

REVIEW

# A common framework of steps and criteria for prioritizing topics for evidence syntheses: a systematic review

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## Abstract

**Objective:** The objective of the study was to systematically review the literature for proposed approaches and exercises conducted to prioritize topics or questions for systematic reviews and other types of evidence syntheses in any health-related area.

**Study Design and Setting:** A systematic review. We searched Medline and CINAHL databases in addition to Cochrane website and Google Scholar. Teams of two reviewers independently screened the studies and extracted data.

**Results:** We included 31 articles reporting on 29 studies: seven proposed approaches for prioritization and 25 conducted prioritization exercises (three studies did both). The included studies addressed the following fields: clinical ( $n = 19$ ; 66%), public health ( $n = 10$ ; 34%), and health policy and systems ( $n = 8$ ; 28%), with six studies (21%) addressing more than one field. We categorized prioritization into 11 steps clustered in 3 phases (preprioritization, prioritization, and postprioritization). Twenty-eight studies (97%) involved or proposed involving stakeholders in the priority-setting process. These 28 studies referred to twelve stakeholder categories, most frequently to health care providers ( $n = 24$ ; 86%) and researchers ( $n = 21$ ; 75%). A common framework of 25 prioritization criteria was derived, clustered in 10 domains.

**Conclusion:** We identified literature that addresses different aspects of prioritizing topics or questions for evidence syntheses, including prioritization steps and criteria. The identified steps and criteria can serve as a menu of options to select from, as judged appropriate to the context. © 2019 Elsevier Inc. All rights reserved.

**Keywords:** Priority setting; Methodology; Health priority; Research prioritization; Systematic review; Evidence synthesis

## 1. Introduction

Evidence syntheses aim to provide a comprehensive and up-to-date overview of the evidence on a particular topic through searching, selecting, appraising, and compiling

findings of available studies into a coherent body of work [1,2]. Findings of evidence syntheses are considered more reliable and valid than the results of individual studies [1]. A systematic review is the most common type of evidence synthesis. It is defined as a “review of research literature using systematic, explicit, and accountable methods” [3]. Other types include rapid reviews, gap maps, overviews of systematic reviews, and scoping reviews [2,4,5]. Systematic reviews and other types of evidence syntheses are increasingly recognized as having a key role in informing the decision-making process [6,7].

Systematic reviews and other types of evidence syntheses take considerable time to complete and are labor-intensive. In addition, they represent major financial investments and thus not all possible syntheses can be performed [8,9]. The volume of published studies is constantly increasing, whereas the funds available to synthesize this

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**Ethics approval:** None was required.

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### What is new?

#### Key findings

- We identified 31 articles reporting on 29 studies focusing on prioritizing topics or questions for evidence syntheses, 28 addressing systematic reviews and one addressing scoping reviews.
- There was a wide variation across studies in the steps of prioritization and the prioritization criteria used.

#### What this adds to what was known?

- This is the first systematic review of proposed approaches and exercises conducted to prioritize topics or questions for systematic reviews and other types of evidence syntheses.
- We created a common framework of prioritization steps and criteria, which represents a step toward standardizing the terminology for prioritization and enhancing the clarity of the steps and criteria for decision-making.

#### What is the implication and what should change now?

- Individuals or groups funding or conducting systematic reviews can use the detailed lists of identified steps and criteria as a menu of options to select from, as judged appropriate to the context.

growing body of evidence are limited. Therefore, it is essential for groups or institutions funding or conducting those syntheses to work with policymakers and relevant stakeholders on prioritizing the topics or questions for evidence syntheses, particularly for systematic reviews [10].

A prioritization process can promote optimal allocation of limited resources to address the evidence synthesis topics or questions that are likely to have significant impact on knowledge, policy, or practice [11]. It can also increase the likelihood that the best available evidence informs health policy decision-making [12].

There is a growing body of literature on how best to set priorities for evidence synthesis topics [10]. For example, Nasser et al. evaluated processes and methods to prioritize topics for Cochrane reviews [13]. Others have proposed tools and approaches for prioritizing topics or questions for systematic review. For example, Akl et al. developed the SPARK tool to prioritize questions for systematic reviews in health policy and systems research [14]. Also, Cochrane has produced a general guidance on the process of prioritizing topics for systematic reviews. The steps of that process consisted of defining the scope, methods, and implementation process for priority setting [15].

Although there are a growing number of reports on the setting of priority topics for systematic reviews, we are not aware of any systematic synthesis of that body of evidence, taking into consideration the other types of evidence syntheses. Therefore, the objective of this study was to systematically review the literature for proposed approaches and exercises conducted to prioritize topics or questions for systematic reviews and other types of evidence syntheses.

## 2. Methods

Our study design consisted of a systematic review of the literature. This systematic review is one of a series of systematic reviews emerging from a preliminary scoping of the literature on priority setting for health. The methodology for the scoping review, which also guided this work, is provided in the protocol included in [Supplementary File 1](#).

### 2.1. Eligibility criteria

- **Type of studies:** We included all study designs except for editorials, commentaries, correspondences, letters to editors, news, and abstracts. We excluded evidence synthesis as a study design.
- **Scope:** We included studies describing proposed approaches for prioritizing topics or questions for systematic reviews and other types of evidence syntheses (e.g., rapid reviews, gap maps, overviews of systematic reviews, and scoping reviews) in any health-related area.

The description of the approach should be detailed enough to allow reproducibility (at least one section dedicated to that description). In addition, we included studies describing exercises conducted to prioritize topics or questions for systematic reviews and other types of evidence syntheses.

We excluded articles where the prioritization was not for the purpose of specifically informing topics or questions for systematic reviews or other types of evidence syntheses. We also excluded articles describing individual prioritization criteria (e.g., authors listed the criteria for prioritization such as burden of disease and cost but did not describe a prioritization approach or exercise). In addition, we excluded articles describing research priorities without providing sufficient details to determine what process or methodology was used (e.g., authors provided a list of priority topics without describing how they identified them).

- **Setting:** We included eligible papers irrespective of the setting (low-, middle-, or high-income countries).

### 2.2. Search strategy

We searched MEDLINE and CINAHL electronic databases from their respective dates of inception until July

2019 ([Supplementary File 2](#)). We also searched Cochrane website and Google Scholar. We developed the search strategy with the help of an information specialist. The search combined various terms for health prioritization and included both medical subject headings (MeSH terms) and free-text words. We did not restrict the search to specific languages or dates. In addition, we screened the reference lists of included articles and other potentially relevant articles.

### 2.3. Study selection

Two teams of two reviewers (R.F., A.E.H., L.B., and T.L.) screened in duplicate and independently all titles and abstracts of identified citations for potential eligibility. We retrieved the full texts for citations judged as potentially eligible by at least one of the two reviewers. Then, teams of two reviewers screened the full texts in duplicate and independently for potential eligibility. They resolved disagreements by discussion or with the help of a third reviewer (E.A.A.) when consensus could not be reached. We used a standardized and pilot-tested screening form. We also conducted calibration exercises before the screening process.

### 2.4. Data abstraction

One team of two reviewers (R.F. and A.E.H.) abstracted data from eligible studies in duplicate and independently. They used a standardized and pilot-tested data abstraction form. They resolved disagreements by discussion or with the help of a third reviewer (E.A.A.). We conducted a calibration exercise to enhance the validity of the process. [Supplementary File 3](#) includes a list of the variables abstracted from each included study.

### 2.5. Quality assessment

Given the nature of the research question and the descriptive type of the included studies, we did not undertake formal assessment of the quality or risk of bias.

### 2.6. Data synthesis

Owing to the nature of the data, we analyzed the findings in a semiquantitative way. We developed common categorizations of relevant concepts (e.g., prioritization steps, stakeholder involvement, prioritization criteria), using an iterative process of review and refinement. Throughout this process, team members with subject expertise were consulted to validate categorization decisions and discuss emerging concepts. As part of the iterative process of review and refinement, we analyzed the content of each study at least twice, once when drafting the initial categories and after we produced an advanced draft. We reported the results in both narrative and tabular formats.

The concepts we addressed in our analysis were the following:

- Method for development of the included prioritization approaches; we applied content analysis;
- Steps of prioritization; we used as a starting point the nine common themes of good practices described by Viergever et al. [16];
- Generation of initial list of topics (descriptive analysis);
- Output of the priority-setting exercises (descriptive analysis);
- Stakeholder involvement; we used as a starting point the 7Ps framework (patients and the public; providers; purchasers; payers; policymakers; product makers; and principal investigators) [17];
- Prioritization criteria; we used iterative process that included drafting an initial list of criteria by one of the researchers (R.F.) based on an initial review of the criteria reported in the included studies. Two researchers (E.A.A. and A.E.H.) verified the resulting list to improve its clarity and relevance. Then, multiple meetings were held to finalize the list of criteria through discussion and consensus and generate a common framework.

## 3. Results

### 3.1. Study selection

[Fig. 1](#) shows the study flow diagram which summarizes the selection process. Of the 28, 322 citations identified, we included 31 articles reporting on 29 studies (one article reported on three studies [18], whereas four other studies were reported in two articles each [19–26]). We excluded 1, 025 articles at the full-text screening phase (see [Supplementary File 4](#) for reasons for exclusion).

### 3.2. General characteristics

[Table 1](#) shows the general characteristics of the 29 included studies, 28 addressing prioritization for systematic reviews and one addressing scoping reviews [27] (see [Supplementary File 5](#) for details). The studies were published between 2005 and 2019 inclusive. Of the 29 studies, 7 proposed prioritization approaches and 25 conducted prioritization exercises (three studies did both [21,28,29]). The included studies addressed the following fields: clinical ( $n = 19$ ; 66%), public health ( $n = 10$ ; 34%), and health policy and systems ( $n = 8$ ; 28%). Six of the studies (21%) addressed more than one field. Most of the studies focused on prioritization at either national ( $n = 10$ ; 34%) or international ( $n = 10$ ; 34%) levels, whereas 4 studies (14%) focused on regional level and one on subnational level. The level of prioritization was not specified in 4 studies (14%). Cochrane-affiliated entities published 12 (41%) of the included studies. Funding sources of the

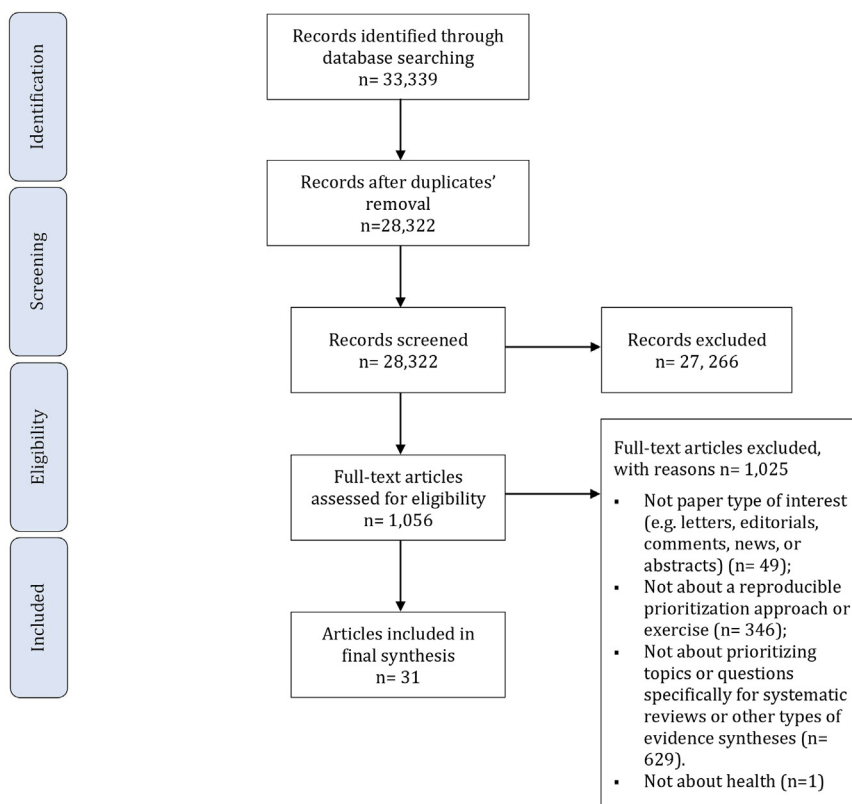


Fig. 1. Study flowchart.

included studies were either governmental ( $n = 17$ ; 59%), private not-for-profit ( $n = 14$ ; 48%), intergovernmental ( $n = 2$ ; 7%), or not reported ( $n = 4$ ; 14%).

Table 1. Characteristics of included studies

Characteristics	Description	N (%)
Lead entity	Cochrane	12 (41%)
	Non-Cochrane	17 (59%)
Focus of the paper <sup>a</sup>	Proposed approach	7 (24%)
	Conducted exercise	25 (86%)
Field <sup>a</sup>	Clinical	19 (66%)
	Health policy and systems	8 (28%)
	Public health	10 (34%)
Level of prioritization	Subnational	1 (3%)
	National	10 (34%)
	Regional	4 (14%)
	International	10 (34%)
	Not specified	4 (14%)
Funding <sup>a</sup>	Governmental	17 (59%)
	Intergovernmental	2 (7%)
	Private not for profit	14 (48%)
	Private for profit	0 (0%)
	Not reported	4 (14%)

<sup>a</sup> Percentages add up to more than 100% as more than one option applies.

In the subsequent sections, we summarize the key findings narratively and in tabular formats. We start by summarizing the methods of development of the prioritization approaches, and then we synthesize the steps of prioritization. Next, we elaborate on two of those steps for which detailed information was available, namely the generation of initial list of topics and the prioritization criteria. Also, we review stakeholder involvement in the priority-setting process. Finally, we report on the processes and outputs of the conducted prioritization exercises.

### 3.3. Methods of development of the prioritization approaches ( $N = 7$ )

Table 2 provides a description of the methods of development of the prioritization approaches. The most frequently reported step was reviewing the literature ( $n = 5$ ; 71%), whereas the least frequently reported step was the development of a user manual as part of the development process ( $n = 1$ ; 14%) [14]. Three studies (43%) followed a common pathway for development including conducting a literature review, stakeholder input (survey or interview), and pilot testing [14,28,31].

Two of the approaches covered more than half of the steps identified for the development process (Table 2): one focused on an equity lens, whereas the other focused on health policy and systems [14,31]. In the study by Nasser et al., the ‘equity lens’ for setting priorities was

**Table 2.** Methods of development of the prioritization approaches ( $N = 7$ )

Study	Development process					
	Definition of purpose and scope	Literature review	Stakeholder input	Pilot testing	Use in an actual prioritization exercise	Development of a guidance manual
Akl, 2017 [14]	✓	✓	✓	✓		✓
Handoll, 2013 [30]		✓		✓		
Jaramillo, 2013 [28]		✓	✓	✓		
Li, 2012 [22]					✓	
Nasser, 2013 [31]	✓	✓	✓	✓		
Rao, 2013 [29]		✓			✓	
Whitlock, 2010 [32]	✓	✓			✓	

developed following a workshop that presented survey results from a previous project on prioritization among Cochrane review groups; a review of the literature; and a final workshop for refinement of the equity lens [31]. In the study by Akl et al., the development of the SPARK tool for health policy and systems topics/questions consisted of item generation and reduction; testing for content and face validity; and pilot testing [14].

### 3.4. Steps of prioritization ( $N = 29$ )

We categorized prioritization into 11 steps clustered in three phases (preprioritization, prioritization, and post-prioritization) (Table 3). All of the studies incorporated at least one step from the prioritization phase. Most studies ( $n = 28$ ; 97%) incorporated at least one step from the pre-prioritization phase, and around half ( $n = 15$ ; 52%) incorporated at least one step from the postprioritization phase. Across the three phases, nine studies (31%) covered more than half of the steps involved in prioritization [14,20,24,25,29,31–33,37].

The steps of prioritization that were reported in most studies were generation of initial list of topics ( $n = 28$ ; 97%), prioritization/ranking ( $n = 28$ ; 97%), and research gap analysis ( $n = 24$ ; 83%). Among the studies that reported on generation of initial list of topics ( $n = 28$ ; 97%), the most common methods were seeking input from stakeholders ( $n = 22$ ; 79%) and reviewing existing systematic reviews ( $n = 14$ ; 50%). None of the studies built on outputs of previous priority-setting exercises (see Table 4).

Other steps of prioritization that were reported in less than half of the studies were the development of guiding/ethical principles ( $n = 9$ ; 31%), collection of technical data to inform discussions ( $n = 5$ ; 17%), use of criteria ( $n = 14$ ; 48%), refinement of priorities into answerable questions ( $n = 7$ ; 24%), dissemination and implementation of priorities ( $n = 12$ ; 41%), revision or appeal mechanism ( $n = 2$ ; 7%), and monitoring and evaluation ( $n = 4$ ; 15%).

The studies included the engagement of stakeholders across phases and in different steps of the prioritization process, with the majority involving or proposing to

involve stakeholders in the generation of topics ( $n = 21$ ; 72%) and in prioritization/ranking ( $n = 26$ ; 90%). Three studies (10%) involved or proposed involving stakeholders in the refinement of priorities into answerable questions [18,24,32], one study proposed involving stakeholders in the dissemination and implementation of priorities [32], and one study involved them in monitoring and evaluation [25].

### 3.5. Stakeholder involvement ( $N = 28$ )

All but one study involved or proposed involving stakeholders in the priority-setting process [43]. In four studies, different types of stakeholders were involved in the generation of topics and in prioritization [20,28,30,46]. In another study, a staged approach was used with gradual recruitment of participants in the different steps [33].

The 28 studies referred to twelve stakeholder types, most frequently to health care providers ( $n = 24$ ; 86%), researchers ( $n = 21$ ; 75%), public policymakers ( $n = 16$ ; 57%), and patients ( $n = 15$ ; 54%) (Table 5 and Supplementary File 6). Less than half of the studies referred to other types such as members of the public ( $n = 8$ ; 29%), caregivers ( $n = 6$ ; 21%), health system payers ( $n = 5$ ; 18%), intergovernmental agencies/research funders ( $n = 6$ ; 21%), or nongovernmental organizations ( $n = 4$ ; 14%). One study emphasized the proactive engagement of disadvantaged population in its proposed approach to priority setting [31].

Fourteen studies (50%) clearly described the process of recruiting stakeholders. These ranged from emailing authors of existing reviews to searching online databases, to organizational and personal contacts, and snowballing techniques. As for the engagement methods, all but four studies used virtual methods to engage stakeholders in the generation of topics [18,28,33,45]. One of the studies used both virtual and in-person meetings to generate topics [33]. As for prioritization, studies used workshops or face-to-face meetings ( $n = 11$ ; 39%), online surveys ( $n = 11$ ; 39%), online voting systems ( $n = 1$ ; 4%), web-based discussions, and teleconferences ( $n = 6$ ; 21%) or emails, mails, and post

**Table 3.** Steps of prioritization for evidence syntheses ( $N = 29$ )

Study	Preprioritization phase <sup>a</sup>			Prioritization phase <sup>a</sup>		
	Development of guiding/ ethical principles	Generation of initial list of topics	Collection of technical data to inform discussions	Use of established methods	Research gap analysis <sup>b</sup>	Use of criteria
N (%)	9 (31%)	28 (97%)	5 (17%)	8 (28%)	24 (83%)	14 (48%)
<b>Proposed approach</b>						
Akl, 2017 [14]		✓ <sup>d</sup>	✓		✓	✓
Handoll, 2013 [30]		✓ <sup>d</sup>			✓	✓
Nasser, 2013 [31]		✓			✓	✓
Whitlock, 2010 [32]	✓	✓ <sup>d</sup>	✓		✓	✓
<b>Conducted priority setting</b>						
Buckley, 2010, 2013 [19,20]	✓	✓ <sup>d</sup>		✓	✓	
Christie, 2018; Gray 2017 [25,26]	✓	✓ <sup>d</sup>		✓	✓	
Clavisi, 2013 [33]		✓ <sup>d</sup>			✓	✓
Crews, 2012 [34]		✓ <sup>d</sup>			✓	✓
Cumpston, 2012 [35]		✓			✓	
Degroote 2018	✓	✓ <sup>d</sup>				
Doyle, 2005 [36]		✓ <sup>d</sup>			✓	✓
Eapen, 2013 [37]	✓	✓ <sup>d</sup>	✓		✓	✓
EAPSG, 2013 [38]		✓ <sup>d</sup>				
Effa, 2019 (Western Africa hub) [18]		✓			✓	✓
Effa, 2019 Francophone hub [18]		✓			✓	
Effa, 2019 Southern Eastern hub [18]		✓ <sup>d</sup>			✓	
Gurusamy, 2019 [39]		✓ <sup>d</sup>		✓	✓	
Lindson, 2017 [40]		✓ <sup>d</sup>		✓	✓	
Meremikwu, 2011 [41]		✓ <sup>d</sup>			✓	✓
Normansell, 2015 [42]					✓	
Purgato, 2011 [43]		✓			✓	
Scott, 2018 [44]	✓	✓ <sup>d</sup>			✓	
Synnot, 2018; 2019 [23,24]	✓	✓ <sup>d</sup>	✓	✓	✓	✓
Tong 2015 [45]	✓	✓ <sup>e</sup>		✓		
Worthington, 2015 [46]		✓ <sup>d</sup>			✓	
Yu, 2015 [47]		✓		✓	✓	
<b>Proposed approach and conducted priority setting</b>						
Jaramillo, 2013 [28]		✓ <sup>d</sup>		✓	✓	✓
Li, 2010, 2012 [21,22]		✓				✓
Rao, 2013 [29]	✓	✓ <sup>d</sup>	✓			✓

<sup>a</sup> We did not include “stakeholder engagement” in any of the phases, given that the studies included the engagement of stakeholders across the different phases.

<sup>b</sup> In six studies [14,24,25,34,35,47], research gap analysis (i.e., searching for existing systematic reviews and primary studies addressing the topic) was conducted after prioritization, whereas in four studies [30,33,37,44], research gap analysis was conducted both before and after prioritization. In the remaining studies, research gap analysis was conducted before prioritization.

<sup>c</sup> The output of prioritization is not always a ranked list of priorities. Of the 25 studies that conducted prioritization exercises (as opposed to proposing approaches), 15 ranked the final list of priorities (while the remaining simply listed the priorities without ranking).

<sup>d</sup> Denotes stakeholders were engaged in the step.

<sup>e</sup> Generation and prioritization of topics were conducted in the same session.

Postprioritization phase <sup>a</sup>				
Prioritization/ranking <sup>c</sup>	Refinement of priorities into answerable questions	Dissemination and implementation of priorities	Revision or appeal mechanism	Monitoring and evaluation
28 (97%)	7 (24%)	12 (41%)	2 (7%)	4 (14%)
<b>Proposed approach</b>				
✓ <sup>d</sup>	✓			
✓		✓		
✓ <sup>d</sup>		✓	✓	✓
✓ <sup>d</sup>	✓ <sup>d</sup>	✓ <sup>d</sup>	✓	✓
<b>Conducted priority setting</b>				
✓ <sup>d</sup>		✓		✓
✓ <sup>d</sup>	✓			✓ <sup>d</sup>
✓ <sup>d</sup>	✓	✓		
✓ <sup>d</sup>	✓	✓		
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✓ <sup>d</sup>		✓		
<b>Proposed approach and conducted priority setting</b>				
✓ <sup>d</sup>				
✓ <sup>d</sup>				
✓ <sup>d</sup>		✓		

**Table 4.** Steps involved in generating initial list of topics ( $N = 28$ ; 1 study did not report on generation of initial list of topics)

Study	Literature review				Health information system	Previous priority-setting exercises	Stakeholder input	Refinement of topic/issue
	Trials	Systematic reviews	Guidelines	Other				
<b>N (%)</b>	<b>7 (25%)</b>	<b>14 (50%)</b>	<b>6 (21%)</b>	<b>3 (11%)</b>	<b>4 (14%)</b>	<b>0 (0%)</b>	<b>22 (79%)</b>	<b>16 (57%)</b>
Proposed approach								
Akl, 2017 [14]		✓					✓	
Handoll, 2013 [30]		✓					✓	✓
Nasser, 2013 [31]					✓			
Whitlock, 2010 [32]		✓					✓	
Conducted priority setting								
Buckley, 2010, 2013 [19,20]	✓	✓					✓	✓
Christie, 2018; Gray 2017 [25,26]							✓	✓
Clavisi, 2013 [33]		✓	✓				✓	✓
Crews, 2012 [34]	✓		✓		✓ <sup>a</sup>		✓	
Cumpston, 2012 [35]					✓ <sup>b</sup>			
Degroote 2018 [27]							✓	✓
Doyle, 2005 [36]		✓					✓	✓
Eapen, 2013 [37]	✓	✓	✓				✓	
EAPSG, 2013 [38]							✓	✓
Effa, 2019 (Southern Eastern hub) [18]							✓	✓
Effa, 2019 (West Africa hub) [18]					✓		✓	
Effa, 2019 (Francophone hub) [18]					✓			
Gurusamy, 2019 [39]	✓	✓	✓				✓	✓
Lindson, 2016 [40]							✓	✓
Meremikwu, 2011 [41]	✓	✓			✓		✓	✓
Purgato, 2011 [43]					✓ <sup>c</sup>			
Scott, 2018 [44]	✓	✓					✓	
Synnot, 2018; 2019							✓	
Tong, 2015 [45]							✓	✓
Worthington, 2015 [46]		✓					✓	
Yu, 2015 [47]			✓					✓
Proposed approach and conducted priority setting								
Jaramillo, 2013 [28]		✓					✓	✓
Li, 2010, 2012 [21,22]		✓	✓					✓
Rao, 2013 [29]	✓	✓					✓	✓

<sup>a</sup> Opinion and gray literature.

<sup>b</sup> Analysis of Departmental Annual Reports.

<sup>c</sup> WHO list of essential medicines.

mails ( $n = 6$ ; 21%). Eight studies (29%) used more than one method for prioritization [18,20,29,30,33,34,36,40].

### 3.6. Prioritization criteria ( $N = 14$ )

Fourteen of the 29 included studies (48%) used criteria to determine research priorities. Of these, four described how the criteria were developed and agreed on

[14,29,32,36]. Two provided further guidance on the use of the criteria: Whitlock et al., prepared issue briefs addressing program prioritization criteria, whereas Akl et al. developed a user manual with signaling questions for each criterion [14,32].

The studies included a mean of eight prioritization criteria (range: 2–22), with a total of 106 mentions of criteria. We derived from the 106 criteria a common

**Table 5.** Types of stakeholders involved ( $N = 28$ ; 1 study did not report on stakeholder involvement)

Type	N (%)
Public policymakers	16 (57%)
Health care providers	24 (86%)
Researchers	21 (75%)
Members of the public	8 (29%)
Patients and their representatives	15 (54%)
Caregivers	6 (21%)
Health system payers	5 (18%)
Health care managers	4 (14%)
Intergovernmental agencies/Research funders	6 (21%)
Product makers/Industry	2 (7%)
Press and journalists	2 (7%)
Non-governmental organizations	4 (14%)
Other	4 (14%)

framework of 25 prioritization criteria, clustered in 10 domains: (1) problem-related considerations; (2) practice considerations; (3) existing systematic reviews; (4) existing primary studies; (5) question is amenable to review; (6) urgency; (7) implementation considerations; (8) ethical and moral considerations; (9) interest of the topic at different levels; and (10) expected impact of applying evidence (Table 6 and Supplementary File 7). Two studies incorporated more than half of the criteria listed in the framework [14,32].

The most frequently reported criteria related to the health burden of a problem ( $n = 9$ ; 64%), availability of primary studies ( $n = 7$ ; 50%), expected impact of applying evidence on health outcomes ( $n = 6$ ; 43%), and implementation considerations ( $n = 6$ ; 43%). The availability of funding was described in one study as a precondition to prioritization process [14]. However, it was not included as an explicit criterion in any of the studies.

Fifteen studies (out of 29) did not use prioritization criteria [18,20,21,25,27,35,38–40,42–47]. In two of the studies, the process to rank priorities was not clear [42,43]. The remaining 13 studies used a variety of processes to rank priorities:

- Simple counting of the number of times a priority area was suggested or voted for, with the most frequently mentioned prioritized first ( $N = 2$ ) [24,40,44].
- Ranking using a 10-point scale followed by evidence mapping to identify priorities unaddressed by systematic reviews ( $N = 2$ ) [18,47].
- Generation of priority topics by stakeholders followed by evidence mapping to identify priorities unaddressed by systematic reviews ( $N = 2$ ) [18,35]. In one of the studies, additional discussions with experts following evidence mapping led to selection of two review titles for registration [18].

- Two-round online Delphi or modified Delphi surveys ( $N = 3$ ) [21,27,39].
- Face-to-face meeting using nominal group technique ( $N = 3$ ) [25,38,45].
- Combination of online ranking through internal consultation to short list questions followed by face-to-face workshop using nominal group techniques ( $N = 1$ ) [20].

### 3.7. Process and output of conducted prioritization exercises ( $N = 25$ )

Table 7 describes the process and output for the 25 studies that conducted prioritization exercises. There was a large variability in the order of the steps taken to derive the final list of priorities. Some of these studies used stepwise and deductive processes to derive the final list of output, starting with prioritization of subcategories/themes/areas followed by prioritization of topics or questions within the selected subcategories/themes/areas. Other studies categorized the topics or questions under specific domains but did not prioritize the respective domains; instead, they followed an iterative process of topic prioritization to arrive at the final list of priorities.

In terms of outputs, and of the 25 studies, four (16%) generated systematic review questions [18,20,28,38], six (24%) generated research questions (that could be addressed in RCTs and systematic reviews) [21,25,33,39,45,47], and ten (40%) generated systematic review topics (i.e., not framed as questions) [18,24,29,34–37,41,42,44]. In one of the studies, the research questions (and subsequent evidence maps) were used to inform a research forum, which identified priority themes for future research [33]. As for the remaining five studies, the outputs were ‘review titles’ ( $n = 1$ ) [46], topics for scoping review ( $n = 1$ ) [27], research themes/categories ( $n = 1$ ) [40], or unclear ( $n = 2$ ) [18,43]. The number of resultant priorities across the studies ranged from two to 85 (the output was not clear in one study). Fifteen studies (60%) ranked the list of priorities [18,20,24,25,27–29,34,36,39–41,44,45,47].

## 4. Discussion

### 4.1. Summary and interpretation of findings

We identified 31 articles reporting on 29 studies focusing on prioritizing topics or questions for evidence syntheses, 28 addressing systematic reviews and one addressing scoping reviews. Of the 29 identified studies, seven proposed approaches for prioritization and 25 conducted prioritization exercises. Three studies both reported on an approach and conducted a prioritization exercise. More than half of the included studies focused on clinical

**Table 6.** Framework for prioritization criteria ( $N = 14$ ; 15 studies did not report on prioritization criteria)

Domain	Criteria	N (%) <sup>a</sup>	Akl 2017 [14]	Clavisi, 2013 [33]	Crews, 2012 [34]	Doyle 2005 [36]	Eapen, 2013 [37]
Problem-related considerations	Health burden	9 (64%)	✓	✓	✓	✓	✓
	Economic burden	3 (21%)	✓				✓
	Burden on health care system	2 (14%)	✓				
	Equity consideration	3 (21%)			✓		
Practice considerations	Uncertainty for decision-makers/ practitioners	4 (29%)	✓	✓	✓		
	Variation in practice	3 (21%)		✓			✓
Existing systematic reviews	Availability of systematic reviews	4 (29%)	✓			✓	✓
	Quality of available systematic reviews <sup>b</sup>	4 (29%)	✓				✓
	Relevance of available systematic reviews to the topic of interest <sup>b</sup>	2 (14%)	✓				
	Currency of available systematic reviews <sup>b</sup>	4 (29%)	✓		✓ <sup>c</sup>		
Existing primary studies	Availability of primary studies	7 (50%)	✓		✓		✓
	Potential to change conclusions	4 (29%)					✓
Topic/question is amenable to review	-	1 (7%)	✓				
Urgency	-	1 (7%)				✓	
Implementation considerations	Applicability of research, capacity, resources, political will	6 (43%)	✓		✓	✓	
Ethical and moral considerations	Social responsibility, ethical concerns, moral obligations	2 (14%)	✓				
Interest of the topic to:	Health professionals	2 (14%)					
	Consumers	4 (29%)	✓				✓
	National level stakeholders	4 (29%)	✓				
	Regional/global level stakeholders	2 (14%)				✓	
	Systematic review team	2 (14%)	✓				
Expected impact of applying evidence on	Health policy and practice	4 (29%)	✓		✓		✓
	Health outcomes	6 (43%)	✓				✓
	Economic outcomes	4 (29%)	✓				
	Patient experience of care	3 (21%)	✓		✓		✓
	Equity	4 (29%)	✓				
	Health systems	1 (7%)	✓				

<sup>a</sup> The denominator reflects the total number of studies that included the use of prioritization criteria.

<sup>b</sup> Answering one of the three options did not automatically imply checking the first criterion related to 'availability of systematic reviews.'

<sup>c</sup> Stakeholders decided to prioritize topics without regard to 'feasibility.' Authors of the study subsequently carried out a feasibility assessment of the stakeholder-prioritized topics.

topics. All studies, except one, were published within the past 8 years.

There was wide variation across studies in the steps of prioritization and the prioritization criteria. In addition, the included studies appeared to be referring to the same concepts using different terms. To address these issues, we synthesized the information across the included studies by developing common categorization of relevant concepts. That resulted in 11 prioritization steps clustered in 3 phases (preprioritization, prioritization, and postprioritization), and 25 prioritization criteria clustered in 10 domains.

Compared to studies that conducted actual prioritization exercises, the proposed approaches appeared to be more comprehensive and detailed in terms of the steps of prioritizing topics for systematic reviews, stakeholder involvement, and prioritization criteria. Two proposed approaches for prioritization covered more than half of the steps involved in the development process: one focused on the equity lens, whereas the other focused on health policy and systems research [14,31].

All but one study engaged stakeholders in the priority-setting process. Given that the studies engaged stakeholders

Effa, 2019 [18]	Handoll, 2013 [30]	Jaramillo, 2013 [28]	Li 2010; 2012 [21,22]	Meremikwu, 2011 [41]	Nasser 2013 [31]	Rao 2013 [29]	Synnot 2019 [24]	Whitlock 2010 [32]
✓				✓		✓		✓
					✓			✓
			✓			✓		✓
	✓		✓					✓
	✓					✓	✓	✓
			✓			✓		✓
✓							✓	✓
								✓
	✓			✓		✓		✓
	✓			✓		✓		✓
✓		✓		✓		✓		✓
✓				✓				✓
		✓			✓			✓

in different steps of the prioritization process, we configured stakeholder engagement as a cross-cutting theme that could apply to any of the steps. Health care providers and researchers were well represented in most initiatives reviewed; however, public policymakers, funders, and affected populations (i.e., patients and their representatives, caregivers, and the general public) were far less involved. There is evidence that involving a wide range of stakeholders in the priority-setting process can increase the legitimacy, credibility, transparency, and acceptability of the identified priorities [48]. This can enhance the relevance

of the generated evidence and enhance its uptake and use in decision-making [49]. However, engaging a wide range of stakeholders raises challenges in terms of capacity, feasibility, coordination, communication, and resources [48,50,51]. Unfortunately, none of the included studies explored these issues.

Few studies addressed the issue of refining the topics into an actionable form, with only few initiatives referring to Patient Intervention Control Outcomes—formatted questions. Indeed, moving from a policy issue to a focused synthesis question with specific and well-defined elements is a

**Table 7.** Process and output of conducted prioritization exercises ( $N = 25$ )

Study	Initial list of priorities	Process (steps starting with initial list and ending with final list of priorities)	Output (final list of priorities)
Buckley, 2010, 2013 [19,20]	417 Clinical uncertainties	<ul style="list-style-type: none"> <li>→ 417 clinical uncertainties were generated from consultations</li> <li>→ Collation and refinement yielded 226 uncertainties</li> <li>→ Selection and ranking of top 10 uncertainties</li> <li>→ Collation of ranked preferences and weightings resulted in 29 prioritized uncertainties</li> <li>→ Top 10 uncertainties ranked</li> </ul>	Ranked list of 10 systematic review questions <sup>a</sup>
Christie, 2018; Gray 2017 [25,26]	159 Uncertainties	<ul style="list-style-type: none"> <li>→ 159 uncertainties were generated via an online survey and during a workshop; uncertainties were collated and categorized, and duplicates were removed</li> <li>→ 3 voting rounds: participants voted for 10 uncertainties each within professional groups (round 1), across groups (round 2), and in a plenary session (round 3; scale of 0-10)</li> <li>→ Top 28 uncertainties were reached. Research team searched for relevant and up-to-date systematic reviews addressing the 28 uncertainties (18 systematic reviews were relevant and up-to-date; none were identified as high-quality evidence)</li> </ul>	Ranked list of 28 questions (for systematic reviews and primary studies)
Clavisi, 2013 [33]	104 Clinical issues	<ul style="list-style-type: none"> <li>→ 104 clinical issues were generated as part of the mapping workshop, survey, literature search, and scoping with experts</li> <li>→ Clinical issues were transformed into 26 research questions in a standard format</li> <li>→ 14 of the 26 questions were identified as high priority through an online survey of stakeholders</li> <li>→ Priority questions and evidence maps (of priority questions) were then used to inform a research forum, which identified 12 priority themes for future research.</li> </ul>	Nonranked list of 14 clinical research questions (and nonranked list of 12 priority themes)
Crews, 2012 [34]	30 Potential review topics	<ul style="list-style-type: none"> <li>→ A preliminary list of 30 potential topics was developed within each broad domain of CKD care</li> <li>→ Addition of 16 questions by stakeholders (46 topics)</li> <li>→ 18 high-priority topics resulted from ranking</li> </ul>	Ranked list of 18 systematic review topics
Cumpston, 2012 [35]	378 Preliminary topics	<ul style="list-style-type: none"> <li>→ 378 preliminary topics were generated from interviews</li> <li>→ 85 research questions were prioritized</li> </ul>	Nonranked list of 85 systematic reviews topics
DeGroot 2018 [27]	171 Topics	<ul style="list-style-type: none"> <li>→ 171 topics were generated: 7 were preidentified topics by TDR and 3 added by the consortium, whereas 161 were additionally suggested by panelists</li> </ul>	Ranked list of 6 topics for scoping review

(Continued)

Table 7. Continued

Study	Initial list of priorities	Process (steps starting with initial list and ending with final list of priorities)	Output (final list of priorities)
		<ul style="list-style-type: none"> <li>→ Topics on the same subject were grouped together and irrelevant ones were excluded, resulting in a total of 85 topics sorted into eight categories. Panelists were invited to rate each topic in each category</li> <li>→ 6 topics with the highest ranking were identified following a series of online ranking by panelists</li> </ul>	
Doyle, 2005 [36]	31 Review topics	<ul style="list-style-type: none"> <li>→ 31 review topics were identified from gaps in 381 existing reviews and protocols, grouped under 8 broad topic areas</li> <li>→ 26 review topics were prioritized</li> </ul>	Ranked list of 26 systematic review topics <sup>b</sup>
Eapen, 2013 [37]	12 Cardiovascular disease (CVD) subcategories	<ul style="list-style-type: none"> <li>→ 12 CVD subcategories were generated from guidelines</li> <li>→ 4 subcategories were prioritized</li> <li>→ 5 topics per subcategory were nominated</li> <li>→ 31 topics in top quartile of prioritization or ranked in top 10 by at least 2 stakeholders were selected</li> <li>→ 11 topics were prioritized by stakeholders to proceed to systematic review (guided by research gap analysis)</li> </ul>	Nonranked list of 11 topics for systematic reviews
EAPSG, 2013 [38]	216 Research questions grouped into 43 themes	<ul style="list-style-type: none"> <li>→ 216 research questions were compiled from surveys, discussions with stakeholders, and ideas from conferences, grouped into 43 themes</li> <li>→ Top 10 themes were selected and ranked</li> <li>→ 30 top priority questions resulted from selection of questions under the themes</li> </ul>	Nonranked list of 30 research questions for systematic reviews
Effa, 2019 West African [18]	164 Review topics	<ul style="list-style-type: none"> <li>→ 164 review topics (that cut across 4 health categories) were formulated by stakeholder panels using the PICO tool</li> <li>→ 164 review topics were circulated to stakeholders for scoring against pre-determined criteria using an online survey tool</li> <li>→ 25 review topics with the highest scores were nominated</li> </ul>	Ranked list of 25 review topics
Effa, 2019 [18] Francophone Hub	Not clear	<ul style="list-style-type: none"> <li>→ Development of an initial list of priorities based on documented causes of mortality/morbidity from the GBD data and funder priorities</li> <li>→ Ranking of initial list of priorities by stakeholders from 1 to 10 (with 1 being least priority and 10 being highest priority)</li> <li>→ Identification of systematic reviews addressing highest ranked topics</li> </ul>	Not clear
Effa 2019 Southern- Eastern Hub [18]	30 Questions	<ul style="list-style-type: none"> <li>→ 30 questions were generated using the PICO tool. Questions were grouped into different types of questions</li> <li>→ 6 questions were short-listed based on experts opinions</li> </ul>	Nonranked list of 2 systematic review questions

(Continued)

Table 7. Continued

Study	Initial list of priorities	Process (steps starting with initial list and ending with final list of priorities)	Output (final list of priorities)
Gurusamy, 2019 [39]	428 Research questions	<ul style="list-style-type: none"> <li>→ 2 questions for which there was an evidence gap were identified after further discussion with experts and the Cochrane Kidney Transplant Review Group</li> <li>→ 428 research questions were identified through surveys (n = 209) and literature search (n = 219)</li> <li>→ 48 questions were selected on the basis of being selected by at least one patient or carer and health care professional of the steering committee; or obtaining the highest ranks among the members of the steering committee</li> <li>→ A 3-round modified Delphi panel was assembled and generated top 10 questions</li> </ul>	Ranked list of 10 research questions (for systematic reviews and clinical trials)
Jarmillo, 2013 [28]	371 Research topics	<ul style="list-style-type: none"> <li>→ 371 research topics were identified</li> <li>→ 12 research topics were prioritized</li> <li>→ 43 research questions were developed from the 12 topics</li> <li>→ Top 10 research questions were selected</li> </ul>	Ranked list of 10 systematic review questions
Li, 2010, 2012 [21,22]	45 Clinical questions	<ul style="list-style-type: none"> <li>→ 45 clinical questions were derived from practice guidelines</li> <li>→ 2-round online Delphi survey</li> <li>→ 9 clinical questions were prioritized</li> </ul>	Nonranked list of 9 clinical questions (2 require primary research and 4 require new systematic reviews) <sup>c</sup>
Lindson, 2017 [40]	681 Questions under 15 categories	<ul style="list-style-type: none"> <li>→ 681 research questions were generated via an online survey</li> <li>→ After removal of duplicates and already answered questions, 183 questions remained and were sorted into 15 categories</li> <li>→ In the second survey, participants ranked the 15 categories and the questions within the top 3 selected categories</li> <li>→ Round table discussions during a workshop resulted in the ranking of the top 8 priority categories</li> </ul>	Ranked list of 8 research categories
Meremikwu, 2011 [41]	32 Health problems	<ul style="list-style-type: none"> <li>→ 32 priority health problems were identified from national health information system and key informants, categorized into 4 groups</li> <li>→ 46 potential review topics were nominated to address gaps identified from 789 existing reviews and protocols</li> <li>→ 21 review topics were prioritized, with a final list of 18 topics (3 were addressed by systematic reviews)</li> </ul>	Ranked list of 18 systematic review topics
Normansell, 2015 [42]	8 Main themes	<ul style="list-style-type: none"> <li>→ 8 main themes were generated from surveys</li> <li>→ Research topics were developed and ranked during a workshop informed by themes</li> </ul>	Nonranked list of 10 review topics

(Continued)

Table 7. Continued

Study	Initial list of priorities	Process (steps starting with initial list and ending with final list of priorities)	Output (final list of priorities)
Purgato, 2011 [43]	WHO 3 essential drugs	<ul style="list-style-type: none"> <li>→ WHO list of essential medicines was used as a sampling frame for 3 'essential' antipsychotic drugs</li> <li>→ 839 studies for the 3 drugs were used to identify gaps</li> </ul>	Unclear
Rao, 2013 [29]	10 Broad cancer categories	<ul style="list-style-type: none"> <li>→ 10 broad cancer categories, of which 3 were prioritized</li> <li>→ 32 candidate topics were selected, refined to 29 topics</li> <li>→ 21 topics resulted from stakeholder preferences</li> <li>→ Deliberations condensed the list to 19 topics</li> <li>→ 12 highest-priority topics resulted from subsequent ranking, preinformed by research gap analysis</li> </ul>	Ranked list of 12 systematic review topics
Scott, 2018 [44]	649 Systematic review topics	<ul style="list-style-type: none"> <li>→ 649 systematic review topics were identified as lacking a Cochrane Review but having existing RCT evidence. Exclusion of topics for which the RCT evidence was limited (4 RCTs or fewer) resulted in 68 systematic review topics.</li> <li>→ Participants prioritized the 68 topics and suggested 134 additional topics (participants were allowed to suggest up to 10 additional topics (round 1)). Suggested topics where a systematic review did not exist advanced to round 2</li> <li>→ Participants were presented with the top 25 priority topics identified in round 1 and asked to tick up to 10 topics they think should be prioritized for Cochrane systematic reviews</li> <li>→ 21 high-priority systematic review topics were subsequently prioritized by participants (round 2)</li> </ul>	Ranked list of 21 systematic review topics
Synnot, 2018; 2019 [23,24]	200 Research ideas	<ul style="list-style-type: none"> <li>→ 200 research ideas were submitted by participants through an online survey</li> <li>→ Research ideas were coded and grouped into 21 priority topics (encompassing 6 themes) using inductive thematic analysis</li> <li>→ 12 priority topics under 4 themes were ranked by participants in a 1-day workshop using voting technique (5 Cochrane Reviews were selected as priorities following mapping of the evidence and application of editorial criteria)</li> </ul>	Ranked list of 12 systematic review topics (5 topics were selected to be addressed in systematic reviews)
Tong, 2015 [45]	83 Research questions corresponding to 4 CKD treatment categories	<ul style="list-style-type: none"> <li>→ 83 research questions were elicited from participants corresponding to 4 CKD treatment categories</li> <li>→ Top 10 questions per category were identified by tallying votes</li> <li>→ Top 5-ranked questions per category were identified through group discussion and ranking</li> </ul>	Ranked list of 20 research questions (for trials or systematic reviews)

(Continued)

Table 7. Continued

Study	Initial list of priorities	Process (steps starting with initial list and ending with final list of priorities)	Output (final list of priorities)
		<ul style="list-style-type: none"> <li>→ Aggregate top 5 questions per category were distilled into 20 research questions</li> <li>→ Top 20 questions were ranked</li> </ul>	
Worthington, 2015 [46]	215 Existing reviews within 8 areas of dentistry	<ul style="list-style-type: none"> <li>→ 215 existing reviews and protocols were identified within the scope of 8 areas of dentistry</li> <li>→ Top 10 titles per areas were ranked</li> <li>→ Top 15 titles per area were collated and summarized</li> <li>→ 15 titles were prioritized for new systematic reviews and 81 existing titles for update</li> </ul>	Nonranked list of 15 new systematic review titles and 81 existing titles to be updated
Yu, 2015 [47]	42 Clinical questions	<ul style="list-style-type: none"> <li>→ 42 clinical questions were derived from practice guideline</li> <li>→ 42 clinical questions were ranked</li> </ul>	Ranked list of 42 clinical questions (for systematic reviews and clinical trials)

*Abbreviations:* CKD, chronic kidney disease; GBD, global burden of disease.

<sup>a</sup> Five studies are known to have been funded, 3 in development; 5 new systematic reviews are under way, 1 is being updated; and 5 questions are under consideration by a national research commissioning body.

<sup>b</sup> Fifteen topics are reported in this study, whereas the remaining topics that make up the list of 26 are available on the website.

<sup>c</sup> The results of the ranking of the 2 rounds are reported for the 9 questions; however, the final ranking of those questions is not reported.

critical step in evidence synthesis [52]. This process ensures that the question is amenable to review and permits proper interpretation of the evidence once it has been identified and synthesized. Whether priorities are ranked or just listed is another important feature of priority setting. More than half of the included studies ranked the outputs (as opposed to simply listing them).

Less than half of the identified initiatives drew attention to the issue of implementation and follow-up. An implementation strategy can help ensure translation of the outputs of priority-setting exercises into research projects that ultimately improve the health of populations [53]. Without evidence of implementation or impact on health outcomes, it is difficult to assess the quality and relevance of research priority-setting exercises in driving changes [16].

Furthermore, only a few groups incorporated revision and appeal mechanisms to review their priority list or conducted a rigorous evaluation of the priority-setting exercises; therefore, the utility of these efforts is unknown. A process evaluation could help assess the extent to which the priorities generated have informed current systematic reviews or research funding, or the extent to which they have been adopted into the field.

#### 4.2. Comparison to other systematic reviews

Another systematic review addressed prioritization in the context of updating health decision-making tools, one of which was systematic reviews [54]. Consistent with our findings, that review reported variability and

suboptimal reporting of the methods used to develop and implement processes to prioritize updating of systematic reviews.

#### 4.3. Strengths and limitations

To our knowledge, this is the first systematic review of studies describing proposed approaches and conducted exercises to prioritize topics or questions for systematic reviews and other types of evidence syntheses. Strengths of our methodology include using rigorous and transparent process and following standard methods for reporting systematic reviews. Furthermore, the inclusion of different types of study design allowed for a more comprehensive understanding of the issue at hand. Finally, we followed an iterative process of drafting and revision to create a common framework of prioritization steps and criteria that respectively captured all steps and criteria reported by each of the 29 included studies. This represents a step toward standardizing the terminology for prioritization and enhancing the clarity of the steps and criteria for decision-making.

Although we attempted to identify all relevant priority-setting initiatives, it is possible that we could have missed on potentially relevant information, particularly those in the gray literature and specialized data sources (e.g., systematic review handbooks or organizational websites). However, we believe that our search represents a fair encapsulation of the status of the literature on priority setting for evidence syntheses. In addition, given that all but one study focused on systematic reviews, we cannot generalize the findings to other types of evidence syntheses.

Finally, given the focus on health topics, we cannot determine the applicability of the findings beyond the health sector.

#### 4.4. Implications for policy and practice

Our review findings can guide the work of researchers, funders, policymakers, and other stakeholders seeking to prioritize topics or questions to be addressed in systematic reviews. As Nasser et al. noted, there is no best practice for priority setting due to differences in context, purpose, and topic breadth of each priority setting [13]. Individuals or groups funding or conducting systematic reviews can select the process that best fits their needs. The detailed lists of identified prioritization steps and criteria can serve as a menu of options to select from, as judged appropriate to the context. Whether specific review questions or broad topics are generated as an outcome of the priority-setting process should also be determined based on the purpose and context of the priority setting.

In addition, in line with global efforts to reduce research waste and avoid duplication of research efforts [55], we suggest the inclusion of research gap analysis as a key step of prioritization. This will help assess appropriateness of conducting systematic reviews. For example, if a research question has already been answered by a systematic review, another review of the same evidence will be wasteful.

Findings can help promote evidence-informed policy-making and practice by aligning systematic review production to policy priorities and channeling limited resources to areas of highest priority. This is particularly relevant in the context of low- and middle-income countries, where the capacity for producing systematic reviews is limited and often misaligned with policy needs and priorities [56,57].

#### 4.5. Implications for research

Future research could assess the applicability of findings to other types of evidence syntheses such as rapid reviews, overviews of systematic reviews, scoping reviews, and gap maps. Considerations could be given to explore, for example, whether certain prioritization criteria are more or less relevant to specific types of evidence syntheses. Similar research is needed beyond the health sector. For example, the field of international development is one area with considerable interest in approaches to prioritize evidence syntheses on development topics, given the increased recognition of the role of evidence synthesis, particularly systematic reviews, in helping make better decisions to reach global development targets [58,59]. Further rigorous research is also required to assess effective ways of involving stakeholders in different steps of the priority-setting process and the implications on resource allocation.

More generally, there is a need for guidance for conducting priority-setting exercises and guidance for reporting their results. Future studies should also consider

evaluation of priority-setting processes including the number and type of new initiatives and research projects driven by generated priority areas and the impact of the research on informing policy, programs, or services [60].

#### CRedit authorship contribution statement

**Racha Fadlallah:** Conceptualization, Methodology, Data curation, Formal analysis, Project administration, Writing - original draft, Writing - review & editing. **Amena El-Harakeh:** Data curation, Formal analysis, Investigation, Validation, Writing - review & editing. **Lama Bou-Karroum:** Data curation, Validation, Conceptualization, Writing - review & editing. **Tamara Lotfi:** Data curation, Writing - review & editing. **Fadi El-Jardali:** Conceptualization, Writing - review & editing. **Lama Hishi:** Data curation, Writing - review & editing. **Elie A. Akl:** Conceptualization, Methodology, Resources, Supervision, Writing - original draft, Writing - review & editing.

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#### Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jclinepi.2019.12.009>.

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