Appendix A: Useful resources

Guidance for qualitative evidence synthesis

Biesty L, Meskell P, Glenton C, et al. A QuESt for speed: rapid qualitative evidence syntheses as a response to the COVID-19 pandemic. *Sys Rev*. 2020 Dec;9(1):1-6.

Campbell, F., Weeks, L., Booth, A., et al. (2019). A scoping review found increasing examples of rapid qualitative evidence syntheses and no methodological guidance. *J Clin Epidemiol*, 115, 160-171.

Noyes J, Harden A,(eds) (2024) *Cochrane-Campbell Handbook of Qualitative Evidence Synthesis.* Chichester: John Wiley & Sons.

Majid U, Weeks L. Rapid qualitative evidence syntheses (rQES) in health technology assessment: experiences, challenges, and lessons. *International Journal of Technology Assessment in Health Care*. 2021;37(1).

NHS Scotland (2019). *A guide to conducting rapid qualitative evidence synthesis for health technology assessment.* Healthcare Improvement Scotland.

Shaw L, Nunns M, Briscoe S, et al. A “Rapid Best-Fit” model for framework synthesis: Using research objectives to structure analysis within a rapid review of qualitative evidence. *Research Synthesis Methods*. 2021 May;12(3):368-83.

Template for qualitative synthesis

Glenton C, Bohren MA, Downe S, et al, on behalf of Effective Practice and Organisation of Care (EPOC). *EPOC Qualitative Evidence Synthesis: Protocol and review template.* Version 1.1. EPOC Resources for review authors. Oslo: Norwegian Institute of Public Health; 2020. Available at: http://epoc.cochrane.org/epoc-specific-resources-review-authors

https://epoc.cochrane.org/sites/epoc.cochrane.org/files/public/uploads/Resources-for-authors2017/epoc_qes_protocol_and_review_template.docx

Glenton C, Lewin S, Downe S, et al. Qualitative evidence syntheses within Cochrane Effective Practice and Organisation of Care: Developing a template and guidance. *International Journal of Qualitative Methods*. 2021 Sep 29;20:16094069211041959.

Glenton C, Lewin S, Downe S, et al. Cochrane Effective Practice and Organisation of Care (EPOC) Qualitative Evidence Syntheses, Differences From Reviews of Intervention Effectiveness and Implications for Guidance. *International Journal of Qualitative Methods.* 2022 Feb 11;21:16094069211061950.

Checklists for assessment of methodological limitations

Cochrane Checklist (Recommended interim choice)

Documented in: Houghton C, Meskell P, Delaney H, et al. Barriers and facilitators to healthcare workers' adherence with infection prevention and control (IPC) guidelines for respiratory infectious diseases: a rapid qualitative evidence synthesis. *Cochrane Database Syst Rev* 2020, 4:CD013582. doi: 10.1002/14651858. CD013582. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD013582/full#CD013582-tbl-0002

CASP Checklist: 10 questions to help you make sense of a Qualitative research

https://casp-uk.net/wp-content/uploads/2018/03/CASP-Qualitative-Checklist-2018_fillable_form.pdf

JBI Checklist: Checklist for Qualitative Research

https://jbi.global/sites/default/files/2019-05/JBI_Critical_Appraisal-Checklist_for_Qualitative_Research2017_0.pdf

Quality of Reporting Tool (QUART)

http://quart.pbworks.com/

***C*ochr*A*ne qualitative *ME*thodological *L*imitati*O*ns *T*ool (CAMELOT) project**

Munthe-Kaas HM, Glenton C, Booth A, et al. Systematic mapping of existing tools to appraise methodological strengths and limitations of qualitative research: First stage in the development of the CAMELOT tool. *BMC Med Research Methodol*. 2019 Dec;19(1):1-3.

Appendix B: Elaboration and practical considerations

PREPARATION AND PLANNING

Although by definition rapid reviews are time-critical, with limited potential for preparation and planning, the effective functioning of a review team is critical to success. Optimal preparation for rQES is to establish review teams that are experienced at working together, that work to clear expectations of tasks and roles and that have procedures, processes and technologies already in place [1]. Such experience is developed through day-to-day working on multiple types of synthesis. Many smart working procedures have been honed in response to the COVID19 pandemic [2 3] and web-conferencing facilities and shared file spaces now characterise rapid team working. The first ever Cochrane rQES team describe constant communication between the core team (frequent emails, multiple daily videoconference meetings and text messages) [4]. In particular they advocate real-time conversations during the immersion required for intense analytical activity [4]. Other members of their extended team were required to answer email queries promptly, return feedback within hours, and to be "on call" for methodological or topic-specific questions [4]. The core team affirm the value of accessing topic and methodological expertise through online platforms [5](5). This hidden section of the iceberg is rarely reported [4]. The team also highlights the challenges of balancing time needed for thoughtfulness and comprehensiveness against the need for an urgent response. Benefits from collaborative working must be offset against enhanced consistency from using a limited number of reviewers [6](6).

SETTING THE REVIEW QUESTION AND TOPIC REFINEMENT

1. **Ensure involvement of knowledge users, even when the QES is abbreviated or accelerated; especially when setting the review question and refining the topic, to ensure key perspectives are included and to secure a mandate for key review decisions.**

Involvement of knowledge users, including consumers, in agreeing the research question is critical to the utility of a rapid review [2 3 5]. A rapid review team should seek to involve an optimal number of knowledge users in reflecting important perspectives, agreeing the topic and signing off the review mandate [2 5]. A review team can also ask knowledge users to review a selection of 25-40 results. They could use a short scoping exercise to surface complexities in how a topic is defined or its terminology and to understand the number of studies and the richness of data within those studies [5].

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2. Use templates to fast-track writing of a protocol. The protocol should always be publicly available and should be registered if the rQES timescales permit.

Cochrane guidance suggests use of a question formulation structure to refine the review question [7]. The SPICE (Setting, Perspective, Phenomenon of Interest, Comparison, Evaluation) framework, or variants [8-10], are typically used. The Joanna Briggs Institute favours PICo (Population, Interest, Context) (See Table 1). Where data on a specific intervention are limited the team may need to extend their scope to include studies reporting experience of a target condition [6 9 11].

As with other systematic approaches, an rQES requires a protocol that conforms to PRISMA-P reporting guidelines [12]. The *Cochrane EPOC Protocol and Review template* (https://zenodo.org/record/5973704#.YkFpPSjMIb0) guides reviewers through important review decisions [13]. However, the team must ensure that use of standard templates does not lead them to neglect either the specific requirements of the topic or the need for abbreviated or amended procedures. Use of the SPICE criteria also helps in communicating the scope of the rQES and, subsequently, in operationalising study selection [9]. Given that some aspects of the protocol may be contingent on the search results and study selection (e.g. richness of candidate data or value of a potential framework), it is helpful to frame choices as conditional and then document *post hoc* changes as they occur [1]. The protocol should always be publicly available and should be formally registered if the rQES timescale permits. Formal registration will maximise the likelihood of the review being identified by other agencies and interested parties. This minimises duplication of effort and avoids research waste and is particularly important where the rQES is in response to an emergency or time-critical situation.

Table 1 - Sample SPICE/PICo Questions

What are the perceptions and experiences of online pain management interventions among people with persistent pain in hospital and community health-care settings?			
Setting:	Hospital and community health-care settings.	Population	Individuals with non-malignant chronic or persistent pain
Perspective:	Individuals with non-malignant chronic or persistent pain		
Interest, phenomenon of:	Individuals' experiences of online pain management interventions	Interest	*Individuals' experiences of online pain management interventions*
Comparison: interventions.	Face to face (usual) pain management	Context	Hospital and community health-care settings.
Evaluation:	Individual perceptions of: impact on individuals' capacity to self manage their pain condition;		

Scoping (of review parameters) and mapping (of key types of evidence) helps when planning the review. Once a team has mapped the approximate number and distribution of studies against key variables (e.g. country, age, ethnicity etc), they can decide whether or not to use purposive sampling [14].

Sampling for qualitative synthesis should privilege diversity across contexts and circumstances over opportunistically identifying "more of the same" [14]. A review team should determine a meaningful sample. No rule determines a meaningful number of studies to be included; including too many studies may make the synthesis overly descriptive, too few might not sustain meaningful interpretations. Ten of thirteen reviews analysed in a methodological scoping review of rQES included no more than 20 studies. It was unclear whether this was achieved by focusing the question and inclusion criteria or through purposive sampling [15]. The Cochrane rQES team identified an initial 36 studies and then sought to purposively sample to reduce that number to 20 studies factoring in relevance, geographical spread and interpretive value [4]. Similarly, the CADTH team describe narrowing an initial trawl of 100 relevant studies by priority issues [6]. Guidance on sampling is available from the Cochrane EPOC web-site and from the forthcoming *Cochrane-Campbell QES Handbook* (See Appendix A). Further empirical work is required on the impact of intentional sampling [14](9) and on the unintentional implications of missing eligible studies [3]. A team should consider how the amount of available data will impact on the choice of synthesis methods [14 16]. Evidence to date suggests that an overall synthesis that uses sampling approaches can prove suitably informative provided that the team is careful not to exclude specific populations – for example, by applying an arbitrary quality threshold [17].

SETTING ELIGIBILITY CRITERIA

Key decisions within the question formulation structure [8] can speed up resolution of scope. For example, new contexts or novel interventions may require that the team extend the scope beyond a narrow population who have experienced a specific *intervention* to include studies reporting experience of the *target condition* [11]. Will the review question be *directly* addressed by the research questions of included studies or will you have to trawl *broadly relevant* studies for specific data concealed within studies [18]?

3. Clearly define the included perspectives. A rapid QES (rQES) may need to limit the number of perspectives, with a focus on those most important for decision-making.

Within a conventional QES a review team spends much time finalising a review question [19]. Agreeing the question may involve multiple iterations between the team and those commissioning the review together with key knowledge users. For an rQES it is no less

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imperative to establish exactly what those commissioning the review require. However, the review team and commissioners need to agree at what point, and after how many iterations, they can finalise the scope. One way of limiting workload is to define the number of perspectives that relate to the phenomenon of interest and specify which perspectives are to be included or not included. Topic experts can help to ensure that the rQES is responsive to need and to arbitrate between relevant and non-relevant topics [2].

4. Define if "indirect evidence" is to be used in the absence of direct evidence. An rQES may focus on direct evidence, except when only indirect evidence is available.

A key consideration is whether "indirect" evidence is required in the absence of direct evidence [18]. Relevance in QES is complex – a shared mechanism of action may link the phenomenon to comparable interventions or conditions. Such interventions or conditions may offer analogous insights and comparisons. Qualitative evidence claims transferability, not generalisability [18], and extends beyond similarity of interventions (intervention A is like intervention B) to include shared mechanisms (phenomenon of interest A operates in a similar way to phenomenon of interest B).

For example, in the absence of direct evidence relating to COVID-19 at the onset of the pandemic, the Cochrane rQES team broadened their scope to other respiratory infectious diseases. However they deliberately chose not to extend further to additional infectious diseases, concluding that infection prevention control guidelines are demonstrably different in these cases [4 20]. Likewise the Canadian CADTH team broadened population scope, following discussion with decision-makers, from cryptogenic stroke (3 studies) to similar experiences relating to heart failure and atrial fibrillation (a further 6 studies) [6]. The urgent nature of many rQES may require that they explore topics that are not well-populated by qualitative evidence. Thin or indirect evidence may be preferable to a complete absence of evidence to inform decision-making.

The review team should aim to reach decisions on scope and included perspectives as practically and speedily as possible. Rather than engage in theoretical discussions of scope, it is preferable to focus on a set (25-40) of actual abstracts and to ask a diverse knowledge users to decide whether these use appropriate terminology or scope.

As with any rapid review the team needs to determine that any date and setting restrictions are appropriate [9] and that language restrictions balance practicalities with the specific requirements of the review. For example, an rQES of Zika virus specifically included Spanish and Portuguese languages alongside English in recognition of the condition's prevalence in South America [21]. The CADTH team describe limiting the number of databases searched and using date limits (i.e., last 5 or 10 years), language limits (i.e., English only), and a

CADTH qualitative search filter [6]. An internal CADTH rule of thumb suggests that their teams cannot accommodate more than a thousand database hits within a 5 week timeframe, requiring iteration between question formulation and literature searching [6].

5. Consider including multiple QES within a mega-aggregation or mega-ethnography.

If a topic is broad and evidence plentiful a review team may decide to synthesise existing QESs (i.e. to conduct a review (or overview) of qualitative reviews) [10]. For example, a review team conducting multiple rQESs of obesity in children and adolescents were variously able to re-use 40 QES of child and adolescent obesity to address diverse treatment options within mega-reviews (overviews) [22]. Overviews of qualitative reviews are becoming increasingly viable given increasing numbers of QES. As with all overviews the review team needs to decide whether to analyse the reviews in their own right or to simply use them as a rapid way of identifying primary qualitative studies. Time spent on assessing the quality of reviews for potential inclusion, using the SBU qualitative evidence checklist [23] is time well-spent in making this important call. A review team needs to determine *a priori* what types of review are eligible for inclusion; inclusion of at least one qualitative study, multiple qualitative studies within any form of synthesis (e.g., even within a narrative synthesis or a realist synthesis) or only reviews that *include primary qualitative studies that use recognisable qualitative methods of data collection and data analysis (the Cochrane QIMG definition) within a recognised method of qualitative evidence synthesis* e.g. framework synthesis, thematic synthesis, meta-ethnography or meta-aggregation.

6. Consider privileging rich qualitative studies; consider a stepwise approach to inclusion of qualitative data and explore the possibility of sampling.

A team may sample from richer primary qualitative studies [14] or seek purposeful coverage of diverse cases. Qualitative data analysis requires extensive, iterative engagement with textual data in the studies and within the extracted data. The more data a reviewer is required to synthesise, the less nuance and richness they are likely to extract; large numbers of primary studies with a high volume of data therefore have the potential to overwhelm the quality of the synthesis. A stepwise sampling strategy will take these factors into account. For example, where data is plentiful an rQES may be limited to qualitative research (step 1) and/or to mixed methods studies (step 2). Where data is less plentiful then a team may need to include surveys (step three) or other qualitative data sources (step 4).

Alternatively, studies may be selected for their richness [14] or study quality [17]. Ames and colleagues propose a richness scale that triages studies (Table 1) [14]

Table 1 - Richness scale from Ames and colleagues [14]

Score	Measure
1	Very little qualitative data presented that relate to the synthesis objective. Those findings that are presented are fairly descriptive.
2	Some qualitative data presented that relate to the synthesis objective
3	Reasonable amount of qualitative data that relate to the synthesis objective
4	Good amount and depth of qualitative data that relate to the synthesis objective
5	Large amount and depth of qualitative data that relate in depth to the synthesis objective.

The same review team identifies challenges that rapid QES teams should consider [14]:

- Sampling may mean that the team miss articles with information about particular populations, settings, or interventions [17];
- Other (non-richness) considerations within the sampling framework (such as the need to cover certain geographical regions or populations) may result in sampling studies with thinner data;
- Sampling may impact on which and how many findings a study contributes to. In particular, GRADE-CERQual assessments otherwise supported by adequate and relevant data [18 24] may be more thinly populated than if they were sampled comprehensively.

Work in support of WHO guidelines used a stepwise approach, moving from reviews of reviews to a rapid QES of primary studies. Although sufficient reviews (circa 15 reviews for each topic) existed for four out of five synthesis topics [22], a fifth synthesis, on values and preferences for surgical and pharmaceutical interventions, identified only one vaguely relevant review. The team had to readjust to perform a stand-alone rapid QES of primary qualitative studies that was no longer standardised to methods used for the other four overviews.

SEARCHING

7. Involve an information specialist (e.g. librarian) in prioritising sources and search methods.

Involvement of information specialists (or librarians) is widely recommended in systematic search guidance, particularly for rapid reviews [4 25]. They can advise on the implications of

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choosing different study-specific filters to retrieve qualitative research, of including mixed-methods studies or surveys as well as exclusively qualitative research studies and on whether existing reviews in the topic are rare or plentiful. While full integration of the information specialist within the review team is best, possible engagement varies from design and peer review of search strategies, through running the searches, documentation and reference management, through to intensive searching of grey literature sources [25].

Ideally, information specialists will draw upon experience of systematic review searching and yet still recognise the exacting requirements of searching and study selection for a resource-limited review [26]. Involvement of an information specialist can speed up construction of the search strategy and retrieval of bibliographic references and subsequent full-text literature. They can also help in deciding which sources should or should not be searched within the available resources.

Information specialists are less likely to be familiar with searching for qualitative research than for other types of literature. In this case they could familiarise themselves with the following three resources:

- an overview of qualitative searching produced for the HTA-I (Health Technology Assessment International) Information specialists group (https://vortal.htai.org/index.php?q=node/1235)
- qualitative filters as documented by the InterTASC Information Specialists' Sub-Group Search Filter Resource (https://sites.google.com/a/york.ac.uk/issg-search-filters-resource/home/qualitative-research)
- a methodological overview on qualitative searching rehearsing seven important considerations [27].

Information specialists should become familiar with question formulation frameworks such as PICo and SPICE together with diverse sources and approaches for retrieving qualitative research [8 27].

R8. Consider limiting database searching to two or three multidisciplinary databases and, if resources allow, searches of one or two specialized (subject or regional) databases.

Generic Cochrane rapid review guidance proposes that teams select a small number (at least 2) of information sources for relevant literature [26]. Empirical evidence suggests that two database strategies can retrieve up to 90% of includable qualitative publications (PubMed + CINAHL, 82%; Scopus + CINAHL or Scopus + ProQuest Dissertations and Theses Global, both 89%) [28]. A three database combination (Scopus + CINAHL + ProQuest Dissertations

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and Theses Global) extends this to 92%. Surprisingly the addition of PubMed to this combination only adds an extra 1% [28]. The rQES team should make clear that limiting database searches in these ways will omit up to 10% of eligible studies; higher profile studies will be identified but important insights, contexts or populations may be missed.

In low resource-settings a search of the PubMed database alone would only offer retrieval of 72% of relevant studies [28]. In these contexts, an rQES team should enhance coverage via locally-available and locally-relevant sources, available without subscription, such as regional databases and university repositories as well as resources such as Google Scholar.

The scoping review of rapid QESs reported typical numbers of between 3 to 7 databases [15]. The Cochrane rQES team deliberately searched only one formal database (MEDLINE), informed by published evidence on high yield, but compensated this with extensive supplementary strategies (citation searching; use of Publish or Perish to search Google Scholar) [27]. An information specialist can use a specific study filter for identifying qualitative research from MEDLINE and other core databases, combining this with strategies relating to the phenomenon of interest. The NHS Improvement Scotland guidance reproduces such strategies for MEDLINE and PsycINFO [9], extending these with filters for patient views and preferences.

If a topic is multidisciplinary and extends beyond health then a team may utilise a social science database such as Scopus or Web of Science. In addition, searching of specialized databases (e.g., PsycInfo [28] and CINAHL [28]) is recommended for subject-specific topics. Regional databases may also be appropriate, particularly in covering evidence from low- and middle-income countries.

9. Even when resources are limited, consider factoring in time for peer review of at least one search strategy.

Given that searching for rQES may focus on a small number of databases [15], and may bypass some of the cross-checking considered mandatory for a regular systematic review, it becomes particularly important to consider peer review of at least one search strategy (e.g., MEDLINE) [4 25 27]. Ultimately, however, a review team must identify and mitigate where greatest risk lies of missing relevant studies. If the information specialist is very experienced in searching for qualitative evidence and the topic area they may decide to omit this step.

10. Selectively target appropriate types of grey literature and supplemental searches, including citation chaining, especially for diffuse topics.

Cochrane rapid review guidance recommends limiting grey literature and supplemental searching [25 26]. We suggest that the review team consider which *specific types* of grey

literature are important for the phenomenon of interest [27]. Rather than consuming valuable resource in both identifying and processing low-yield grey literature resources a team should decide whether government documents, theses or process evaluations are particularly useful to their specific review. Citation chaining (backwards via References and forwards via Citations) and Related Articles features may be particularly useful where the indexing terminology is diffuse.

STUDY SELECTION

Title and abstract screening

The Cochrane rQES used a core team of four individuals to conduct the subsequent processes of study selection, data extraction, quality assessment, synthesis and writing up within a two-week period. They contrast this with a segmented approach where reviewers are each allocated different tasks [4].

11. Use pre-prepared, pre-tested title and abstract forms to limit the scale of piloting, calibration and testing.

Carefully designed and standardized forms are key, particularly saving time by adapting existing templates. Typically, the entire screening team conduct a pilot using 30-50 abstracts to calibrate and test the review form [25]. Once the form is finalised two reviewers may independently screen a common set of 20% of abstracts, with conflicts resolved through discussion or third-party arbitration [25]. Most published reviews use only a single reviewer for title and abstract screening [4 15], justifying this by the additional 'released' time for analyzing, writing, and reporting the findings [4]. While quantitative reviews stress the importance of consensus, an added feature of dual processes (e.g. study selection, quality assessment and data extraction) for qualitative reviews is in capturing divergent views and perspectives to enrich study findings [29].

Provided the team is familiar with how to upload references into review software, such as Covidence or Rayyan, or into Excel drop-down menus they can achieve faster screening at the title and abstract stage.

12. Target and prioritise identified risks for each specific rQES and corresponding quality control procedures (for example, use of additional reviewers and percentages for double screening) in preference to extensive generic quality assurance procedures.

Checking procedures should target aspects of screening considered at risk for overlooked or misclassified studies. For example, if the total number of included studies is small then the

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principal risk lies in wrongly omitting relevant studies. In this scenario, 10% or 20% of the rejected studies may be reviewed by a second screener, as a pragmatic alternative to reviewing a random sample of all studies. Checking by a second screener would, in this instance, focus on a random sample of titles and abstracts *excluded* by the first screener and not on a random sample of *all* records.

Full-text screening

13. Use or adapt a pre-prepared pre-tested standardized full-text form as far as possible.

Full-text screening follows similar considerations. A standardized full text form is used to conduct a pilot exercise using 5-10 full-text articles so that the entire screening team can calibrate and test the review form [25]. For example, where inappropriate exclusion of relevant articles poses a specific threat, it may be appropriate to briefly review all full-text exclusions for eligibility, where feasible. Then one reviewer may singly screen included full text articles. Full-texts of included studies can be uploaded into review software, such as Covidence or Rayyan, or attached to a reference management database such as Endnote to facilitate retrieval and document management. Full text articles can be identified speedily by linking Google Scholar to the electronic journal collection of your organisation or using the Unpaywall browser extension to point to legal, author-posted manuscripts that are hosted on university and government web sites.

14. Identify likely risks to trustworthiness of findings and focus quality control procedures on specific threats (for example, use of additional reviewers and percentages for double screening).

If time allows, a second reviewer may screen all excluded full text articles to counter the likelihood of rejecting important studies [25]. However, most published examples use a single reviewer for full-text screening [15].

DATA EXTRACTION

15. Use a single reviewer to extract data using a piloted form, with a second reviewer for checking, or code data directly from full-text articles, again with checking. Limit data extraction to minimal essential items. Consider re-using data extracted from primary studies included in previous QESs.

At an early stage a review team must decide whether to perform data extraction or to import portable document format (pdf) files direct into qualitative analysis software such as NVivo [30]. Data extraction must balance quality control with expediency. If a review team decides to

extract data, a single reviewer might use a piloted form with a second reviewer checking data for correctness and completeness or they might code data directly from full-text articles, again with checking [25]. Extracted data should clearly address the review question. Regardless of whether the team decides to use data extraction forms or to import pdfs into NVivo they need to produce a table of descriptive study characteristics.

Data extraction should accommodate (i) descriptive details of context, participants and phenomenon of interest (Table 2), as well as (ii) qualitative data of the findings together (Table 3) with (iii) reviewer interpretations and/or comments [30]. The overall aim is to help reviewers to identify patterns in the data and to minimise repeated returns to the source study.

Table 2 - Data extraction for descriptive variables

First author (year)	Location	Study sample	Study design	Data collection method	Sampling method	Data analysis method	Quality rating (CASP checklist
Booth et al (2022)	South Yorkshire, UK	Teenage mothers	Qualitative	Focus Groups	Intensity Sampling	Thematic analysis	Low risk to rigour

Pre-existing frameworks may shape the findings section of the data extraction form for framework synthesis [10]. For example, the Cochrane rQES team categorised their data against a 'best fit' framework during extraction, allowing "a seamless progression to the 'best fit' a priori framework approach to analyse and synthesise findings"[4]. Otherwise it is relatively easy to create sets of related data fields for each theme, author observations and verbatim participant extracts for thematic synthesis or meta-ethnography [10].

A review team may reuse data from existing high-quality QESs, particularly if a complete record of extractions is available as a supplement or report appendix [25].

Table 3 - Sample of Data Extraction of Findings against a framework

Professional-Patient Relations		
Definition	*Verbatim Text Extracts*	**Author's Observations**
Impact of technology on healthcare professional and patient relationship	*We thought they would be able to manage better and take their own medicine even if they were allowed to use the medicine dispenser. Because in that way, we would be able to control whether they took their medicines (Assistant nurse).*	**As long as healthcare professionals felt that patients could be helped even by means of additional surveillance possibilities, then implementing technology was not portrayed as a problem:**
Information and consultation		
Usefulness and accessibility of information about the technology.	*Certainly this assistive technology was something that by that time I almost think that, you know, they introduced it too late, and I didn't know what it was anyway. (Carer).*	**Family carers who tried to seek information from health services reported minimal advice regarding what was available and also about how and when it could be used to help with care. Several also felt frustrated about formal technology being introduced too late to help, especially if the technology was introduced following a crisis.**

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Review management software such as EPPI-Reviewer may speed up data extraction, particularly when integrated with subsequent synthesis. The Cochrane rQES team extracted data to Google Forms and then exported data to Excel spreadsheets for subsequent manipulation [4]. Yet another option is coding full-texts within NVivo [30]; the Cochrane rapid review team suggest that it is more effective to design extraction forms within the software package as they encountered formatting difficulties when Word forms are imported [4]. However, many teams do not extract data at all, coding each pdf either inductively or deductively from within the NVivo package. Whatever method of data extraction is chosen it should accommodate descriptive study details (first author, publication year, country where the research was conducted, study objectives, study design or analytic approach, study setting, sample size, inclusion criteria, and data collection method(s) etc) and descriptive participant details (age range in years, gender distribution, and type of intervention) [6] as well as the qualitative data of the findings. A team may achieve efficiencies by combining extraction of study details with quality assessment [6]. Ideally, data extraction should protect against the need to revisit the source articles [6].

ASSESSMENT OF METHODOLOGICAL LIMITATIONS

16. In the absence of validated risk of bias tools for qualitative studies, choose a tool according to CQIMG guidance together with expediency.

Assessment of methodological limitations is one of several strategies used to establish trustworthiness [31] within a QES.

Table 4 – Trustworthiness [31] - indicators of quality within a qualitative evidence synthesis

Indicator	How operationalised within a QES
Credibility	through formal assessment of methodological limitations (excluding Applicability – see Transferability) using checklists[32]
Transferability	through analysis of contexts (cp. GRADE-CERQual Relevance)[18]
Dependability	linked to richness [14] (cp. GRADE-CERQual Adequacy)[24]
Confirmability	looking for patterns within and across multiple included studies
Reflexivity	prospective at start of review, retrospective on completion [33] (See EPOC Protocol template)[34]

Given the lack of consensus on tools for assessing methodological limitations of qualitative research it is important to consider *why* quality assessment is being conducted. Studies considered 'low quality' due to methodological flaws may provide valuable insights [17]. Assessment of methodological limitations may involve use of a checklist such as the CASP tool [35]. As a minimum, a structured, standardized approach facilitated by checklists can ensure that reviewers engage with, and better understand, "the methodological strengths

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and limitations of primary studies and how these limitations play out at the level of review findings" [9].

The Cochrane EPOC group has adapted the CASP Qualitative checklist for use with its own QES. This approach was used by the Cochrane rQES team [4]. Completion of the CASP checklist for qualitative studies may prove relatively rapid but may encourage superficial tick-box responses.

Table 2 - Assessment of methodological limitations (Cochrane EPOC tool)

Study ID	**Context[1]**	**Sampling strategy[2]**	**Data collection[3]**	**Data analysis[4]**	**Findings[5]**	**Researcher reflexivity[6]**	**Ethical issues[7]**	**Overall assessment[8]**
Booth (2011)	Y	Y	Unclear	Unclear	Y	N	N	Major Concerns
Campbell (2015)	Y	Y	Y	Y	Y	N	Y	Minor Concerns
Houghton (2020)	Y	Unclear	Y	Y	Y	N	Y	Moderate Concerns
Noyes (2010)	Y	Y	Y	Unclear	Y	N	Y	Moderate Concerns
Sommer (2018)	Y	Y	Y	Unclear	Unclear	N	Y	Moderate Concerns

Items

1. Was the context described?
2. Was the sampling strategy appropriate and described?
3. Was the data collection strategy appropriate and described?
4. Was the data analysis appropriate and described?
5. Were the findings supported by evidence?
6. Is there evidence of researcher reflexivity?
7. Have ethical issues been taken into consideration?
8. Overall assessment of methodological limitations

Where the emphasis focuses on reporting study quality rather than formally assessing methodological limitations a team could use a more limited tool, such as the Quality of Reporting Tool (QuART) [17]. So Health Improvement Scotland guidance [9] and CADTH experience [6] suggests that a team could avoid judgements on study quality and simply present verbatim detail of methods in a structured format using the QUART tool, allowing the reader to form their own verdicts. To support the GRADE-CERQual assessment, the team

should focus on threats to particular types of findings rather than globally at an individual study level [32].

Another approach to methodological limitations is to consider six domains that impact on the rigour of a qualitative study; the setting, the participants, the research team, appropriateness of methodology, the data and the phenomenon. Rather than complete questions from an itemised checklist a review team could reflect on methodological limitations associated with each "threat". Box 1 offers possible areas of reflection for each domain without prescribing specific issues for consideration.

Box 1- Issues for reflection associated with each methodological domain

Setting – privacy, comfort of participant with surroundings
Participants – how selected, credentials in relation to the phenomenon, whether sufficient to reflect diversity of potential viewpoints
Research team – reflexivity, positionality in relation to the phenomenon, conflicts of interest
Appropriateness of methodology – appropriateness to review question, appropriateness to setting, appropriateness to participants, appropriateness to phenomenon
Data – reliability of data collection, reliability of data analysis and interpretation
Phenomenon – sensitivities, whether controversial

Two external threats to rigour relate to the positionality of the review team (reflexivity) and the potential for dissemination bias. The Cochrane EPOC group acknowledges the value of reflexivity – documented upon initiation of the QES project and later, following analysis and interpretation of QES findings [13 33]. Publication bias within qualitative research remains imperfectly understood [36-39] but a team can reflect on the implications of searching a limited number and type of sources compared with a non-rapid systematic review and suggest how these decisions might impact on the inclusion or exclusion of different types of publication and data [36].

17. Use a single reviewer to assess methodological limitations, with verification of judgments (and support statements) by a second reviewer.

A single experienced qualitative researcher may assess methodological limitations, verifying judgements against a second reviewer [25]. The Cochrane rQES team used independent appraisal by two team members but reflect that single reviewer assessment and verification would probably have sufficed [4 20]. Assessment is often expected by the commissioners (9), by the practical need to populate the GRADE-CERQual component of methodological

limitations [32] or the aspiration to subsequently publish the rQES output. Only three of thirteen published examples omitted quality assessment with most using the CASP instrument [15].

SYNTHESIS

18. Favour descriptive thematic synthesis or framework synthesis, except when theory generation (meta-ethnography or analytical thematic synthesis) is a priority.

The Cochrane QIMG endorses three types of synthesis; thematic synthesis, framework synthesis and meta-ethnography [40 41]. Of these, thematic and framework synthesis are commonly considered rapid approaches to qualitative synthesis [10 41]. Published rQES employ descriptive approaches to synthesis, such as thematic synthesis, more frequently than interpretive approaches, such as meta-ethnography [15]. Health Improvement Scotland has proposed a common framework to underpin all their rapid QES [9]. "Rapid best fit synthesis" has similarly been proposed [42]. The Cochrane rQES team utilised a variant of "best fit" framework synthesis, favouring its pragmatism [4]. Using a framework means that reviewers can independently code against the different domains of the framework, supported by online discussions to achieve consistency and reduce overlap in findings [4]. "Contemporaneous critical peer review" is essential to success of the method, strengthening the coherence and relevance of the rQES [4]. Even rQES that are largely the work of a single reviewer require a consultative discussion with a second reviewer to probe emergent themes and seek alternative configurations and explanations [6 9].

Table 5 Summary of Strengths and Weaknesses of different synthesis methods

Method of Synthesis	Strengths	Weaknesses
Thematic synthesis	Most accessible form of synthesis. Clear approach, suitable with 'thin' data to produce descriptive themes and with 'thicker' data to develop descriptive themes in to more in-depth analytic themes. Themes are then integrated within the quantitative synthesis.	Limited interpretive 'power' and risks over-simplistic use and thus not truly informing decision making such as guidelines. Complex synthesis process requires experienced team. Theoretical findings may combine empirical evidence, expert opinion and conjecture to form hypotheses. Work needed on applying GRADE CERQual to theoretical findings. Unclear how higher-level findings translate into actionable points.
Framework synthesis	Framework approach accommodates complexity for reviews of complex interventions, including representation of theory. Framework offers clear mechanism to integrate qualitative and quantitative evidence in an aggregative way. Works well when broad agreement about the nature of interventions and their desired impacts.	Requires identification, selection and justification of framework. A review team may only identify that a framework is inappropriate once extraction/synthesis is underway. Risk of simplistically forcing data into a framework for expediency.
Meta-ethnography	Primarily interpretive synthesis method leading to creation of descriptive as well as new high order constructs. Descriptive and theoretical findings can	Complex methodology and synthesis process requiring highly experienced team. Can take more time and resources than other methodologies.

	help inform decision making such as guidelines. Explicit reporting standards (eMERGe) have been developed [43].	Theoretical findings may combine empirical evidence, expert opinion and conjecture to form hypotheses. May not satisfy requirements for an audit trail (although eMERGE reporting guidelines help overcome this [43]. More work needed on how to apply GRADE-CERQual to theoretical findings. Unclear how higher-level findings translate into actionable points.
Meta-aggregation	Identifies meanings from qualitative studies from different methodologies and further abstracts those meanings into categories that are then synthesized. Process is not linear but iterative and interpretive, producing statements that are useful for action and therefore for evidence-based practice.	Mainly relies on themes identified from primary studies. Some concern about limited interpretive power. Some criticism for disregarding outlying results and context-specific findings, potentially resulting in broad generalizations

Alternatively meta-aggregation, avoids reinterpretation of included studies but seeks to accurately and reliably present findings from the original authors as extracted from included studies [16 44]. However, expertise in meta-aggregation is concentrated within the JBI Network. The RETREAT framework offers guidance on when individual types of synthesis are considered suitable or not [16].

19. Consider whether a conceptual model, theory or framework offers a rapid way to organise/code/interpret/present findings.

A team should consider whether to use a framework as a lens or scaffold with which to explore extracted data. Conceptual frameworks may (i) appear (or be cited) in studies that are included in the rapid QES; (ii) they may appear (or be cited) in papers in the reference management database that have been excluded (for example, editorials, theoretical contributions or discussion pieces, (iii) they may be included in reviews on the topic [45 46].

Methods exist for supplementary searching for models, theories or frameworks [45]. The best available models or frameworks may be specific to the phenomenon of interest or may be generic frameworks e.g. Theory of Planned Behaviour. For example, the Cochrane rQES used the 'Theoretical Model to Explain Self-Protection Behaviour at Work', a generic model, subsequently ‘validated’ by use within the context of infection control [20].

20. Target GRADE-CERQual assessments at findings most critical to decision-making. Additional reviewers could verify all, or a sample of, assessments. Consider reusing GRADE-CERQual assessments if findings are relevant and of demonstrable high quality.

Because rapid reviews often seek to support decision-making a review team typically uses GRADE-CERQual to grade confidence in the evidence [47]. Typically assessments are

performed by a single reviewer, verifying all judgements and rationales using a second reviewer [25]. The Cochrane rQES team members applied GRADE-CERQual to domains for which they had extracted data before completing a final consensual assessment [4 20]. The team found GRADE-CERQual processes time-consuming, supporting a need to develop rapid approaches to grading confidence in qualitative findings.

REPORTING AND RECORD MANAGEMENT

21. Use review management software or qualitative analysis management software to streamline the process.

Technology for rapid review processes receives relatively little coverage [15]. Teams must trade-off gains from accelerated processes against the cognitive load of having to acquire new skills and familiarity with the technology. Frequent use of, and familiarity with, software, apps and tools makes them easier to use when under time pressures. Very few technologies relate specifically to rQES but citation chasers, templates and forms can be harnessed for all types of rapid review. Importantly, a review management package such as Covidence, Rayyan or Eppi-Reviewer may come into its own, not simply for its functionality but also for its file organisation and management. It is also useful to create numbered folders (e.g. 00 Protocol, 01 Searching, 02 Selection) to standardise file management for every project.

The need to identify actionable findings often underpins rapid reviews. The Cochrane rQES team worked with the Cochrane EPOC group to develop implications for practice [4]. This required production of an evidence summary and critical reading of this by a panel representing target audiences. The Cochrane team utilised an infographic to communicate their findings and integrated their urgent content within a regular webinar series hosted by Evidence Synthesis Ireland. Non-English language versions were produced as well as a podcast. Given the important role of commissioners and users in specifying an rQES, further development of knowledge translation mechanisms is integral to the rapid rQES process [9].

Reporting requirements do not necessarily differ between non-rapid and rapid versions of QES. Generally speaking more attention should be paid in an rQES to description of methodology and, more importantly, the implications for the synthesis. Reporting standards such as the meta-ethnography reporting guidance (eMERGe) [43] and the Enhancing transparency in reporting the synthesis of qualitative research (ENTREQ) statement [48] apply equally to rQES. It is not yet clear how the planned PRISMA extension for Rapid Reviews will impact upon rQES. A particularly important consideration is the enhanced need to report limitations, either the consequences of fast-tracking or streamlining or of omitting processes all together. A review team should reflect, in turn, on each of the main review processes

(such as identification, screening, eligibility etc) and analysis and consider where they have had to compromise on methods and/or reduce confidence in the certainty of the evidence. This should also inform team observations on reflexivity [33 34].

CONCLUSION

As with rapid effectiveness reviews many of the techniques used by rQES are adapted from the full version of the review methodology. Time economies come from the efficient team working of experienced QES teams who have honed their procedures within the standard use of evidence synthesis. Sidestepping quality procedures, such as omitting peer review of search strategies or double screening at title and abstract or full-text, carries implications for the quality of the final review product. Re-use of data from existing reviews surrenders control of an important part of the data acquisition process. However, all the above are potentially justified when providing timely insights into the experience of those receiving or delivering health services. The key is not only to document the adaptations or deviations made but also to provide a robust defence for the actions taken and a thoughtful consideration of how these impact on the final review product.

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