

**NYU**SCHOOL OF GLOBAL
PUBLIC HEALTH

Implementing Sustainable Evidence-based Interventions through Engagement (ISEE) Lab

ENVISSION Toolkit Guide

Using each tool from start to finish

Evidence Navigation and Synthesis for Validating Interventions through Systematic, and Scoping Reviews for ImplementatiON

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What this guide is for

The ENVISSION toolkit supports implementation research (IR) evidence synthesis — systematic, and scoping reviews — from framing the question through rating the certainty of the evidence. This guide explains what each tool does, when to use it, and how the tools connect.

This is a guide, not a mandate. Use it in the way that fits how you conduct scholarly research. Every tool can be modified to suit your question and methods; if a section of a tool does not apply to your review, delete it.

Who this is for

- Researchers and students conducting an IR systematic, or scoping review.
- Librarians and information specialists supporting IR search strategy development.
- Practitioners and policymakers appraising implementation evidence for decision-making.
- Trainees learning to evaluate evidence-based research.

Worked example used throughout

Examples in this guide are drawn from a published sickle cell disease (SCD) systematic review. Where the method differs for scoping or umbrella reviews, that is noted.

Gyamfi J, Ojo T, Epou S, Diawara A, Dike L, Adenikinju D, Enechukwu S, Vieira D, Nnodu O, Ogedegbe G, Peprah E. Evidence-based interventions implemented in low- and middle-income countries for sickle cell disease management: a systematic review of randomized controlled trials. *PLoS One*. 2021;16(2):e0246700. <https://doi.org/10.1371/journal.pone.0246700>

All tools are hosted on the ENVISSION OSF project

<https://osf.io/7ge9y/>

1. The toolkit at a glance

Six tools, used at five stages of a review. Start here to identify which you need.

Table 1. ENVISSION tool inventory

Tool	Stage	What it does	Format	Access
ENVISSION Planning Checklist	1. Frame	Structures your question using IR-PICO and lays out the concept table from which the search strategy is built.	Editable document	OSF file
ENVISSION Search Hedges	2. Search	Pre-built, tested search blocks for low- and low-middle-income countries (L-LMICs) and for implementation research terms. Drop into your strategy rather than rebuilding.	Search strings	L-LMIC hedge IR terms hedge
ENVISSION Reporting Checklist	3. Plan and report	Your protocol and your manuscript blueprint. Sixteen fields modelled on PRISMA, ordered to follow IMRaD.	Editable checklist	OSF file
ENVISSION ASSESS 2.0	4. Appraise	Risk-of-bias and quality assessment for implementation outcomes across qualitative, quantitative, and mixed methods studies. Computer-based successor to the ASSESS spreadsheet.	Software tool	By request — email gph.isee@nyu.edu <i>Subject line: IR ASSESS 2.0 tool</i>
ENVISSION Certainty Checklist	5. Rate certainty	A worksheet for rating certainty of evidence per implementation outcome using GRADE, plus the methodological guidance that explains each judgment.	Worksheet and guidance document	Certainty worksheet Methodological guidance
ENVISSION Appraisal Guide	Training	A 13-question critical appraisal checklist adapted from CASP, for teaching trainees how to evaluate implementation evidence. Used internally rather than for published appraisal.	Editable checklist	OSF file

Two supporting resources

Evidence-based pyramid — a reference for locating study designs by level of evidence, used when deciding what your review will include. [OSF file](#)

ASSESS tool publication — the peer-reviewed development paper underlying ASSESS 2.0. [Ryan, Vieira et al. 2022](#)

2. The workflow from start to finish

Reviews rarely run in a straight line — you will return to the question and the search as the evidence takes shape. The sequence below is the order most reviews follow, and it shows where each tool is used.

Figure 1. ENVISSION workflow

Stage	What you do	ENVISSION tool	You are ready to move on when...
1	Choose your review type <i>Scoping, or systematic</i>	Section 3 of this guide	You can state in one sentence what kind of question you are answering.
2	Frame the question <i>PICO and implementation outcomes</i>	ENVISSION Planning Checklist	Your IR-PICO table is complete and you have selected which implementation outcomes you will report.
3	Build the search <i>Subject headings, keywords, hedges</i>	ENVISSION Planning Checklist concept table; ENVISSION Search Hedges	Your PubMed strategy runs and returns a plausible result set, and has been translated to your other databases.
4	Write and register the protocol	ENVISSION Reporting Checklist	All 16 fields are complete and the protocol is registered.
5	Screen and extract <i>Not an ENVISSION tool</i>	Use a reference manager (EndNote, or Zotero — free) and a review platform (Covidence, or Rayyan — free).	Your included set is final and data extraction is complete.
6	Appraise each study <i>Risk of bias or quality assessment</i>	ENVISSION ASSESS 2.0	Every included study has a completed appraisal, scored per outcome, with two reviewers reconciled.
7	Rate certainty of the evidence <i>Per outcome, not per study</i>	ENVISSION Certainty Checklist and its methodological guidance	Each critical and important outcome has a certainty rating with a written rationale for every domain.
8	Write the manuscript	ENVISSION Reporting Checklist — return to it	The manuscript follows IMRaD and every checklist field is reflected in the text.

The ENVISSION Appraisal Guide sits outside this sequence. It is a training resource for teaching appraisal skills, not a step in producing a review.

2.1 Already partway through?

Table 2. Where to start if your review is already underway

If you have already...	Go to
Decided nothing yet	Section 3 — choose your review type
Settled on your question but not the review type	Section 3, then Section 4 to formalize the question as IR-PICO
Written your implementation research focused PICO question	Section 5 — build the search strategy
Run your searches	Section 6 — write and register the protocol, if not already done
Finished screening and extraction	Section 7 — appraise with ASSESS 2.0
Completed your appraisals	Section 8 — rate certainty

3. Choose your review type

There are more than three types of literature review. The two below are the ones the ISEE Lab uses most. The right choice follows from what your question is asking, not from how much literature exists.

Table 3. Choosing among scoping, and systematic reviews

	Scoping review	Systematic review
Use it when	You are examining the landscape of a topic and identifying gaps in the literature.	You are investigating a measurable outcome of an intervention — for example, whether it was effective. Quantitative or descriptive/narrative.
Example question	What environmental factors are associated with the severity of sickle cell disease?	How effective are non-pharmacological interventions that improve pain management among sickle cell disease patients?
What you get	Themes and patterns across a body of work; a map of what exists and what does not.	An assessment of effect. Understanding statistical measures is essential — consider whether you need a biostatistician.
Appraisal expected	Quality assessment	Risk of bias assessment

Next step

Once the question and review type are settled, move to Section 4 to build the ENVISSION Planning Checklist modeled on PICO table, then Section 5 for the search strategy.

If you would rather begin by drafting the blueprint for the whole review, go to Section 6 (ENVISSION Reporting Checklist) first — it will bring you back to the ENVISSION Planning Checklist modeled on PICO question and search strategy.

4. Frame the question — ENVISSION Planning Checklist

PICO stands for population, intervention, comparison, and outcome. It has been modified for many healthcare specialties; the version below adds a fifth column for implementation research outcomes.

4.1 Worked example

The problem. Identifying evidence-based interventions (EBIs) implemented in low- and low-middle-income countries (L-LMICs) that address sickle cell disease (SCD) management, based on implementation research outcomes reported in published randomized controlled trials.

Table 4. IR-PICO worked example

Population / problem	Intervention	Comparison (if applicable)	Outcome (measurable or descriptive)	IR outcome variables
Sickle cell disease Low- and middle-income countries	Evidence-based interventions (RCTs)	n/a	Improved SCD management	☐ Acceptability ☐ Adoption ☐ Appropriateness ☐ Feasibility ☐ Fidelity ☐ Implementation cost ☐ Penetration ☐ Sustainability ☒ All implementation outcomes

The question. Among the population with **SCD** living in low- and **low-middle-income countries**, what **evidence-based interventions** are **effective** at improving **SCD management** based on **IR outcomes**?

Before you move on

- Highlight the key concepts in your question. These become the columns of your search concept table in Section 5.
- Decide which implementation outcomes you will report. Selecting all eight is a choice with consequences: each one is appraised and rated separately, so eight outcomes means eight certainty ratings.

Note on study design. The worked example assessed high-quality evidence by restricting to RCTs, which sit near the top of the evidence-based pyramid. Your review may include a wider range of designs — decide this now, because it determines which appraisal instruments you will need in Section 7. [View the evidence-based pyramid](#)

Get the tool

[ENVISSION Planning Checklist — clean copy for developing your IR-PICO question and search strategy](#)

5. Build the search strategy

A comprehensive search combines subject headings with keywords. Work with a librarian if you can. If you cannot, learn the search syntax for each database you will use.

5.1 Essentials

- **Subject headings.** [Medical Subject Headings \(MeSH\)](#) is the thesaurus used for PubMed. Each database has its own.
- **Field codes give precision.** PubMed uses [tiab] for title and abstract and [tw] for textword.
- **Translating across databases.** Sign up for a free [TERA](#) account (formerly SR-Accelerator) and use the Polyglot feature to translate a PubMed strategy into other database syntaxes.
- **Operators.** Use OR within a concept column and AND to combine concepts.

5.2 Build a concept table

One column per concept. List every term, synonym, and subject heading that belongs to that concept.

Table 5. Search concept table — worked example

Concept 1 — Condition	Concept 2 — Setting	Concept 3 — Intervention	Concept 4 — IR outcomes
SCD Sickle cell disease Sickle cell anemia Hemoglobin SC disease HbS disease Acute chest syndrome	The ISEE Lab has developed a tested search hedge for L-LMICs — use it rather than rebuilding this block. L-LMIC search hedge	Intervention* Programs* Health promotion Evidence-based Therap*	The ISEE Lab has developed hedges for individual and comprehensive IR terms. IR terms search hedges

5.3 Assemble the strategy

Combine the concept columns with AND:

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(sickle cell disease OR sickle cell anemia OR acute chest syndrome OR hemoglobin SC disease OR HbS disease) AND (insert L-LMIC hedge here) AND (evidence-based interventions OR evidence based practice OR health care outcomes assessment OR clinical trials OR evidence based medicine OR comparative effectiveness OR interventions OR clinical trial OR outcome studies OR outcome measures OR outcomes assessment OR randomized controlled trial OR clinical study OR clinical studies OR randomized OR randomised OR implementation OR implementation science OR randomized control trial) AND (insert IR terms hedge here)
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The full search strategy for the worked example appears in Supplement 1 of the Gyamfi 2021 article.

A common mistake

Do not search for the term “**effective**”. Effectiveness is established in your results through statistical measures — p-values, means, effect sizes — not by finding the word in a title or abstract. Searching for it will silently exclude relevant studies.

Get the tool

[ENVISSION Planning Checklist — clean copy for developing your IR-PICO question and search strategy](#)

6. Plan and report — ENVISSION Reporting Checklist

Modelled on PRISMA, this checklist is your blueprint for the whole review. It does double duty: completed at the start it is your protocol, and returned to at the end it structures your manuscript, because its fields follow the IMRaD order — introduction, methods, results, and discussion.

6.1 The sixteen fields

Complete these before you begin screening.

1. Title	9. Eligibility criteria
2. Authors	10. Information sources
3. Structured abstract	11. Search strategy
4. Rationale and aims	12. Selection of sources of evidence
5. IR-PICO question	13. Data assessment process
6. Objectives	14. Data items
7. Protocol registration	15. Critical appraisal of individual sources of evidence
8. IR strategy and outcomes	16. Synthesis of results

6.2 What to do with it

- Register the completed checklist as your protocol, then conduct the review according to it.
- Set up a bibliographic manager — EndNote, or Zotero which is free.
- Set up a review platform for screening and extraction — Covidence, or Rayyan which is free.
- Return to the checklist when you write up. Fields 1–6 map to your introduction, 7–16 to your methods, and the checklist keeps your reporting consistent with what you registered.

Get the tool

[ENVISSION Reporting Checklist](#)

7. Appraise the studies — ENVISSION ASSESS 2.0

Any literature review requires an assessment of the quality of its included articles. This is called risk of bias assessment in systematic reviews and quality assessment in scoping reviews; both do the same job — establishing whether the articles meet scholarly standards for scientific research.

ENVISSION ASSESS 2.0 is a computer-based tool that improves on the Excel spreadsheet reported in the ASSESS development paper. It appraises implementation outcomes specifically, and applies across qualitative, quantitative, and mixed methods studies.

7.1 Using it well

- **Edit it to fit your review.** If you are appraising only RCTs, delete the fields for other designs. The tool is meant to be tailored.
- **Appraise per outcome, not per study.** A single study can be well conducted for one implementation outcome and weak for another. Record a result for each outcome you are grading — this is what the certainty rating in Section 8 consumes.
- **Two appraisers.** Standard practice is for at least two reviewers to appraise independently and reconcile, with a third resolving persistent disagreement.
- **Keep the completed forms.** They are the evidence for your risk-of-bias judgments and are needed for Section 8 and for peer review.

Get the tool

ASSESS 2.0 is provided on request. Email gph.isee@nyu.edu with **IR ASSESS 2.0 tool** in the subject line.

Background: [Ryan, Vieira et al. 2022 — Development of the ASSESS tool](#)

8. Rate the certainty of the evidence — ENVISSION Certainty Checklist

Appraising individual studies (Section 7) tells you how well each was conducted. Rating certainty tells you how confident a reader should be in the body of evidence for a given outcome. These are different questions, and the second depends on the first.

What this tool is, and what it is not

The ENVISSION Certainty Checklist is a practical worksheet, not a new certainty framework. It does not create a separate GRADE assessment, and it does not modify how the GRADE Working Group develops Certainty of Evidence (CoE) or Summary of Findings (SoF) tables.

It adapts the standard CoE and SoF templates — specifically the Cochrane EPOC worksheets — so that users of the ENVISSION methodological guidance can apply that guidance alongside the existing GRADE framework rather than in place of it.

8.1 The two documents you need

Document	What it is for
Methodological guidance Open	Explains each GRADE domain as it applies to implementation outcomes, and how to make each judgment. Read this first, and keep it open while you complete the worksheet.
Certainty worksheet Open	Where you record the judgments — one worksheet per outcome — and assemble them into CoE and SoF tables.

8.2 How to use them together

- **One outcome at a time.** Certainty is rated per outcome, never for a study and never for the review as a whole. If you selected four implementation outcomes in Section 4, you will complete four worksheets.
- **Bring your ASSESS results forward.** The per-outcome appraisal results from Section 7 are the input to the risk-of-bias domain. Do not re-appraise from scratch.
- **Set your decision thresholds before you look at the estimates.** Certainty and precision are judged against a threshold that would change a decision. Deriving that threshold after seeing the results biases the rating.
- **Record a reason for every domain.** Including domains that raise no concern. A worksheet that explains only its downgrades cannot be checked or updated.
- **Report qualitative evidence alongside, not merged.** Where a qualitative synthesis contributes, assess it with GRADE-CERQual and present both assessments side by side.

Get the tools

[ENVISSION Certainty Checklist worksheet](#)

[ENVISSION methodological guidance for GRADE-IR](#)

Source templates: [Cochrane EPOC Certainty of Evidence and Summary of Findings worksheets](#)

Status

The Certainty Checklist is a draft under review. Feedback from users is welcome and should be sent to gph.isee@nyu.edu.

9. Learn to appraise — ENVISSION Appraisal Guide

For students and practitioners new to a field, judging the quality of research is difficult. Scholars in evidence-based practice have developed checklists to help. The Critical Appraisal Skills Programme (CASP) is internationally recognized for its tools covering a range of study designs.

The ENVISSION Appraisal Guide adapts that approach for implementation research. It asks 13 questions that walk a reader through deciding whether a study adequately addresses the evidence it claims to.

When to use this rather than ASSESS 2.0

Appraisal Guide — for learning. Use it when training students and early-career professionals to evaluate evidence-based research. It builds appraisal judgment.

ENVISSION ASSESS 2.0 — for reviews. Use it when producing risk-of-bias or quality assessments that will appear in a review or feed a certainty rating.

The two are not interchangeable, and the Appraisal Guide is not a substitute for a formal appraisal instrument in a published review.

Get the tool

[ENVISSION IR Critical Appraisal Checklist](#)

Background: [Critical Appraisal Skills Programme \(CASP\)](#)

10. Frequently asked questions

Do I have to use every tool?	No. Use what fits your review. A scoping review may not need a certainty rating; a review of only RCTs will use a small part of ENVISSION ASSESS 2.0. Every tool is editable.
Can I edit the tools?	Yes, and you are expected to. Delete fields that do not apply and add any your question requires. Note substantive modifications in your protocol so they are transparent to readers.
Which implementation research outcomes should I choose?	Those that matter to the decision your review informs, not those with the most available data. Each outcome you select is appraised and rated separately, so choose deliberately.
What is the difference between risk of bias and quality assessment?	The terms come from different review traditions — risk of bias in systematic reviews, quality assessment in scoping reviews — but both serve the same purpose. Use the term your review type expects.
What is the difference between ASSESS 2.0 and the Certainty Checklist?	ASSESS 2.0 appraises individual studies. The Certainty Checklist rates the body of evidence for one outcome, and takes the ASSESS results as one of its inputs. You need both, in that order.
Do I need a librarian?	It is strongly recommended for search strategy development. If you cannot work with one, learn the syntax for each database and use the ENVISSION hedges rather than building those blocks yourself.
Who do I contact?	gph.isee@nyu.edu for tool access, questions, and feedback.

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