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## **Abstract**

### *Background and objectives:*

The last decade has witnessed increased recognition of the value of literature reviews for advancing understanding and decision-making. This has been accompanied by an expansion in the range of methodological approaches and types of review. However, there remains uncertainty over definitions and search requirements beyond those for the “traditional” systematic review. This study aims to characterise health-related reviews by type and to provide recommendations on appropriate methods of information retrieval based on the available guidance.

### *Methods:*

A list of review types was generated from published typologies and categorised into “families” based on their common features. Guidance on information retrieval for each review type was identified by searching PubMed, MEDLINE and Google Scholar; supplemented by scrutinising websites of review-producing organisations.

### *Results:*

48 review types were identified and categorised into seven families. Published guidance reveals increasing specification of methods for information retrieval; however, much of it remains generic with many review types lacking explicit requirements for the identification of evidence.

### *Conclusions:*

Defining review types and utilising appropriate search methods remains challenging. By familiarising themselves with a range of review methodologies and associated search methods, information specialists will be better equipped to select suitable approaches for future projects.

**Keywords:** information retrieval; information science; literature searching; overview; search strategies; typology

## **Background**

Reviews of literature have featured within scholarly work for almost as long as academia has existed. Taking stock of what has been written and seeking to position subsequent work in relation to what has gone before is considered essential, irrespective of discipline or research tradition. More recently, emphasis has shifted to a more pragmatic function of literature reviews - namely, their role in knowledge translation and changing professional and organisational practice. As a consequence, the traditional role of reviews in mapping research activity and consolidating existing knowledge has been supplemented by an instrumental function within evidence based decision-making.

This wider remit for literature reviews holds numerous implications for the form and function of review products. As reviews have assimilated diverse roles and purposes in teaching, research and practice they have adopted a greater array of types, often accompanied by novel, but not necessarily mutually-exclusive, labels (Moher, Stewart, & Shekelle, 2015). A further trend can be detected in the move to greater systematicity - the influence of the systematic review model has impacted on other forms of literature review requiring that they be systematic in procedures, explicit in describing methods and, to the extent possible, reproducible to facilitate consolidation of knowledge (Booth, Sutton, & Papaioannou, 2016).

Within healthcare a defining moment came when Mulrow (1987) critiqued the variable quality of the traditional medical review; at the time considered a staple of medical education and practice. In response, systematic review methodology offered a more auditable and reproducible template and the influence of this model on literature searching, either implicitly or explicitly, is now detected across multiple review types. In some cases, deviations from the systematic review template become a distinguishing characteristic, as with “rapid reviews”. In yet other instances, the systematic review search method is uneasily grafted onto other methodologies; for example, meta-ethnography and realist synthesis were never intended for systematic searching and yet, particularly within health research, the quest for a comprehensive approach has overridden opportunistic or purposive methods of sampling.

We contend, here and elsewhere, that all review types should be “systematic”; in the sense that all research is expected to follow some “system” of inquiry (Booth et al., 2016). This is quite different, however, from stating that all reviews should be “systematic reviews”. Systematic reviews follow procedures that are designed to minimise bias; in the context of interpretive review types the accompanying narrative may overtly advance a particular personal, disciplinary or organisational viewpoint. The latter is not inherently “biased” provided that the reader is offered sufficient detail on how those decisions were made, how the underpinning evidence was derived and, preferably, any limitations arising from such choices. All reviews, quantitative or qualitative, benefit from reviewers and review teams being reflexive on the implications of their own relationship to the review findings. This recognised feature of primary qualitative research is poorly interpreted within quantitative reviews as referring exclusively to financial interest, sponsorship or formal organisational ties.

### **Objective**

The objective of this study is to characterise existing review types by drawing upon current guidance and typologies, with a particular emphasis on requirements for information retrieval.

## Method

The team started by generating a list of review types from previously published typologies and compendia (defined as collections including five or more review types). The authors had previously compiled the initial list of typologies/compendia in their role as methodological experts. They use regular citation searching and alerts to document review types and typologies, used in their research, teaching and scholarship, and interact within several academic groups that keep aware of new and emerging review types. Fifteen typologies were used as source documents for identifying review types (see Table 1). Having compiled an initial list of review types from typologies/compendia the team supplemented this list with additional review types from their experience and reading.

Identified review types were included in our review according to the following criteria:

- 1) is included in at least one health reviews typology OR
- 2) has at least one methodological paper/worked example OR
- 3) has at least ten examples indexed on PubMed (excluding protocols)

The included review types were then categorised into “families” relating to commonality of review purpose and key characteristics. The key characteristics included search requirements where these were available.

To identify available guidance on information retrieval for the included review types, multiple search methods were employed:

1. Searching and browsing the websites of known review-producing organisations for current guidance. For example; Cochrane, Campbell Collaboration, Centre for Reviews and Dissemination (University of York), The Joanna Briggs Institute (The University of Adelaide). See Table 2 for a complete list.
2. Searching PubMed using the Systematic Review Methods Filter (The PubMed Health Team, 2015) combined with names of known review types. For example: `sysrev_methods[sb]` and `scoping review`
3. Where methods 1 & 2 did not retrieve relevant guidance, by title searching for review types on PubMed, MEDLINE (via Ovid) and Google Scholar.

Types of guidance were classified as either a) official guidance, b) methodological advice, c) current practice. Preference was given to identifying official guidance. Where official guidance was identified, searching ceased for that review type. If official guidance was not identified, methodological advice was sought. Finally, in the absence of methodological advice, the team searched for current practice. The criteria for classifying types of guidance were as follows:

- a) official guidance - produced by a recognised organisation which either generates or commissions reviews.
- b) methodological advice - peer-reviewed publications by authors with experience of conducting reviews.
- c) current practice - case studies, conference presentations, or online resources (where these contain a description of search methods).

From all the guidance identified, data extracted were extracted (where available) relating to overall search approach, types of literature required, evidence identification methods, and guidance type. Where multiple examples of guidance were identified, we used professional judgement to collate recommendations, aiming for coherence over complexity. When extracting the data on evidence identification, we categorised the requirements into “expected” and “discretionary”, Expected was defined as the minimum requirement for the review type, discretionary as the methods which may be applied if appropriate to the topic, and time and resources allow. Where no guidance was identified, we used our knowledge and experience as methodologists to populate the evidence identification section of Table 3. Where multiple review names applied to a single type of review, we discussed, and came to a consensus on, our preferred label. In these cases, synonyms for the review type are listed under “also known as” in our data extraction table.

## **Results**

48 distinct review types were identified. These review types were categorised into seven broad review “families”: traditional reviews, systematic reviews, review of reviews, rapid reviews, qualitative reviews, mixed method reviews, purpose-specific reviews. Definitions for each review type can be found in Table 4. Full data extraction for each review type can be found in Table 3, and summarised narratively below.

### ***Traditional Reviews Family***

Generally this review family uses a purposive sampling approach, although occasionally the influence of systematic reviews now requires that traditional reviews, such as the narrative review, aim to be comprehensive in methods and reach. Purposive approaches may determine the type of literature required (for example a critical review focuses on theory and empirical research) or time period (such as in a state-of-the-art review which focuses on the most current literature). All traditional reviews employ bibliographic database searching, however they are not always explicit in their methods. In general there is a move to be more systematic in traditional review types, with transparent reporting increasingly expected (Byrne, 2016). Typically, bibliographic database searching is the staple approach for traditional reviews but narrative summaries and state-of-the-art reviews extend to include searching for grey literature, particularly where policy documents are relevant to the scope of the review. An integrative review, which focuses on research into practice, is likely to include searching of research registries to identify prospective or ongoing research. Reference list checking is typically suggested as a discretionary search method, with some review types also employing hand-searching and/or contact with experts. Review types that are rapid in nature, for example narrative summary, may abbreviate search methods due to their time-intensivity, therefore discretionary search methods may be excluded. Formal search methods guidance for traditional reviews was not identified, however searching is often covered within wider journal articles describing the review type (Gasparyan, Ayvazyan, Blackmore & Kitas, 2011; Khanghura, Konnyu, Cushman, Grimshaw & Moher, 2012; Whitemore & Knaf, 2005).

### ***Systematic Reviews Family***

With the exception of qualitative systematic reviews, which appear within a separate “family”, all review types in the systematic reviews family employ a comprehensive search approach as a defining feature. Systematic reviews often focus on particular study types, which may be either a general category such as observational studies or one or more specific study designs, such as economic evaluations. The included study type is often reflected in the name of the review. Bibliographic database searching is essential, usually across multiple sources, but definitely employing more than one database. Minimum standards are often determined in the guidance documentation for the review type. Specialist sources exist as resources to search for some review types, but these are not always maintained, for example NHS Economic Evaluation Database (EED) which is a recommended source for reviews of economic evaluations (Briscoe, Cooper, C, Glanville and Lefebvre 2017). Grey literature should be included, but guidance is disparate. Some review types specifically name sources to search, whereas others allude to “grey literature searching” in a general sense. Conference abstracts and research protocols are often noted as sources of evidence in the search methods of a review in the systematic family, not necessarily for inclusion but, typically, as a pointer to potential

includable studies. Recommended supplementary search methods include hand searching, reference list checking, citation searching, and contact with experts (Cooper, Booth, Britten, & Garside, 2017; Cooper, Lovell, Husk, Booth, & Garside, 2017). Recent emphasis highlights the potential role of web searching (Briscoe, 2015; Briscoe, 2017; Stansfield, Dickson, & Bangpan, 2016) and systematic approaches to snowballing have emerged from other disciplines (Wohlin, 2014). Formal guidance is established for search methods for many systematic review types, originating from collaboration of information specialists within organisations such as Cochrane, Campbell Collaboration, and Health Technology Assessment International. Reporting standards and guidance are also well developed for the systematic review family type, for example via the work of PRISMA (Moher, Liberati, Tetzlaff, & Altman, 2009).

### ***Review of Reviews Family***

The review of reviews family is unique in that it focuses on one study type - prioritising systematic reviews or evidence syntheses rather than primary studies. A comprehensive approach is used, and the guidance on search sources and techniques is consistent: focus on databases specifically indexing systematic reviews (such as the Cochrane Database of Systematic Reviews) and/or use systematic review filters to search bibliographic databases. Grey literature is recommended, including searching PROSPERO for prospective reviews. Various discretionary methods may be employed, including reference list checking which was the most commonly mentioned. Generally, reviews of reviews follow the same methodological and reporting standards as systematic reviews, and there is a definite overlap with the previous family type.

We were unable to identify any formal searching guidance, but information specialists are contributing to methods research and disseminating via publications and conference presentations, for example Wright and Walwyn (2016) on overviews, and Golder and Wright (2016) on umbrella reviews.

### ***Rapid Reviews Family***

As increasing numbers of papers are published under the “rapid” banner (Moher et al, 2015), the methodology has progressed to a point where reviews may be grouped according to how they have abbreviated or otherwise deviated from conventional systematic review methods, locating them within one of the specific types below. All rapid reviews should involve detailed negotiation between the review team and the client/customer regarding the scope and methods to establish how they will be delivered within the time available; this negotiation is the defining feature of this family. For the review

to be useful, any modifications to the process and consequent limitations must be explicitly declared, perhaps even at more length than in a conventional systematic review.

While some types of rapid review may abbreviate the search process, for others the time savings are made elsewhere in the process, e.g. through the removal or simplification of the appraisal, synthesis or analysis stages. Reviews where a team has decided to streamline the search process often employ a simple strategy with limited iterations and minimal validation; or search a limited number of databases; or restrict the search to secondary sources (existing reviews).

Although certain product types (e.g. rapid evidence assessment) follow a predefined review methodology, the specific requirements for types of included publication are often defined by the client themselves (for example a preference for secondary sources or recent grey literature over peer-reviewed primary studies). Certain review types (e.g. the rapid realist review) may be purposive and opportunistic in their approach to sampling, drawing on expert advice or readily available local documents as a basis for theories, which are then tested and validated through targeted searches until evidence saturation is reached.

In essence, the rapid review family offers a flexible template, within which different types of evidence and different approaches to identifying them may be accommodated. The defining feature is the dialogue between client and review team.

### ***Qualitative Systematic Reviews Family***

When compared to the systematic review of quantitative research, the qualitative systematic review has a far less distant and extensive pedigree (Harris et al, 2017). Nevertheless, the richness of qualitative research traditions and the diverse positions adopted by qualitative researchers have resulted in a rapid proliferation, and potentially bewildering variety, of review types (Booth et al, 2016). Labels for review types may invoke the generic process of reviewing qualitative studies (e.g. qualitative meta-synthesis or qualitative evidence synthesis); relate to the specific synthesis method used (e.g. thematic synthesis or framework synthesis) or, perhaps most commonly, attribute the synthesis process to the entire review output (e.g. a meta-ethnography or a critical interpretive synthesis).

When determining search approaches information specialists need to consider *whether the review is intended to be aggregative, or interpretive*. For aggregative reviews, the literature search resembles its quantitative counterpart in systematically exploring a large number of databases and supplementary

sources, contrasting with interpretive reviews where theoretical sampling may be appropriate (Booth, 2016).

The second consideration is *whether theory is expected to play an important role in the review*. If the review is intended to explore or test existing theories then a specific search for theory must be conducted alongside the search for research studies (Booth & Carroll, 2015). This is particularly necessary given the well-documented split between papers that contribute conceptually to a topic and those that research or evaluate that same topic. Specific methods have been developed to search for theory (Booth & Carroll, 2015; Booth, Wright, & Briscoe, 2018).

The third consideration is *whether differences in context are considered important in understanding the phenomenon*. Often reviews of interventions seek commonalities where studies which deviate are considered outliers which require explanation. However, it may be that in a qualitative systematic review we want to understand about any differences, as for many complex interventions patterns are considerably more complicated; an apparently similar intervention may work in some contexts but not others or the extent of effectiveness may vary according to the presence, absence or amount of a particular “ingredient” in the intervention or context. Where context is considered important the team seeks to acquire as complete a picture of the study context as they possibly can, in many cases deriving this from multiple study reports. From a definitive set of included studies the searcher uses diverse techniques; reference checking, follow up of citations, authors, and study identifiers to assemble a wider and “thicker” body of evidence.

### ***Mixed Methods Reviews Family***

Mixed methods reviews can be identified as reviews that incorporate mixed-methods primary *studies* or, more commonly, as reviews that seek to integrate mixed (quantitative and qualitative) *data*. Guidance for mixed methods reviews suggests use of a filter for retrieving mixed methods studies which has been developed but not validated (El Sherif, Pluye, Gore, Granikov, & Hong, 2016). Essentially, this filter uses keywords retrieving papers with qualitative data plus added terms relating to mixed or multiple study research approaches. Where the intention is to include all quantitative and qualitative research studies the searcher has three alternatives:

- Run filters for quantitative, qualitative and mixed-methods studies and trust that no research studies fall between the gaps.
- If there are concerns that research studies may be missed, these filters could be supplemented by generic terms to retrieve any type of research study (e.g. research, study

design, et cetera). However, this approach could result in overlap of retrieved references that require de-duplication.

- Finally searchers could simply run a topic based search without filters and then sift through all retrieved results. This last “big bang” approach may be feasible and appropriate if the review team is also interested in theoretical or other aspects (e.g. economics) of the topic.

Mixed methods reviews place a premium on combined mixed-methods papers (i.e. where both quantitative and qualitative results are reported in the same paper) and sibling papers (i.e. where a quantitative paper and a qualitative paper share the same study setting) as these offer an opportunity to triangulate findings across both types of data. As a consequence extra time spent in following up index papers (through follow up of citations, author names, project names or study identifiers) to find related papers, as formalised in the CLUSTER procedure (Booth et al, 2013), is time well spent. In certain contexts a team may map where particular clusters of papers exist and then concentrate on tapping into these rich data sources. Some mixed methods approaches, such as realist reviews, also incorporate non-study data e.g. professional journal papers, commentaries, blog sites, ephemeral materials etcetera and so require specialist retrieval strategies for each type of included material (Booth et al, 2018).

### ***Purpose-specific Reviews Family***

The purpose-specific review family is the most difficult to characterise largely because of the heterogeneity of review types and methods. All review types should be selected appropriately according to purpose; however, by “purpose-specific” we imply that the degree of tailoring required to meet a specific single purpose is such that it makes it more challenging to adapt the review type for generic use beyond that purpose. Thus, the health technology assessment (HTA) represents a multi-question systematic review, addressing multiple domains within an evidence to decision framework, that requires use of diverse systematic review search methods and multiple filters. Many HTA agencies produce their own methods manuals, largely based on generic sources such as the Cochrane Handbook (Higgins & Green, 2011) or the CRD guidelines for conducting reviews (Centre for Reviews and Dissemination, 2009). A collective website offers direction on searching for different types of questions (HTAi IRG, 2011).

Systematic methodologies exist for literature review types such as concept analysis and context analysis where overall methods are well specified but where comparatively little attention is paid to information retrieval. Scoping reviews and mapping reviews, conducted to identify either specific or general opportunities for further research, are served well by formal guidance and methodological

advice; but the terms are often confused. Our definitions (in Table 4) distinguishing the two are based on the typology published by Grant and Booth (2009).

Key to the search process is alignment between the purpose of the review, the type of studies and type of sample required, and the individual search strategies and sources required to deliver that sample. Some purpose-specific reviews originate in response to *ad hoc* project demands and subsequently become of wider application. In these cases, no methodological guidance exists and methods are based upon descriptions from available case studies. Once sufficient cases are identified then audits of published methods can document accepted practice and variation in methods, as exemplified by established methods such as realist syntheses (Berg & Nanaviti, 2016), meta-ethnographies (France et al, 2014), and qualitative evidence syntheses (Hannes & Macaitis, 2012).

## Discussion

Inevitably any attempt to classify existing review types and guidance cannot cover every single instance from a fast-moving and expanding field. Several review types did not make our final list for various reasons. For example, in the rapid reviews family the title “evidence brief” (or “briefing”) is sometimes used but, as a product rather than a process. Therefore, where labels related to a product rather than a method, for example rapid response or policy brief, these were excluded. We also acknowledge the publication of new typologies since our initial analysis, the most recent of which was published in May 2019 (Aveyard & Bradbury-Jones, 2019).

Labels are only useful when supported by sufficient consensus or authoritative guidance to remove ambiguity on methods and processes. In 2009, Grant and Booth’s published typology of 14 review types, highlighted “*frequent inconsistencies or overlaps between the descriptions of nominally different review types*” (Grant & Booth, 2009). Our attempts to define current review types reveal that this remains the case. Some review types are used interchangeably, with no notable differences between methodology and approach. Examples of this include: review of reviews/overview versus umbrella review, narrative synthesis versus narrative review, and scoping versus mapping review. We would like to propose clear distinctions between these specific types as the first step towards a more secure typology (See Table 5).

Confusion between review types may be more of an issue where recognised standards and guidance do not exist. New review types continue to appear, however recent additions were excluded from this analysis as their distinguishing characteristics may not yet have become apparent. However, we

watch with interest the development of new review types such as the hermeneutic review (Greenhalgh & Shaw, 2017), which although relatively common in the information systems literature is uncommon within health research. Similarly, the long-established Ecological Triangulation (Qualitative) has not yet had specific uptake in the health research field. The Genome Epidemiology Review or Human Genome Epidemiology Review (HuGE) has limited published examples on PubMed, with the most recent being 2013, so some relatively specific review types may fail to be adopted broadly.

“Living systematic review” was also not included as a distinct review type; currently we recommend that it is categorised as a sub-type of systematic review. None of our included typologies included this review type, however as a relatively new methodological development (Elliott, et al. 2014b) some of the typologies used pre-date this review type (n=6/15). At the time of writing, 9 examples are indexed on PubMed. We acknowledge that this review type is supported by existing methodological guidance developed by Cochrane (Living Systematic Review Network, 2017), but this is presented as interim guidance for pilot living systematic reviews, rather than as a widely adopted established methodology. Again, we watch this area with interest.

In examining information retrieval requirements, there are key areas that an overview of this type must address to be of practical use. We have collated the information on using search filters, iterative search methods, reporting standards, and the development of tools to support the systematic search process, and present this below.

The use of search filters to identify specific study types for inclusion in reviews is explored in some search methods guidance, most notably for the systematic reviews family. The Cochrane Handbook (Lefebvre et al., 2019) states that existing highly sensitive search filters to identify randomised trials should be used. The Campbell Collaboration guide to information retrieval (Kugley et al., 2016) states that the use of search filters should be considered, but notes some cautions, particularly when searching in the social sciences. It recommends that performance, including effectiveness and currency, should be assessed when choosing appropriate search filters. The ISSG search filters resource includes citations to publications that review search filter performance where available (ISSG Search Filter Resource, 2008). Search filters are a recommended method for identifying systematic reviews for reviews of reviews and umbrella reviews, again with consideration to performance. Conversely, for diagnostic systematic reviews, search filters should be avoided due to the inconsistencies in diagnostic search filter performance (de Vet, Eisinga, Riphagen, Aertgeerts, & Pewsner, 2008) and the acknowledged challenges of searching for diagnostic studies (Preston, Carroll, Gardois, Paisley, & Kaltenthaler, 2015). Search filters can also be considered for retrieving economic studies from general databases that have not been pre-filtered, such as MEDLINE and

Embase (Kaunelis & Glanville, 2017). The choice and use of methodological search filters depends on multiple factors, including performance and convenience. Information Specialists report barriers to filter use. These could be overcome by filter developers shifting to less technical information about performance, providing ratings of filters and more information available about the filter validation and provenance (Beale et al 2014).

Iterative searching as a technique is increasing in prominence particularly in the qualitative and purpose-specific review families. However, there is no commonly accepted definition (and therefore associated methodology for this technique), and some of the review types associated with this type of searching (for example framework synthesis), have yet to establish guidance. Where guidance exists, it tends to establish and justify the need for iterative searching, yet rarely describes practical steps for implementing the technique. For example, the RAMESES publication standards for meta-narrative reviews states that searching should be “*revised iteratively in the light of emerging data*” (Wong, Greenhalgh, Westhorp, Buckingham, & Pawson, 2013a). Berry-picking, as an iterative technique, is clearly defined within a seminal paper (Bates, 1989) which presents it as a new model for information retrieval. But is berry-picking synonymous with “an iterative approach”?

A key feature of systematic reviews is transparency and reproducibility. The development of reporting guidelines such as PRISMA have facilitated this (Moher et al 2009). Guidelines have been developed in other review family types, including for qualitative systematic reviews (Tong, Flemming, McInnes, Oliver, & Craig, 2012; Wong et al 2013a; Wong, Greenhalgh, Westhorp, & Buckingham, 2013b). In addition to the items relating to search and information sources included in the PRISMA (Moher et al., 2009), ENTREQ (Tong et al., 2012), EMERGE (France, 2018) and RAMESES (Wong et al., 2013a; Wong et al., 2013b), specific guidance relating to the documenting and reporting of search methodology has been proposed (Booth, 2006) but is yet to be adopted within common practice and, to date, internationally accepted reporting standards for information retrieval are lacking (Kable, Pich, & Maslin-Prothero, 2012; Niederstadt & Droste, 2010). An extension to PRISMA relating to search reporting (PRISMA-S) is in development, and a draft for consultation has been circulated (Rethlefsen, Ayala, Kirtley, Koffel, & Waffenschmidt, 2019).

Systematic reviewing has recently witnessed the development and adoption of tools and automation technologies to expedite the review process (Elliott et al., 2014a; Tsafnat et al., 2014), including at study identification stage (O'Mara-Eves, Thomas, McNaught, Miwa, Ananiadou, 2015). Guidance does not exist for most of the review families, with systematic reviews being the exception. Guidance from the Campbell Collaboration recommends considering the use of text mining tools and functions to filter search results (Kugley et al 2016). Limited case studies are being developed (Clowes 2017,

Paisley et al 2016, Shemilt et al 2014) so we monitor this area of innovation with interest to see how it translates into official guidance. Non-automated tools referenced in the guidance include the PRESS checklist (Sampson, McGowan, Lefebvre, Moher, & Grimshaw, 2008) when developing search strategies (Relevo and Balshem 2010). Relevo and Balshem (2010) also note the absence of a tool to inform when to stop searching for comparative effectiveness reviews (systematic reviews family) and that decisions must be based on the judgement of the expert searcher. Booth (2010) discusses the strengths of methods for deciding when to cease searching (“stopping rules”) in the context of health technology assessment.

Involvement of information specialists in searching to support systematic reviews is frequently recommended, with evidence that this improves the quality and reproducibility of the search and therefore contributes to a higher quality review (Koffel, 2015). The role of the information specialist in the review process continues to develop beyond the search. A recent scoping review identified 18 distinct roles for library and information professionals in the conducting of systematic reviews (Spencer & Eldredge, 2018). One of the specified roles is methodologist, specifically for the search approach, and this includes formally contributing to the writing of the review protocol and subsequent reporting of the search methods on completion of the review. In order to meet the requirements of this extended role, it is recommended that library and information professionals familiarise themselves with the ever-increasing variety of review types and associated search requirements defined by their purpose, audience and available resources. In a 2005 case study, Harris (2005) concluded that a “*deeper understanding*” of research methodologies by librarians contributed to investigators’ “*increased appreciation for their searching and organizational expertise*”. These benefits remain current, and additional advantages have emerged such as contributing to reducing avoidable waste in research, and becoming more embedded in the research team throughout the review process, not just in the initial planning and information retrieval stage (Edmunds Otter, Wright, & King, 2017). Roles such as “*systematic review consultant*” are reported in the literature, and one of the common tasks associated with this role is advising on the most appropriate review type for the research question (Foster, 2018). As new review types become established, knowledge of these and their implications for information retrieval can continue to enhance this understanding and position the expertise of the library and information professional as a review methodologist within the research team.

We acknowledge that the methodology used for this review does have limitations. We have not assessed the quality of the methodological guidance used as a basis for many of the review types and have assumed that publication and the peer review process is a marker of quality. We have also

assumed that where methodological guidance does exist, that these standards are more definitive in describing review methods than exemplar reviews of the type they are describing.

## **Conclusion**

This classification identified an increasing number of review types over the last decade. However, limited official guidance exists relating to the evidence identification requirements associated with specific review types, or indeed broader review families in some cases. We propose a consistent typology is adopted, with information specialists best placed to implement this and to advise on searching methodology as part of the review team.

## **Key Messages**

### **Implications for Policy**

- Use consistent terminology when referring to review types and review families.
- Adopt clear distinctions between review types within the same family.
- We propose a hierarchy of evidence when compiling search methods - from guidance/standards, to methodological papers to exemplar reviews.

### **Implications for Practice**

- Information Specialists should be familiar with review families & types and the associated retrieval methods to enhance their role with the review team.
- Where generic methods are not appropriate, Information Specialists should develop (and validate) specific methods for evidence identification suitable for each review type.
- Definitions of (and practical guidance on) iterative searching are required.

### **Implications for Future Research**

- Further validation of the use of automated methods to support evidence identification is required. When sufficient research has been conducted, definitive guidance should be developed.

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