. *Syst Rev*. Mar 14 2015;4:26. doi:10.1186/s13643-015-0022-6.
- Powell BJ, Waltz TJ, Chinman MJ, Damschroder LJ, Smith JL, Matthieu MM, Proctor EK, Kirchner JE. A Refined Compilation of Implementation Strategies: Results from the Expert Recommendations for Implementing Change (ERIC) Project. *Implementation Science* : IS. Feb 12 2015;10:21. doi:10.1186/s13012-015-0209-1.
- Powell BJ, Patel SV, Haley AD, Haines ER, Knocke KE, Chandler S, Katz CC, Seifert HP, Ake G 3rd, Amaya-Jackson L, Aarons GA. Determinants of Implementing Evidence-Based Trauma-Focused Interventions for Children and Youth: A Systematic Review. *Adm Policy Ment Health*. Sep 2020;47(5):705-719. doi:10.1007/s10488-019-01003-3.
- Proctor EK, Landsverk J, Aarons G, Chambers D, Glisson C, Mittman B. Implementation Research in Mental Health Services: An Emerging Science with Conceptual, Methodological, and Training Challenges. *Adm Policy Ment Health*. Jan 2009;36(1):24-34. doi:10.1007/s10488-008-0197-4.
- Proctor E, Silmere H, Raghavan R, Hovmand P, Aarons G, Bunger A, Griffey R, Hensley M. Outcomes for Implementation Research: Conceptual Distinctions, Measurement Challenges, and Research Agenda. *Adm Policy Ment Health*. Mar 2011;38(2):65-76. doi:10.1007/s10488-010-0319-7.
- Proctor EK, Powell BJ, Baumann AA, Hamilton AM, Santens RL. Writing Implementation Research Grant Proposals: Ten Key Ingredients. *Implement Sci*. Oct 12 2012;7:96. doi:10.1186/1748-5908-7-96.
- PROSPERO: International Prospective Register of Systematic Reviews. Centre for Reviews and Dissemination, University of York. 2018. Accessed May 9, 2022. <https://www.crd.york.ac.uk/prospero/>.
- Sackett DL, Rosenberg WM, Gray JA, Haynes RB, Richardson WS. Evidence Based Medicine: What It Is and What It Isn't. *BMJ*. Jan 13 1996;312(7023):71-2. doi:10.1136/bmj.312.7023.71.
- Slade SC, Philip K, Morris ME. Frameworks for Embedding a Research Culture in Allied Health Practice: A Rapid Review. *Health Res Policy Syst*. 2018;16(1):29. Published 2018 Mar 21. doi:10.1186/s12961-018-0304-2.
- Slaughter SE, Hill JN, Snelgrove-Clarke E. What is the Extent and Quality of Documentation and Reporting of Fidelity to Implementation Strategies: A Scoping Review. *Implement Sci*. Sep 7 2015;10:129. doi:10.1186/s13012-015-0320-3.
- Sterne JA, Hernan MA, Reeves BC, et al. ROBINS-I: A Tool for Assessing Risk of Bias in Non-Randomised Studies of Interventions. *BMJ*. Oct 12 2016;355:i4919. doi:10.1136/bmj.i4919.

Sterne JAC, Savovic J, Page MJ, et al. RoB 2: A Revised Tool for Assessing Risk of Bias in Randomised Trials. *BMJ*. Aug 28 2019;366:l4898. doi:10.1136/bmj.l4898.

Striffler L, Cardoso R, McGowan J, Cogo E, Nincic V, Khan PA, Scott A, Ghassemi M, MacDonald H, Lai Y, Treister V, Tricco AC, Straus SE. Scoping Review Identifies Significant Number of Knowledge Translation Theories, Models, and Frameworks with Limited Use. *J Clin Epidemiol*. Aug 2018;100:92-102. doi:10.1016/j.jclinepi.2018.04.008.

Tabak RG, Khoong EC, Chambers DA, Brownson RC. Bridging Research and Practice: Models for Dissemination and Implementation Research. *Am J Prev Med*. Sep 2012;43(3):337-50. doi:10.1016/j.amepre.2012.05.024.

Teper MH, Godard-Sebillotte C, Vedel I. Achieving the Goals of Dementia Plans: A Review of Evidence-Informed Implementation Strategies. *World Health Popul*. 2019;18(1):37-46. doi:10.12927/whp.2019.26060.

Tricco AC, Langlois EV, Straus SE, Alliance for Health P, Systems R, World Health O. Rapid reviews to *Strengthen Health Policy and Systems: A Practical Guide*. World Health Organization; 2017.

Weiner BJ, Mettert KD, Dorsey CN, Nolen EA, Stanick C, Powell BJ, Lewis CC. Measuring Readiness for Implementation: A Systematic Review of Measures' Psychometric and Pragmatic Properties. *Implementation Research and Practice*. 2020;1:2633489520933896. doi:10.1177/2633489520933896.

Wells GA, Shea B, O'Connell D, Peterson J, Welch V, Losos M, Tugwell P. The Newcastle-Ottawa Scale (NOS) for Assessing the Quality of Nonrandomised Studies in Meta-analyses. The Ottawa Hospital Research Institute. 2021. Accessed January 24, 2023. https://www.ohri.ca/programs/clinical_epidemiology/oxford.asp

Waltz TJ, Powell BJ, Matthieu MM Damschroder LJ, Chinman MJ, Smith JL, Proctor EK, Kirchner JE. Use of Concept Mapping to Characterize Relationships Among Implementation Strategies and Assess Their Feasibility and Importance: Results from the Expert Recommendations for Implementing Change (ERIC) Study. *Implement Sci*. Aug 7 2015;10:109. doi:10.1186/s13012-015-0295-0.

Wolfenden L, Carruthers J, Wyse R, Yoong S. Translation of Tobacco Control Programs in Schools: Findings from a Rapid Review of Systematic Reviews of Implementation and Dissemination Interventions. *Health Promot J Austr*. 2014;25(2):136-138. doi:10.1071/HE13089.

APPENDICES

Appendix A. Work Plan Template

Note: If you intend to publish your review in a peer-reviewed journal, consider using the PRISMA reporting items (Moher et al., 2009) to guide your work plan development and documentation. You may also choose to register your review's work plan (also called a protocol) using PROSPERO (PROSPERO, 2018). Regardless of the format you use, your work plan should outline: (a) the purpose of your review; (b) your research questions; (c) and your inclusion and exclusion criteria (Garritty et al., 2021; Tricco et al., 2017).

Title

[Consider filling out other sections of the workplan before deciding on a title]

Team members

[List team members and roles on the review, with full-time equivalents (FTE) if helpful.]

Background

[Add 1-2 paragraphs summarizing the background and significance of the topic. Include assessment of previous reviews or note evidence gaps on the topic.]

Purpose of review

[Think about why this review is needed, and what you hope to accomplish (e.g., XX will use this review to ...). Will you use the findings to inform the development of your intervention? Do you intend to publish in a peer-reviewed journal?]

Audience

[Who will be the end-users of this review? How will they use it?]

Type of evidence product

[State if the product is an evidence scan, evidence brief, systematic review, gap analysis, etc.]

Research questions

[List one or more research question(s) that will help achieve your purpose.]

Analytic framework/conceptual model

[Optional: Consider creating a graphic representation of the topic of interest and how it relates to your outcomes of interest (e.g., improved health, successful implementation).]

Inclusion and exclusion criteria

[Complete this table, editing and customizing as needed. Some categories may not be relevant to your review. Provide textual description of rationale.]

	Include	Prioritize / Emphasize	Exclude
Population			
Setting			
Condition			
Intervention			
Phase of intervention or implementation			
Comparison			
Outcomes of review*			
Timing (years of search)			
Study design			
Population			

*These should be outcomes that will help answer your research question (e.g., implementation determinants, implementation strategies).

Search strategy

[If using multiple strategies (e.g., hand searching, gray literature searching), detail those here. List databases to be searched. Include search terms in appendix if appropriate, including dates of search and databases.]

Article selection

[Describe method for selecting articles from search results (e.g., abstract review, full text review) and number of reviewers for each step.]

Quality assessment

[Describe if formal or any quality assessment will be used.]

Data abstraction plan

[Detail what tables and data elements will be abstracted.]

Evidence synthesis plan

[Describe how data will be synthesized and reported (e.g., narrative synthesis, meta analysis, list of barriers). Identify evidence gaps. Describe existing implementation science frameworks, models, taxonomies, or definitions you will use to guide your synthesis.]

Limitations of approach

[Describe here.]

Timeline for review completion

[Provide table or list of review milestones and expected completion. Note constraints if helpful (e.g., funding end date).]

Resources needed

[Examples: library access, consultation with a librarian, technology or software for abstract review, full-text review.]

Appendix

Exemplar papers

[List 2-3 exemplar papers with brief descriptions of what you like about each. These should be papers that directly address the research question.]

Definitions

[As needed]

Search items

[As needed]

Appendix B. Example Work Plan

A review of barriers and facilitators to implementing measurement-based care in underresourced community mental health settings

Background

For youth receiving care in community mental health centers (CMHCs), comorbidities are the rule rather than the exception. Using measurement-based care (MBC) as the foundation of treatment for youth with comorbid problems significantly improves the therapeutic impact as it can help define the treatment focus. MBC is the systematic, routine evaluation of symptoms to inform care decisions. Especially in youth, MBC increases the rate of symptom improvement, detects clients who would otherwise deteriorate, and alerts clinicians to non-responders. Previous efforts to support MBC implementation have yielded suboptimal outcomes because CMHC leaders are challenged to identify and prioritize barriers and select strategies to overcome them. New methods are needed for identifying and prioritizing determinants, and matching strategies to determinants, to optimize MBC implementation and treatment quality to improve youth mental health outcomes in community settings.

This project's goals are to increase impact of MBC and align methods with preferences of practice partners. IMPACT methods first focus on rapid evidence reviews to uncover empirical data regarding MBC determinants. These activities will result in a list of determinants that will be rated by partners from each clinic for criticality, chronicity, and ubiquity to generate priority scores. Subsequently, we will use facilitated group processes to develop causal pathway diagrams to match strategies to the top three determinants and clarify their preconditions, moderators, mechanisms, and proximal and outcomes at each of the six clinics to yield a plan to optimize MBC implementation. Optimizing MBC implementation in CMHCs could transform youth mental health care by ensuring the most pressing symptoms are targeted early in treatment.

Purpose of review

This review will identify barriers (determinants) to implementing measurement-based care in under-resourced community mental health settings; these determinants will guide rapid ethnography and user-centered design probes for an ALACRITY center project (IMPACT project 1) that seeks to implement measurement-based care in under-resourced community mental health settings.

Research question

What are the known barriers to implementing measurement-based care in under-resourced youth behavioral or mental health care settings?

Type of evidence product

Brief, focused extension of a previous narrative review (Lewis et al., 2019)

Inclusion and exclusion criteria (PICOTS)

	Include	Prioritize / Emphasize	Emphasize
Population	Stakeholders who have experienced an implementation of MBC, including: <ul style="list-style-type: none"> o Youth clients/patients <19 years old o Parents o Clinic staff o Clinicians o Purveyors o Administrators 	Adult patients	Latinx youth
Setting	<ul style="list-style-type: none"> o Mental or behavioral health care clinics o Community mental health centers o In the US 	<ul style="list-style-type: none"> o Academic medical centers o Primarily medical facilities (e.g., primary care, hospitals) 	Underresourced
Intervention	Measurement-based care in behavioral or mental health	<ul style="list-style-type: none"> o Parent-mediated services o Teacher-delivered interventions o Nurse-delivered interventions 	
Comparison	Any	Any	
Outcomes (of the review*)	Implementation determinants (barriers/facilitators)		
Timing (years of search)	2018-present		
Study design	<ul style="list-style-type: none"> o Quantitative OR o Qualitative OR o Mixed-methods: o That study and report on actionable barriers and facilitators in the context of an implementation or clinical study 	Systematic reviews and meta-analyses	<ul style="list-style-type: none"> o Hybrid Implementation-effectiveness o Implementation studies
Other reviews	Lewis et al. (2019) sample		

*These should be outcomes that will help answer your research question (e.g., implementation determinants, implementation strategies).

Search strategy

We will begin with expert recommendations of key articles and focused searches. We will use key terms (e.g., measurement-based care, implementation, determinant) to search PsycINFO and Pubmed. Review will be iterative, documenting the yield, sensitivity, and specificity of each search. The systematic search will be supplemented by targeted searches of relevant journals.

Search terms

Search component	Search terms	Source (if applicable)
barrier	implement* OR integrat* OR barrier OR facilitator OR “lessons learned” OR disseminat* OR fidelity OR adhere OR adherence OR diffus* OR adopt* OR sustain* OR “knowledge translation” OR translat*	Powell et al. (2020)
AND		
setting	Community mental health OR Mental health center OR Mental health OR Behavioral health	
AND		
population	Youth Or Child*Or Adolescent	
AND		
Intervention/innovation	Measurement-based care OR Continuous assessmentOR Client feedback OR Monitoring treatment progress OR Feedback-informed treatment OR Patient-focused research OR patient-reported outcome measures OR Progress monitoring OR Routine outcome monitoring OR MBC	Lewis et al. 2019
AND		
years	2018-2022	

*These should be outcomes that will help answer your research question (e.g., implementation determinants, implementation strategies).

Article selection

Screening will use the systematic review software program CADIMA. One person will screen titles and abstracts. Two team members will independently do full-text screening; discrepancies will be resolved by consensus.

Data abstraction plan

The team will abstract the following data elements from the included papers:

- Authors
- Publication year
- Study country or countries
- Study design
- In what context did the study take place?
- Sample size of organizations
- Sample size of therapists
- Sample size of clients
- Description of the patient population
- Term used to describe measurement-based care (MBC)
- Stated conceptualization of MBC
- Measures used
- Barrier name
- Barrier definition
- How barrier was assessed
- Qualitative description of barriers
- Outcome name
- Outcome definition
- How was outcome conceptualized?
- How was outcome measured?
- Other notes

Evidence synthesis plan

The main deliverable is a literature-informed list of determinants (i.e., barriers or facilitators) in table form. The team will update determinants found in the Lewis et al. 2018 review with a focus on children/adolescents, health equity and under-resourced settings. The team will also include additional case-studies to describe concrete manifestations should they appear. The team is interested in identifying actionable determinants and assigning relative weights to each determinant.

The team will thus add surfaced barriers to the Lewis et al. review (2018) with clear delineation between which barriers were surfaced from this review vs. the Lewis review. The team will qualitatively summarize the evidence by relevance to determinant prioritization by timing (most relevant implementation phase; Exploration; Preparation; Implementation; Sustainment; Aarons et al., 2011); feasibility (malleability and resource requirements), causal pathway components; and criticality, chronicity, and ubiquity. This work will thus produce a list of determinants organized by level of analysis and implementation phase.

*The team has a stated health equity focus, so should barriers specific to underrepresented settings/underrepresented minoritized youth be identified, they will be noted.

Quality assessment

Given that this is not a systematic review, study quality will not be formally assessed. If “fatal flaws” are identified within a study (e.g., temporal sequencing of measurement), these will be noted and added and used to specify inclusion/exclusion criteria iteratively.

Limitations of approach

- Not double reviewing abstracts
- Single search engine
- No formal quality assessment
- Single person doing abstraction

Timeline for review completion

- April 1: Search completed
- April 15: Final sample identified
- May 1: Data synthesis completed
- May 31: Finalization of list

Appendix

Exemplar papers

Top tier exemplars:

- [Purbeck](#) – implementation of trauma-informed MBC for children across multiple contexts – this fits the population (youth), intervention (MBC), and context (CMH)
- [Childs and Connors](#) – Implementation of MBC in intensive outpatient for youth – this one fits population and intervention, but is slightly mismatched by context in that intensive outpatient looks quite different than traditional weekly outpatient therapy

On the fence exemplars:

- [Bickman](#) – Implementation of a measurement-feedback system (MFS) – This looks at the implementation of relevant technology (MFS), but MFS does not necessarily = measurement-based care. This fits the population and context, but not precisely the intervention
- [Cuperfain](#) – Implementation of MBC for youth with psychosis – this one fits the broader population and the intervention, but the subpop (youth experiencing psychosis) and context (specialty psychiatric clinic) are questionable

Appendix C. Example Cheat Sheet

This is an example of a “cheat sheet” used by screeners during the article selection phase for the systematic review by Henrikson et al. (2019)

Research Question: What are the psychometric and pragmatic properties of multidomain tools used to screen adults for social determinants of health (SDOH) in primary care settings?

Inclusion/Exclusion Criteria

	Include	Exclude
Population	Interviewee age 18+	
Setting	Designed for or administered in clinical (primary care) setting U.S.-based	Non-clinical settings Non-U.S.-based
Screening / assessment tools	Multiple (2 or more) domains assessed Main purpose of tool is to assess SDOH Focus should be on measuring SDOH constructs, establishing SDOH measures/tools, and assessing how measures/tools are performing.	Single domain tools Main purpose of tool is something other than SDOH <ul style="list-style-type: none"> • Not interested in studies that look at SDOH factors as predictors (such as association studies) • Not interested in studies about the SDOH constructs themselves
Social determinants of health domains	<ul style="list-style-type: none"> • Economic Stability • Education • Social & Community Context • Health & Clinical Care • Neighborhood & Physical Environment • Food 	<ul style="list-style-type: none"> • Health behaviors • Behavioral health
Study design		Case reports and case series; narrative reviews, commentaries, editorials, theses, qualitative studies, ecologic studies, and decision analyses; studies that were not peer-reviewed (e.g., conference abstracts)
Timing	2000 or later	pre-2000
Language	English	

SDOH, social determinants of health

Full Text Review Code List

E Codes (Reasons for exclusion)	X Codes
E1. Not relevant	X1. Background about SDOH
E2. Not English	X2. Background about screening for SDOH
E3. Not original research	X3. Guidelines, policy statements, recommendations
E4. Publication DATE	X4. Discussion section
E5. Ineligible SETTING	X5. Future research
E6. Ineligible POPULATION	X6. Systematic reviews / meta-analysis
E7. Ineligible COUNTRY	X7. Check cited references
E8. Ineligible SCREENING	X8. Check for papers citing this one

E Codes (Reasons for exclusion)	X Codes
E9. Ineligible OUTCOMES	X9. Ongoing study/protocol only
E10. Ineligible STUDY DESIGN	X10. Otherwise relevant
E11. Irretrievable	
E12. Poor QUALITY (not used until quality assessment)	

Appendix D. Example Data Abstraction Table

Note: This is a snippet of a data abstraction table from a rapid systematic review. Your data abstraction table may have more data fields and different data fields tailored to the information you need for your project. It may be easiest to design your data abstraction table in Excel, with a row for each individual study and data abstraction elements (e.g., Author/Year, Study design, Location) as the column headers.

Research question: What transition practices and implementation strategies are used to transition stable patients from outpatient mental health services to primary care?

Author, Year	Smith, 2019	Röhricht, 2017
Study design	Quality improvement	Cross-sectional
Location	McAllen, Texas	East London, England
Initial setting (mental health)	VA primary care-mental health integration clinics	Secondary mental health services (outpatient specialty MH)
Transition setting (primary care)	VA primary care clinics	“Enhanced” primary care NHS clinics
Population	Veterans with mental health conditions who met certain criteria for stability	Adults with severe MH conditions
N of participants	424 patients; 23 staff	2818 patients; unknown staff
Provider type(s) involved	Psychiatrists, psychologists, social workers, marriage and family therapists, nurses, physicians, pharmacists	PCPs, psychiatrists, psychiatric nurses, psychologists, social workers
Description of transition practices and/or implementation strategies	Develop systems to identify patients eligible for transition <ul style="list-style-type: none"> Engage patient in shared decision-making about transition Develop formal checklist for transition Develop templated transition progress note to document all MH to PC transitions Provide patient with at least 6 months of refills on psychiatric medications Provide MH and PC staff with educational materials about discharge and transition process 	Establish recovery care plan based on patient’s recovery goals <ul style="list-style-type: none"> Hold regular multidisciplinary team meetings between PC and consultant psychiatrists Provide trainings for PCPs on managing MH issues in primary care Create teams of “primary care liaison nurses” to support transition Create group of peer support workers who can support patients during transition

MH, mental health; PC, primary care; PCP, primary care provider; VA, Veterans Affairs; NHS National Health Service

[Back to Table of Contents](#)

ACKNOWLEDGMENTS

This work was supported by:

- The National Institute of Mental Health (NIMH) through award number [P50MH126219](#): Optimizing Evidence-Based Practice Implementation for Clinical Impact: the IMPACT Center
- The National Cancer Institute (NCI) through award number [P50CA244432](#): Optimizing Implementation in Cancer Control: OPTICC

Contributors: Cara Lewis, Ruben Martinez, Rosemary Meza, Lorella Palazzo, Michael Pullmann

Suggested citation: Henrikson NB, Blasi PR. (2023) Rapid Evidence Synthesis: A toolkit for finding and summarizing evidence on short timelines.

Find other toolkits at impscimethods.org.



[Back to Table of Contents](#)