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ORIGINAL RESEARCH

An international modified Delphi process supported updating the web-based "right review" tool

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Abstract

Objectives: The proliferation of evidence synthesis methods makes it challenging for reviewers to select the ''right'' method. This study aimed to update the Right Review tool (a web-based decision support tool that guides users through a series of questions for recommending evidence synthesis methods) and establish a common set of questions for the synthesis of both quantitative and qualitative studies (https://rightreview.knowledgetranslation.net/).

Study Design and Setting: A 2-round modified international electronic modified Delphi was conducted (2022) with researchers, health-care providers, patients, and policy makers. Panel members rated the importance/clarity of the Right Review tool's guiding questions, evidence synthesis type definitions and tool output. High agreement was defined as at least 70% agreement. Any items not reaching high agreement after round 2 were discussed by the international Project Steering Group.

Results: Twenty-four experts from 9 countries completed round 1, with 12 completing round 2. Of the 46 items presented in round 1, 21 reached high agreement. Twenty-seven items were presented in round 2, with 8 reaching high agreement. The Project Steering Group discussed items not reaching high agreement, including 8 guiding questions, 9 review definitions (predominantly related to qualitative synthesis), and 2 output items. Three items were removed entirely and the remaining 16 revised and edited and/or combined with existing items. The final tool comprises 42 items; 9 guiding questions, 25 evidence synthesis definitions and approaches, and 8 tool outputs.

Conclusion: The freely accessible Right Review tool supports choosing an appropriate review method. The design and clarity of this tool was enhanced by harnessing the Delphi technique to shape ongoing development. The updated tool is expected to be available in Quarter 1, 2025. © 2024 The Author(s). Published by Elsevier Inc. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).

Keywords: Evidence synthesis; Web-based decision tool; Qualitative evidence synthesis; Systematic reviews; Research methods; Delphi

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What is new?

Key findings

- The updated *Right Review* tool comprises 42 items; nine guiding questions for qualitative and quantitative reviews, 25 evidence synthesis definitions and approaches, and 8 tool outputs.

What this adds to what was known?

- The *Right Review* tool was developed to assist those conducting evidence syntheses, particularly less experienced researchers, in identifying appropriate evidence synthesis methods. The tool was initially developed as a pilot project for quantitative reviews but was then expanded to separately include qualitative evidence synthesis.
- The updated *Right Review* tool has integrated the quantitative and qualitative branches into a single set of guiding questions, eliminating the need for the user to preselect a quantitative or qualitative evidence synthesis from the outset.

What is the implication, what should change now?

- The updated tool is expected to be available in Quarter 1, 2025.

1. Introduction

Evidence synthesis uses formal explicit rigorous methods to bring together the findings of studies already completed, and to integrate the totality of what is known from that pre-existing research [1]. Robust and trustworthy evidence syntheses are increasingly viewed as critical to inform decision making in policy and practice [2,3].

The field of evidence synthesis has been described as having a ''midlife crisis'' as it has begun the transition to maturity [4]. Conventionally, evidence synthesis comprised of systematic reviews focused on the effectiveness of interventions. Over the last few decades, there has been substantial growth in the different types of evidence synthesis used to support decision making with a recent catalog of approaches by Sutton et al. identifying 48 distinct review types categorized into 7 families [5]. The family of systematic reviews itself now numbers multiple approaches, including reviews of effectiveness, prevalence and incidence, etiology and risk, test accuracy, and more [6]. Simultaneously, evidence synthesis methodology has evolved to address questions which are broad and complex and do not fit within the conventional systematic review model which typically focuses on questions of effectiveness. This expansion now includes scoping reviews, mixed methods reviews, realist reviews, network meta-analysis, metanarrative reviews and metasynthesis.

While this growth reflects the recognition of the utility of evidence synthesis in supporting decision making beyond questions of effectiveness, it presents several challenges. The growing number of evidence synthesis types allows researchers to conduct syntheses that meet knowledge user needs. However, choosing the ''right'' method is complicated by a lack of consistency in the terminology and methodology available for some review types, particularly for less experienced researchers or those with limited exposure to different evidence synthesis types [7,8]. Choosing an appropriate review type will ensure the correct methodological steps and appropriate standards for reporting are followed. To assist with this challenge, a web-based decision support tool (Right Review) that guides reviewers through a series of simple questions when selecting quantitative reviews and qualitative evidence synthesis methods was developed following a rigorous process [9]. Through a series of guiding questions, the tool aims to recommend the best type of evidence synthesis required to meet the research goals. Conduct/reporting guidance and open-access examples are provided for each recommended method. Initial evaluation of the tool demonstrated it has supported thousands of users worldwide to identify appropriate review methods [9].

Currently, the tool separates quantitative reviews and qualitative evidence synthesis. Five questions are asked to select from among 26 methods for quantitative reviews and 10 questions to select methods from among 15 qualitative evidence syntheses [9]. However, requiring the user to know whether they wish to do a quantitative or qualitative review from the outset may be problematic, particularly for less experienced researchers. In the context of a rapidly evolving field, such tools must be updated regularly. The purpose of this international electronic modified Delphi (e-Delphi) exercise was to reach high agreement on integrating the quantitative and qualitative branches of this tool, in particular, integrating the 5 quantitative and 10 qualitative guiding questions within a single set of guiding questions. A secondary objective was to explore participant views on the use of structured evidence synthesis support tools.

2. Methodology

2.1. Design

An international e-Delphi was employed. The Delphi process was selected as it is a structured group facilitation technique, widely used in health-care research to obtain high agreement among multidisciplinary groups of experts, particularly in complex area with inconsistencies such as evidence synthesis [10]. The approach is characterized by anonymity, iterative rounds and the opportunity for

participants to change their opinion in response to controlled feedback [10]. An e-Delphi was selected to facilitate international participation [11]. Reporting of this manuscript was in line with the ACCORD (ACcurate COnsensus Reporting Document) reporting guideline (Appendix A) [12]. Ethical approval was obtained from the Royal College of Surgeons in Ireland ethics committee (REC202103012). We preregistered our protocol on the Open Science Framework https://osf.io/2qcpz.

2.2. Delphi survey

Unlike a classical Delphi approach where the first round consists of open-ended questions to generate possible statements [10], this modified e-Delphi began with items identified from the current version of the Right Review tool (Appendix B), developed following a robust methodology including literature reviews and extensive user testing [9]. The international Project Steering Group (PSG), comprising the coauthors (chair Dr Clyne, Appendix C), determined the survey structure, as follows.

1. Background information and participant experience with evidence synthesis
2. Right Review tool refinement, rating
   a. proposed guiding questions to integrate quantitative and qualitative branches ($n = 14$)
   b. definitions of the possible evidence synthesis methods and approaches ($n = 27$)
   c. current tool output elements ($n = 5$)
3. Advantages and disadvantages of the tool.

For the purposes of the survey we conceptualized evidence synthesis methods as per the Evidence Synthesis International definition [1] and operationalized approaches as those review types that can be applied to many of the evidence synthesis methods. For example, a systematic review (method) can be followed and also apply a living or rapid approach.

All panel members also had the opportunity to provide comments and feedback. The e-Delphi survey was administered using Welphi (Welphi.com) and piloted using a convenience sample ($n = 10$) of researchers from the Royal College of Surgeons in Ireland and Health Information and Quality Authority, to check face validity, comprehensibility, and acceptability. These pilot researchers were not involved in the development or updating of the Right Review tool. Based on the feedback, some minor wording changes were made to improve clarity. All data were anonymized to maintain confidentiality.

2.3. Delphi panel recruitment

A panel of international knowledge users was formed. The initial evaluation of the *Right Review* tool found that the adoption and reach of the tool extended to a diverse audience [9]. Feedback on the tool is received regularly via a random usability questionnaire that pops up on the website tool and there have been >40,000 users. Therefore, for the purposes of this e-Delphi, we defined a knowledge user as anyone who may use or benefit from this tool including researchers, librarians, methodologists, clinicians, patient representatives, policy makers, and commissioners of research. We aimed to recruit a pool of participants with extensive knowledge in this area. An initial list of individuals was identified through PSG (Appendix C) contacts and networks and a limited, unsystematic search of PubMed and PubReMiner for international experts actively (ie, past 5−8 years) publishing extensively (ie, >10 systematic reviews). Students were not specifically included given the likelihood to have limited experience in evidence syntheses methodologies. Email addresses were collected from personal contact lists and publicly available sources (eg, corresponding author details). Panellists were invited by the PSG to participate via e-mail, with a study invitation letter and information sheet attached. The principal investigator (BC) contacted individuals (via e-mail) 1 week later to establish their willingness to participate. There is no set standard for sample size of a panel. It has been suggested that a range of 10 to 18 panel members per area of expertise is appropriate [13]. To obtain a response rate of above 25 panel members, we aimed to invite at least 70 individuals.

2.4. Data collection

The survey was planned a priori to be conducted across 2 rounds, with any items not reaching high agreement after round 2 discussed by the PSG. Nonresponders or those failing to complete each round were sent a minimum of 3 email reminders, at 1-week intervals, per survey round. Data collection took place between July and October 2022. Although there is no set definition of high agreement in a Delphi study, reviews have highlighted that the most common definition is a percentage agreement with cut-off levels ranging from 51% to 80% [14,15]. For this survey, we defined high agreement as at least 70% agreement (ie, 70% agreement across the highest categories).

2.4.1. Round 1

Panel members were asked to provide background information and details of experience with evidence synthesis. They were then provided with the combined quantitative and qualitative set of guiding questions and asked to rate on a 7-point Likert scale (“1-not at all important” to “7-extremely important”) to what extent the item was important in deciding which review to conduct. They were also asked to rate (on a 7-point Likert scale) the clarity of definitions of reviews and the importance (on a 7-point Likert scale) of current tool output elements. Panel members were given the option to select “not applicable/unsure” if they were unable to offer an opinion, along with any additional

comments or suggestions for items. Panel members were then asked their views (free text) on the possible advantages and disadvantages of the tool. Any additional items proposed in the free-text comment boxes were discussed by the PSG. Items were then included for rating in round 2 if the majority of the PSG agreed that the item was unique.

2.4.2. Round 2

After round 1, the guiding questions and definitions not reaching high agreement were edited and amended by the study authors based on feedback from panel members (Appendix B). All panel members who participated in round 1 were provided with summary feedback from round 1. They were asked to rerate items that did not achieve high agreement in round 2. New items added to round 2 were rated only once.

2.4.3. PSG meeting

The PSG met online to discuss outstanding items (February 2023). Before this meeting, the PSG were sent a copy of the round 1 and 2 results and a summary of the remaining items to be discussed, with any comments from panel members. Discussion on whether to retain, modify, or eliminate an item was facilitated by BC. A detailed written summary was circulated to the PSG following the meeting for review and confirmation of agreement.

2.5. Analysis

Demographic characteristics were summarized descriptively. Ratings for each outcome in the e-Delphi were converted to a summary score by calculating the means along with standard deviations. Medians and interquartile ranges were also calculated to account for potential skewed data. All analysis was conducted in Excel.

3. Results

3.1. Response rate and panel members

A total of 80 individuals were invited to participate, of whom 28 (35%) initiated the Delphi. A total of 24 panel members from 9 different countries (Ireland, Canada, Australia, USA, UK, South Africa, Greece, Germany, India) completed all sections of round 1 and 12 completed all sections of round 2 (Fig 1). Most panel members described themselves primarily as a researcher with extensive previous history in undertaking evidence syntheses (Table 1); only 1 panel member was a patient representative. Over 90% of panel members had not used the *Right Review* tool previously (Table 1).

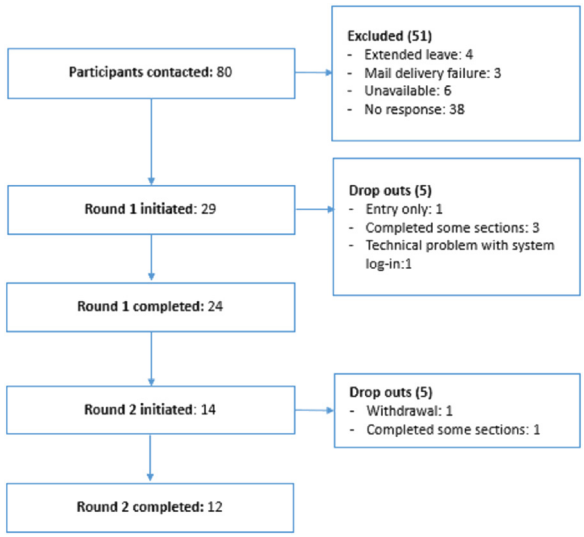

Figure 1. Panel member flow diagram. (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article.)

3.2. Advantages and disadvantages of structured tools to support evidence synthesis

A total of 19 panel members provided 35 comments (Appendix D) on the advantages/disadvantages of a tool such as *Right Review*. The main advantages identified included educating less experienced researchers ($n = 10$), setting researchers on the right track ($n = 6$), exposing researchers to new methods ($n = 2$), and standardizing evidence synthesis nomenclature ($n = 2$). The main disadvantages included the potential to preclude creative ways of thinking about evidence synthesis ($n = 4$), possible misinterpretation of the tool output ($n = 3$), and difficulties with keeping the tool up to date ($n = 3$).

3.3. Overview of rounds

The flow of items through the rounds is presented in Figure 2 and Table 2. All items, including any new, disaggregated, or consolidated items are presented in Table 2.

3.4. Round 1

In Round 1, 21 of 46 items achieved high agreement for inclusion (Table 2). From the 14 guiding questions presented, high agreement on the importance of 6 questions (eg, questions on the review goal and time/resource constraints) was reached in Round 1. Eleven of the 27 review definitions (eg, systematic review and scoping review) and approaches (eg, rapid review and living review) reached high agreement on clarity. Of the 5 current tool output elements presented, 4 reached high agreement on importance (eg, the suggested method and links to relevant handbooks). Most comments ($n = 218$, Appendix D) suggested minor wording changes to improve clarity and

Table 1. Characteristics of Delphi survey participants

	Round 1 initiated ($n = 28$)		Round 1 complete ($n = 24$)		Round 2 complete ($n = 12$)	
Characteristic	***N***	**%**	***N***	**%**	***N***	**%**
Current primary position						
Researcher	19	67.9	18	75.0	8	66.7
Health-care provider	1	3.6	1	4.2	1	8.3
Decision maker	1	3.6	0	0	0	0
Journal editor	1	3.6	1	4.2	1	8.3
Librarian	3	10.7	1	4.2	0	0
Educator	1	3.6	1	4.2	1	8.3
Community member/patient representative	1	3.6	1	4.2	1	8.3
Other (project manager)	1	3.6	1	4.2	0	0
Area of residence						
Europe	12	42.9	10	41.7	5	41.7
North America	8	28.6	7	29.2	2	16.7
Australia	5	17.9	5	20.8	4	33.3
Middle East	1	3.6	0	0.0	0	0.0
Africa	1	3.6	1	4.2	0	0.0
Asia	1	3.6	1	4.2	1	8.3
Evidence syntheses involved in (last 5 y)						
2	1	3.6	1	4.2	0	0
3	2	7.1	2	8.3	1	8.3
5 to 10	8	28.6	6	25.0	2	16.7
>10	17	60.7	15	62.5	9	75.0
Last evidence syntheses involved in						
Systematic reviews (with or without meta-analysis)	18	64.3	16	66.7	8	66.8
Scoping reviews	3	10.7	2	8.3	1	8.3
Rapid reviews	1	3.6	1	4.2	0	0
Qualitative evidence syntheses	2	7.1	2	8.3	1	8.3
Health technology assessments	2	7.1	1	4.2	1	8.3
Other (overview of reviews)	2	7.1	2	8.3	1	8.3
Reason for last review						
Peer review publication	6	21.4	5	20.8	4	33.3
Support guideline development	7	25	6	25.0	2	16.7
Support local decision making	1	3.6	1	4.2	0	0
Requested by decision makers (nationally)	6	21.4	5	20.8	2	16.7
Thesis or other higher degree qualification	4	14.3	4	16.7	3	25.0
Other (student supervision)	4	14.3	3	12.5	1	8.3
Role in last review						
Main author/coordinator	13	46.4	12	50	5	4.7
Coauthor/research assistant/data screening/extraction	1	3.6	1	4.2	1	8.3
Methods and statistical advice	7	25	7	29.2	4	33.3
Search strategy developer/librarian	2	7.1	0	0	0	0
As an expert in the field, knowledge user, or public providing advice and approving final document	2	7.1	2	8.3	1	8.3
Commissioner	1	3.6	0	0	0	0

(*Continued*)

Table 1. Continued

Characteristic	Round 1 initiated (n = 28)		Round 1 complete (n = 24)		Round 2 complete (n = 12)	
	N	%	*N*	%	*N*	%
Knowledge translation/implementation	1	3.6	1	4.2	1	8.3
Other (project manager)	1	3.6	1	4.2	0	0
Previously used *Right Review* tool						
Yes	2	7.1	2	8.3	2	16.7
No	26	92.9	22	91.7	10	83.3

understanding of the question stem or the list of potential answers provided. For the review definitions, general feedback recommended the use of evidence synthesis rather than knowledge synthesis and some additional clarifications. After detailed discussion within the PSG, the second round survey was updated; 1 review type (systematic review of burden of illness studies or monetary cost studies) was disaggregated into 2 separate review types and 2 review approaches (umbrella review and overview reviews) were consolidated due to similarities. Three new items suggested by panel members, including a summary of limitations, a list of appropriate alternatives and an evidence

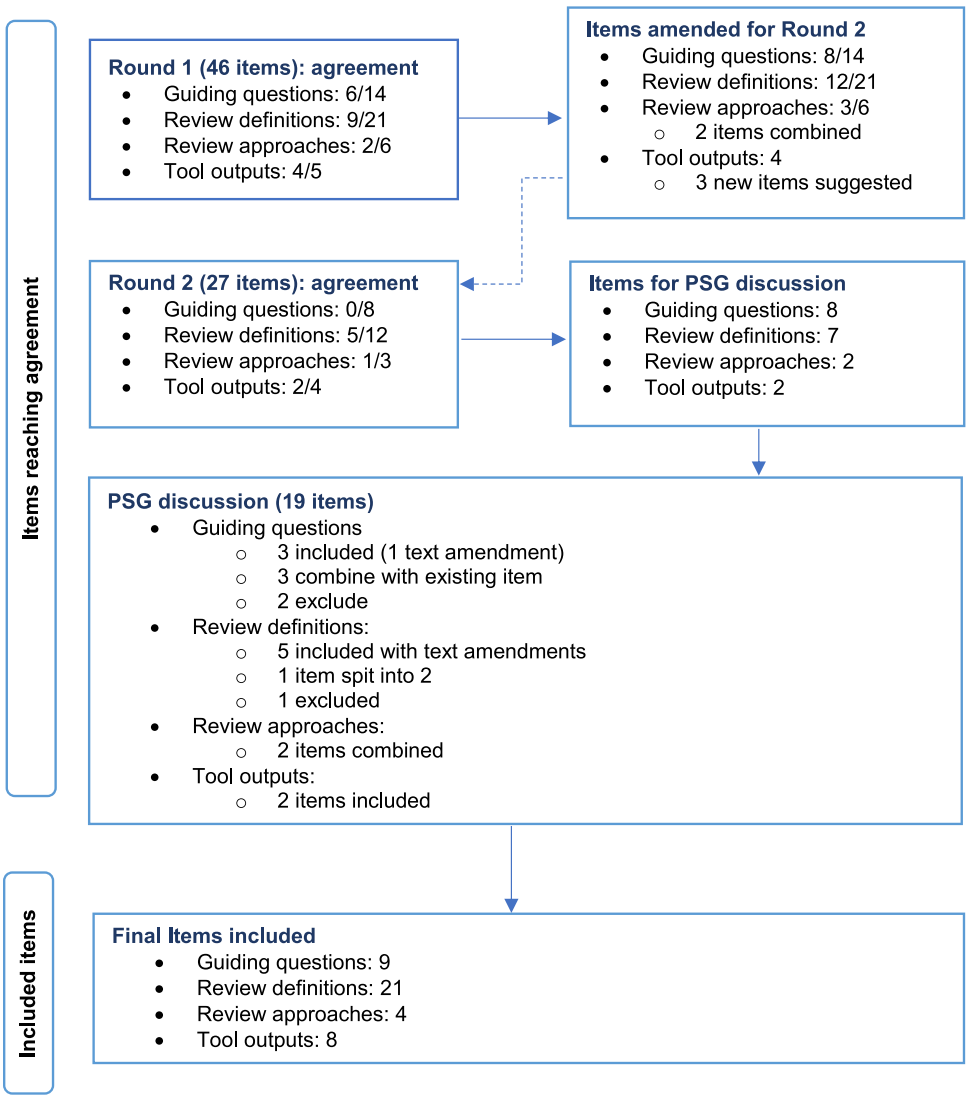

Figure 2. Delphi process summary. (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article.)

synthesis ecosystem map, were added to the tool output elements.

3.5. Round 2

In Round 2, 27 remaining items were presented, including the 3 new items suggested in Round 1 (Fig 2). None of the guiding questions presented reached high agreement on importance, 6 definitions (eg, framework synthesis) and approaches (eg, overview of reviews) reached high agreement on clarity and 2 tool output elements (inclusion of limitations and references) reached high agreement on importance (Table 2). A total of 8 items reached high agreement in round 2, with the remaining 19 items brought forward for discussion by the PSG.

3.6. PSG review

Following discussion within the PSG of the remaining 8 guiding questions.

- Two were included as is (fixed vs emergent and theory)
- One was included with an edit to text (number of comparisons),
- Three (audience, context, number of studies) were amalgamated into an existing question (review goal) as potential answer options, as opposed to being retained as individual questions
- Two were excluded (type of sampling method, team experience in evidence synthesis).

Of the remaining definitions and approaches, 5 were included with text amendments, 1 item was split (systematic review of burden of illness studies or monetary cost studies), 1 excluded (qualitative interpretive metasynthesis), and 2 items combined (umbrella review and overview reviews), Appendix E provides a full overview of the amendments made. The 2 remaining tool output items (a list of appropriate alternatives and an evidence synthesis ecosystem map) were also included (Fig 2).

3.7. Final tool

The final tool now comprises 42 items (Table 3). The full outline of changes from the original tool is presented in Appendix E. In summary, the guiding questions in the previous tool are separated into 2 branches with 5 questions to guide quantitative review selection, and 10 questions to guide qualitative evidence syntheses selection [9]. The updated tool suggests 41 evidence synthesis methods, counting eg a scoping review and a rapid scoping review as 2 methods. The updated tool includes 21 unique evidence synthesis definitions, the majority of which can adopt any of 4 included approaches (eg, rapid or living). The current tool has 5 output elements which has been updated to 8 items (see Table 2).

4. Discussion

The *Right Review* tool was developed to assist those conducting evidence syntheses, particularly less experienced researchers, in identifying appropriate evidence synthesis methods. The tool was initially developed as a pilot project for quantitative reviews but was then expanded to separately include qualitative evidence synthesis [9]. This modified international e-Delphi facilitated reaching high agreement on integrating the quantitative and qualitative branches of this tool, in particular, integrating the 5 quantitative and 10 qualitative guiding questions into a single set of guiding questions. By combining these branches, we have eliminated the need for the user to preselect a quantitative or qualitative evidence synthesis from the outset, thereby increasing the potential utility of the tool, particularly when broader topics are being explored and research questions are still being refined.

The number of published evidence syntheses is growing exponentially, with nearly 80 systematic reviews being published daily in 2019 [16]. Overlap, redundancy, poor conduct, and duplication in evidence syntheses is escalating as their numbers grow [17−19]. Tools such as the *Right Review*, occupy a potentially valuable role in improving the field of evidence synthesis. Panel members highlighted its educational function, particularly in educating less experienced researchers and commissioners, and in alerting researchers to new evidence synthesis methods and alternative approaches. Given the substantial growth in the different types of evidence synthesis methods [5,6], it has become critical to enable researchers to ensure they are undertaking the most appropriate review approach to support clinical and policy level decision making, and thus avoid research waste.

The lack of consistency in the terminology available for review types [7,8] has arguably also contributed to confusion in the field, the mass production of redundant and misleading reviews and a conflicted evidence base [20]. Evidence Synthesis International has highlighted the need to develop and share standards, terminology and methodology consistently [1]. Our panel members identified the development and updating of the *Right Review* tool as an opportunity to standardize evidence synthesis nomenclature. Several of our research team are members of the Evidence Synthesis Taxonomy Initiative, collaborating with like-minded researchers to develop a living taxonomy of evidence syntheses, continuously updated (such as via a living wiki platform) and refined alongside advances in the field [21]. We envision that this work will be synergistic with future updates to the *Right Review* tool. However, establishing high agreement on the core components of some evidence syntheses will be challenging, particularly for approaches that are less established and formalized. Our e-Delphi demonstrated that reaching high agreement on established quantitative review types and definitions such as systematic reviews

Table 2. Modified e-Delphi agreement results

Item (as originally worded in round 1 unless otherwise stated)	Percentage in agreement (agreement level: ≥70% highlighted in bold)	
	Round 1	Round 2
Tool guiding questions		
What is your goal or objective or key contribution to knowledge by doing the review?	91%	N/P
If your review is about interventions or diagnostic tests, how many?	51%	67%
What type of evidence will you be using?	92%	N/P
What type of analysis will you conduct?	79%	N/P
Is your review question fixed or likely to be emergent?	50%	50%
Who is your primary audience?	42%	50%
Will the likely included articles contain sufficient detail regarding the role of theory within your planned review?	34%	41%
Will the likely included articles contain sufficient supporting detail to understand the study context?	46%	33%
What is your provisional estimate of the number of studies you plan to review?	51%	58%
What type of sampling method do you plan to use?	67%	67%
Will your review team include members with expertise in qualitative research?	71%	N/P
Will your review team include members with experience in knowledge synthesis?	67%	58%
Do you have time, resource and/or cost constraints to complete your review?	84%	N/P
Do you aim to continually update your review, incorporating relevant new evidence as it becomes available?	71%	N/P
Review types		
Scoping review	87%	N/P
Systematic review	79%	N/P
Burden of illness[a]	67%	67%
Costing systematic review[a]		66%
Mapping review	76%	N/P
Concept analysis	30%	42%
Framework synthesis	54%	75%
Best fit framework synthesis	54%	58%
Epidemiological systematic review	75%	N/P
Meta-aggregation	55%	59%
Prognostic systematic review	88%	N/P
Metaethnography	63%	75%
Diagnostic accuracy systematic review	100%	N/P
Metainterpretation	63%	75%
Metastudy	50%	55%
Economic evaluation systematic review	96%	N/P
Metasummary	62%	75%
Thematic synthesis	75%	N/P
Mixed methods	87%	N/P
Narrative summary	59%	75%
Narrative Synthesis	41%	47%
Qualitative interpretive metasynthesis	50%	50%
Review approaches		
Rapid	88%	N/P
Living	93%	N/P
Overview[b]	67%	75%
Umbrella[b]	55%	
Mega-aggregation	46%	59%
Megaethnography	47%	49%
Tool output		
Summary table of your responses	91%	N/P
The suggested method	100%	N/P
Links to relevant methodological handbooks	87%	N/P
Links to references	68%	92%
Links to underlying logic of the suggested method	79%	N/P
A summary of limitations of proposed method(s)	N/P	91%
A list of appropriate alternative reviews	N/P	41%
A map/diagram of where the proposed review type sits within the broader ecosystem of evidence synthesis	N/P	58%

Abbreviation: N/P, not presented.

[a] Presented as 1 item in Round 1 and disaggregated into 2 items in Round 2.

[b] Presented as 2 items in Round 1 and as 1 consolidated item in Round 2.

and scoping reviews (which have extensive guidance available from organizations such as Cochrane and JBI) was easier than for qualitative approaches that are less well established (eg, Metastudy). The learnings from this process will help underpin the development of any future evidence synthesis taxonomy.

A strength of this study was the inclusion of different experts in evidence synthesis conduct and use including researchers, and decision makers from 9 different countries and incorporating opportunities for feedback and discussion. However, the majority of panel members were primarily researchers with extensive expertise in undertaking

Table 3. Final updated tool elements

Section 1: Guiding questions	
Question	**Answer options**
1. What is your goal or objective or key contribution to knowledge by doing the review?	a. Assess the effectiveness and/or safety of interventions
	b. Assess the burden of illness, monetary costs alone or the cost-effectiveness of interventions
	c. Assess the epidemiology of a disease or health condition
	d. Assess the prognosis of a disease or health condition
	e. Assess a diagnostic test for precision and accuracy
	f. Explore how and why interventions/programs work (or do not work) in particular contexts or settings
	g. Identify/clarify concepts, definitions, available research; identification of research gaps; provision of research agenda
	h. Synthesis of qualitative data
	i. Adoption of a new perspective
	j. Theory building
	k. Theory testing
	l. Both quantitative and qualitative goals
2. Is your review aim to compare between pairs of interventions/diagnostic tests (ie, an experimental intervention and a comparator intervention) or compare between multiple competing interventions/ diagnostic tests?	a. Pairwise comparison (ie, an experimental intervention and a comparator intervention)
	b. Multiple competing interventions/diagnostic tests.
3. What type of evidence will you be using?	a. Systematic reviews
	b. Primary studies only
	c. Both systematic reviews and primary studies
4. What type of analysis will you conduct?	a. Descriptive analysis only
	b. Quantitative synthesis only
	c. Both
5. Is your primary review question fixed (ie, following a framework with predefined parameters such as Population, Intervention, Comparison, Outcome) or emergent (ie, more akin to an overall objective but does not have a set of predefined parameters)?	a. Fixed
	b. Emergent
6. Within a planned qualitative evidence synthesis, reviewers can ignore, acknowledge, generate, explore, or test theory. Based on preliminary searches of the literature, is theory likely to have a role in structuring the review, in analysis or in interpreting review findings?	a. Yes
	b. No
7. Will your review team include members with expertise in qualitative research?	a. Yes
	b. No
8. Do you have time, resource and/or cost constraints to complete your review?	a. Yes
	b. No
9. Do you aim to continually update your review, incorporating relevant new evidence as it becomes available?	a. Yes
	b. No

(*Continued*)

Table 3. Continued

Section 1: Guiding questions	
Question	**Answer options**
Section 2: review definitions	
Scoping review	A form of evidence synthesis that addresses an exploratory research question aimed at mapping key concepts, types of evidence, and gaps in research related to a defined area or field by systematically searching, selecting, and synthesizing existing knowledge.
Mapping review	A form of evidence synthesis that maps out and categorizes existing literature across a broadly defined topic from which to commission further reviews and/or primary research by identifying gaps in research literature.
Systematic review	A form of knowledge synthesis that attempts to collate all empirical evidence that fits prespecified eligibility criteria to answer a specific research question. Systematic reviews use explicit, systematic methods that are selected with a view to minimize bias, thus providing more reliable findings from which conclusions can be drawn and decisions made. A systematic review may include a meta-analysis (a statistical technique for combining data from multiple studies on a particular topic) or a network meta-analysis (a meta-analysis in which multiple treatments (ie, three or more) are being compared using both direct comparisons of interventions within randomized controlled trials and indirect comparisons across trials based on a common comparator).
Systematic review without meta-analysis	A systematic review examining the quantitative effects of interventions for which meta-analysis of effect estimates is not possible, or not appropriate, for a least some outcomes
Epidemiological systematic review	A form of evidence synthesis that utilized prevalence and incidence data to describe geographical distribution of a disease or health condition and the variation in the distribution between subgroups (eg, gender or socioeconomic status). Synthesizing such data is necessary to monitor trends in disease burden and emergence and to contribute to the design of further etiological studies.
Overview of systematic reviews	Overview of systematic reviews (sometimes known as an overview, overview of systematic reviews, review of reviews, review of systematic reviews, or umbrella review) are systematic reviews of reviews and seek to provide an overview on a topic, rather than focus on a single intervention.
Prognostic systematic review	A form of evidence synthesis that summarizes and analyzes evidence from prognostic studies in a systematic review and meta-analysis. Prognosis studies seek to understand average (overall) prognosis, prognostic factor studies, risk prediction modeling studies, and treatment effect modification studies.
Diagnostic Accuracy systematic review	A form of evidence synthesis that summarizes the evidence on the accuracy (eg, sensitivity, specificity, likelihood ratios) of a test or instrument.
Systematic review of burden of illness studies	A form of evidence synthesis that searches, identifies and synthesizes data from burden of illness studies. The synthesis aims to provide information on the economic burden of a specific condition from both a societal and individual perspective, collating information on the overall costs to society, including medical and nonmedical costs.
Costing systematic review	A form of evidence synthesis that searches, identifies, and synthesizes data from monetary cost studies.
Economic evaluation systematic review	A form of evidence synthesis that searches, identifies, and synthesizes data from economic evaluation studies. This type of systematic review seeks to help decision makers understand the resource allocation problem and the potential impact of the added cost to obtain a unit of effectiveness (eg, the cost of gaining 1 quality-adjusted life year). Such reviews should focus less on trying to generate a summarized estimate of the cost-effectiveness ratio and more on demonstrating the extent to which this ratio varies from setting to setting, and why.
Rapid review	A form of evidence synthesis in which components of the systematic review process are simplified or omitted to produce information in a timely manner.
Living systematic review	A systematic review which is continually updated, incorporating relevant new evidence as it becomes available. Practically, this means that living systematic reviewss: Are underpinned by continual, active monitoring of the evidence (ie, monthly searches), immediately include any new important evidence (meaning data, studies or information) ie identified, Are supported by up-to-date communication about the

(*Continued*)

Table 3. Continued

Section 1: Guiding questions	
Question	**Answer options**
	status of the review, and any new evidence being incorporated.
Mixed methods (also known as mixed methods research syntheses, mixed studies reviews, mixed research syntheses)	Mixed methods systematic reviews can bring together the findings of effectiveness (quantitative evidence) and patient, family, staff or other's experience (qualitative evidence) to enhance their usefulness to decision makers. In conducting mixed methods systematic reviews, the core intention is to combine quantitative and qualitative data (from primary studies) or integrate quantitative evidence and qualitative evidence to create a breadth and depth of understanding that can confirm or dispute evidence and ultimately answer the review question/s posed.
Realist review	A form of evidence synthesis for studying complex interventions that involves identification of contexts, mechanisms, and outcomes for individual programs to explain differences, intended or unintended, between them. Realist reviews are used when needing to answer the question ''what works, for whom, under what circumstances?''
Thematic synthesis	Thematic synthesis applies thematic analysis to study data in a systematic review of multiple qualitative studies. Thematic analysis is a method ie often used to analyze data in primary qualitative research. Thematic synthesis has 3 stages: the coding of text 'line-by-line'; the development of 'descriptive themes'; and the generation of 'analytical themes'. While the development of descriptive themes remains 'close' to the primary studies, the analytical themes represent a stage of interpretation whereby the reviewers 'go beyond' the primary studies and generate new interpretive constructs, explanations or hypotheses.
Framework Synthesis	A form of qualitative evidence synthesis, adapted from framework analysis of primary data, which promotes generalization of findings through use of theory. Although framework analysis may generate theories, the prime concern is to describe and interpret what is happening in a particular setting. Framework analysis is best adapted to research with specific questions, a limited timeframe and issues that have been identified a priori. Analysis applying a theoretical framework can enable systematic identification and understanding of drivers that predict success in different settings, guide adaption of targeted practice changes and implementation strategies, and more quickly and confidently build the scientific knowledge base.
MetaEthnography	A form of qualitative evidence synthesis that aims to synthesize qualitative research or develop ''translations of qualitative studies into one another'' (ie, reciprocal translation analysis). Metaethnography is intended to develop mid-level theory to inform new conceptualizations of a phenomenon. The phases involved in conducting a metaethnography are parallel to the general characteristics of systematic reviews. However, this is an interpretive approach that aims to provide a new interpretation of included studies or a new theory to explain the range of research findings encountered, rather than a simple aggregation.
MetaInterpretation	A form of qualitative evidence synthesis that focuses on the interpretive synthesis of qualitative research. Metainterpretation aims to highlight differences between studies resulting from different data collection methods or different researchers. Such differences are not ''corrected for,'' but acknowledged in the analysis. It represents ''an interpretation'' rather than ''the interpretation'' of the different included studies, rather than identifying common themes across studies.
MetaSummary	A form of qualitative evidence synthesis ie a quantitatively oriented summary to accommodate the distinctive features of qualitative surveys. This approach can be used to combine descriptive quantitative and qualitative studies. The approach includes the extraction, grouping and formatting of findings, and the calculation of frequency and intensity effect sizes, which can be used to produce mixed research syntheses and to conduct analyses of the relationship between reports and findings.
Narrative Summary	A form of evidence synthesis that typically involves the selection, chronicling, and ordering of evidence to produce an account of the evidence. Its form may vary from the simple recounting and description of findings through to more interpretive and explicitly reflexive accounts that include commentary and higher levels of abstraction.
Concept Analysis	A form of evidence synthesis used to clarify the definition and attributes of an abstract concept to outline the meaning of that concept with respect to a certain domain or

(*Continued*)

Table 3. Continued

Section 1: Guiding questions	
Question	**Answer options**
	context. There are numerous methods of concept analysis but most follow a staged process, to identify the attributes and provide researchers with a precise definition of the concept.
Best Fit Framework Synthesis	A form of evidence synthesis ie a subvariant of framework synthesis. It has two strands involving i) a systematic approach to creating an initial framework based on existing frameworks, models, or theories (a priori framework) and ii) searching for and selecting the primary research studies for inclusion. These 2 ''strands'' then join together at the framework synthesis stage.
Meta-aggregation	A form of qualitative evidence synthesis that synthesizes all relevant qualitative study findings (the author's analytical interpretation of study data), not study data itself (such as the empirical data collected). A strong feature of the metaaggregative approach is that it seeks to enable generalizable statements in the form of recommendations to guide practitioners and policy makers. Meta aggregation is therefore sensitive to the nature and traditions of qualitative research while being predicated on the process of systematic review.
Metastudy	A form of qualitative evidence synthesis that involves an analysis of the theory (metatheory), methods (metamethod), and findings of qualitative research (metadata analysis) in a substantive area, followed by the synthesis of these insights into new ways of thinking about phenomena (metasynthesis).
Overview of qualitative evidence synthesis	Overviews of qualitative evidence synthesis aim to provide an overview of the existing evidence, identify evidence gaps, and make recommendations for future research or the generation of new theory or deeper conceptual interpretations of findings.

evidence syntheses. Therefore, the views of less experienced researchers, patients (as we had only 1 patient representative complete all rounds), and those from middle and low-income countries were less well represented, despite the extensive network of the international and multidisciplinary coauthor team. To avoid survey fatigue, we planned a priori to conduct two rounds, with items not reaching high agreement after round 2 being discussed and final decisions made for remaining items by the PSG. Once the tool has been updated, we plan to obtain feedback via the website and through user testing and evaluation.

There are, however, limitations to our study and the tool itself. Response rate was lower than anticipated. We achieved a response rate of 30% (24/80) in round 1, while 50% of those who completed round 1 completed round 2. We opted not to be comprehensive in retaining all items through both rounds to reduce burden to participants and attrition given that studies that include a higher number of items tend to have significantly lower response rates in the second round [22]. It is unclear if retaining all items through both rounds would have impacted upon the Delphi outcome if panelists had altered their ratings based on group feedback. Additionally, employing only 2 rounds as opposed to 3 rounds to reduce burden to participants means the final decision on a number of items was by the PSG only. We opted to invite only panelists who responded to round 1 to round 2; however, it has been suggested that invitation to every round independent of response to the previous round may lead to a better representation of opinions of the originally invited panel [23]. Such an approach may also increase sample size across rounds. Finally, given that a Delphi consensus parameter can vary from 51% to 80% [14,15], we pragmatically considered high agreement as being 70%. We have not explored whether changing this cut-off would alter findings of our study. The tool is only available in English, which could limit the potential pool of users.

5. Conclusions

The substantial growth in the different types of evidence synthesis available makes it challenging for reviewers to choose an appropriate review method. The use of a modified e-Delphi facilitated updating the *Right Review* tool, a freely accessible practical decision support tool that will help reviewers choose an appropriate method from a common set of quantitative and qualitative review-specific questions. The updated tool is expected to be available in Quarter 1, 2025.

CRediT authorship contribution statement

Barbara Clyne: Writing – review & editing, Writing – original draft, Visualization, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Melissa K. Sharp:** Writing – review & editing, Resources, Methodology, Formal analysis, Data curation. **Michelle O' Neill:** Writing – review & editing, Data curation, Conceptualization. **Danielle Pollock:** Writing – review & editing, Methodology, Data curation. **Rosarie Lynch:** Writing – review & editing, Methodology, Data curation. **Krystle Amog:**

Writing − review & editing, Methodology, Data curation. **Mairin Ryan:** Writing − review & editing, Data curation, Conceptualization. **Susan M. Smith:** Writing − review & editing, Methodology, Data curation, Conceptualization. **Kamal Mahtani:** Writing − review & editing, Methodology, Data curation. **Andrew Booth:** Writing − review & editing, Methodology, Data curation. **Christina Godfrey:** Writing − review & editing, Methodology, Data curation. **Zachary Munn:** Writing − review & editing, Methodology, Data curation. **Andrea C. Tricco:** Writing − review & editing, Methodology, Data curation, Conceptualization.

Data availability

The authors do not have permission to share data.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests. Barbara Clyne reports financial support was provided by Health Research Board. Dr Tricco (coauthor) is an Editor at the Journal of Clinical Epidemiology. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Supplementary data

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References

[1] Gough D, Davies P, Jamtvedt G, Langlois E, Littell J, Lotfi T, et al. Evidence synthesis international (ESI): position statement. Syst Rev 2020;9(1):155.
[2] Clyne B, Hynes L, Kirwan C, McGeehan M, Byrne P, Killilea M, et al. Perspectives on the production, and use, of rapid evidence in decision making during the COVID-19 pandemic: a qualitative study. BMJ Evid Based Med 2023;28(1):48−57.
[3] Neil-Sztramko SE, Belita E, Traynor RL, Clark E, Hagerman L, Dobbins M. Methods to support evidence-informed decision-making in the midst of COVID-19: creation and evolution of a rapid review service from the National Collaborating Centre for Methods and Tools. BMC Med Res Methodol 2021;21:231.
[4] Gurevitch J, Koricheva J, Nakagawa S, Stewart G. Meta-analysis and the science of research synthesis. Nature 2018;555:175−82.
[5] Sutton A, Clowes M, Preston L, Booth A. Meeting the review family: exploring review types and associated information retrieval requirements. Health Info Libr J 2019;36:202−22.
[6] Munn Z, Stern C, Aromataris E, Lockwood C, Jordan Z. What kind of systematic review should I conduct? A proposed typology and guidance for systematic reviewers in the medical and health sciences. BMC Med Res Methodol 2018;18:5.
[7] Tricco AC, Soobiah C, Antony J, Cogo E, MacDonald H, Lillie E, et al. A scoping review identifies multiple emerging knowledge synthesis methods, but few studies operationalize the method. J Clin Epidemiol 2016;73:19−28.
[8] Aronson JK, Heneghan C, Mahtani KR, Plüddemann A. A word about evidence: 'rapid reviews' or 'restricted reviews'? BMJ Evid Based Med 2018;23:204−5.
[9] Amog K, Pham B, Courvoisier M, Mak M, Booth A, Godfrey C, et al. The web-based "Right Review" tool asks reviewers simple questions to suggest methods from 41 knowledge synthesis methods. J Clin Epidemiol 2022;147:42−51.
[10] Dalkey N, Helmer O. An experimental application of the Delphi method to the use of experts. Manag Sci 1963;9(3):458−67.
[11] Donohoe H, Stellefson M, Tennant B. Advantages and limitations of the e-delphi technique. Am J Health Educ 2012;43(1):38−46.
[12] Gattrell WT, Logullo P, van Zuuren EJ, Price A, Hughes EL, Blazey P, et al. ACCORD (ACcurate COnsensus Reporting Document): a reporting guideline for consensus methods in biomedicine developed via a modified Delphi. PLoS Med 2024;21(1):e1004326.
[13] Okoli C, Pawlowski SD. The Delphi method as a research tool: an example, design considerations and applications. Inf Manag 2004;42(1):15−29.
[14] Diamond IR, Grant RC, Feldman BM, Pencharz PB, Ling SC, Moore AM, et al. Defining consensus: a systematic review recommends methodologic criteria for reporting of Delphi studies. J Clin Epidemiol 2014;67:401−9.
[15] von der Gracht HA. Consensus measurement in Delphi studies: review and implications for future quality assurance. Technol Forecast Soc Change 2012;79(8):1525−36.
[16] Hoffmann F, Allers K, Rombey T, Helbach J, Hoffmann A, Mathes T, et al. Nearly 80 systematic reviews were published each day: observational study on trends in epidemiology and reporting over the years 2000-2019. J Clin Epidemiol 2021;138:1−11.
[17] Siontis KC, Ioannidis JPA. Replication, duplication, and waste in a quarter million systematic reviews and meta-analyses. Circ Cardiovasc Qual Outcomes 2018;11(12):e005212.
[18] Tricco AC, Zarin W, Ghassemi M, Nincic V, Lillie E, Page MJ, et al. Same family, different species: methodological conduct and quality varies according to purpose for five types of knowledge synthesis. J Clin Epidemiol 2018;96:133−42.
[19] Prada L, Prada A, Antunes MM, Fernandes RM, Costa J, Ferreira JJ, et al. Systematic reviews and meta-analysis published in indexed Portuguese medical journals: time trends and critical appraisal. BMC Med Res Methodol 2022;22:105.
[20] Munn Z, Pollock D, Barker TH, Stone J, Stern C, Aromataris E, et al. The pandora's box of evidence synthesis and the case for a living evidence synthesis taxonomy. BMJ Evid Based Med 2023;28:148−50.
[21] Munn Z, Pollock D, Price C, Aromataris E, Stern C, Stone J, et al. Investigating different typologies for the synthesis of evidence: a scoping review protocol. JBI Evid Synth 2023;21:592−600.
[22] Gargon E, Crew R, Burnside G, Williamson PR. Higher number of items associated with significantly lower response rates in COS Delphi surveys. J Clin Epidemiol 2019;108:110−20.
[23] Boel A, Navarro-Compán V, Landewé R, van der Heijde D. Two different invitation approaches for consecutive rounds of a Delphi survey led to comparable final outcome. J Clin Epidemiol 2021;129:31−9.