







# BMJ Open Updating the critical steps of the quality implementation framework: a protocol for an umbrella review of reviews

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## ABSTRACT

**Introduction** Implementation science focuses on improving the dissemination, uptake and adoption of evidence into practice. Over the last decade, implementation science research has proliferated, particularly in healthcare and social science. The key synthesis of implementation frameworks conducted by Meyers and colleagues in 2012, and the resulting Quality Implementation Framework, has yet to be updated to incorporate this research. This protocol proposes an umbrella review of reviews (RORs) to synthesise the literature since 2012 on implementation science in the fields of healthcare and social science and provides recommendations for an updated Quality Implementation Framework.

**Methods and analysis** This ROR will be conducted and reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. Four academic databases (PubMed, Scopus, PsycINFO and Web of Science) will be used to identify peer-reviewed meta-analyses, systematic reviews and scoping reviews published in the English language since January 2012 and report on the development, application or update of one or more implementation frameworks in healthcare or social science contexts. Multiple reviewers will be involved in the screening of articles and extraction of data, and the quality of reviews will be assessed using the AMSTAR (A Measurement Tool to Assess systematic Reviews) 2. The outcome of interest is the content of implementation science frameworks reported in the included reviews. The content of these frameworks will be synthesised, aggregated and mapped to the four phases and 14 steps outlined in the original Quality Implementation Framework using both deductive and inductive analysis.

**Ethics and dissemination** Ethics approval is not required as this ROR protocol and the resulting ROR do not involve primary data collection. The protocol as well as the ROR will be disseminated in peer-reviewed journals.

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## INTRODUCTION

The field of implementation science was formally introduced some three decades ago in response to the growing demand for an evidence-based approach to medicine alongside an increasing awareness of the challenges

## STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This umbrella review of reviews (RORs) will contribute new knowledge that can be used to guide implementation efforts and clinical practice.
- ⇒ The ROR will provide an updated synthesis of scientific literature related to the critical steps and phases guiding the implementation of evidence-based practices in healthcare and social sciences.
- ⇒ This ROR will offer an updated synthesis of the content of implementation science frameworks, rather than an evaluation of their effectiveness.

in translating knowledge into real-world practice.<sup>1–3</sup> Implementation science spans research disciplines and methods and focuses on disseminating, taking up and adopting evidence for the benefit of improved practice.<sup>4</sup> As early as 1999, implementation science was formally used to evaluate public health interventions with the development of the Reach, Effectiveness, Adoption, Implementation, and Maintenance framework.<sup>5</sup> In 2005, the first comprehensive synthesis of implementation science literature was published.<sup>6</sup> This seminal work and other original contributions at that time have served as a guide for implementation efforts.

Since then, numerous publications have explored the ‘how to’ of translating research findings into real-world practice. For example, in 2008, Proctor *et al* created a conceptual model for implementation research,<sup>7</sup> comprising implementation, service and client outcomes. In 2009, Damschoder *et al* published the Consolidated Framework for Implementation Research.<sup>8</sup> Updated in 2022,<sup>9</sup> it was designed as a systematic framework to identify the barriers and facilitators of successful implementation. In 2011, Aarons *et al* published the Exploration, Preparation, Implementation, Sustainment framework focusing on the implementation of evidence-based practice.<sup>10</sup> These publications, and



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**Box 1 The four phases and 14 steps in the Quality Implementation Framework (QIF) synthesised in the original paper ‘the quality implementation framework: a synthesis of critical steps in the implementation process’ by Meyers *et al* published in 2012<sup>11</sup>**

### Phase I

- ⇒ Step 1: conducting a needs and resources assessment.
- ⇒ Step 2: conducting a fit assessment.
- ⇒ Step 3: conducting a capacity/readiness assessment.
- ⇒ Step 4: possibility for adaptation.
- ⇒ Step 5: obtaining explicit buy-in from critical stakeholders and fostering a supportive community/organisational climate.
- ⇒ Step 6: building general/organisational capacity.
- ⇒ Step 7: staff recruitment/maintenance.
- ⇒ Step 8: effective preinnovation staff training.

### Phase II

- ⇒ Step 9: creating implementation teams.
- ⇒ Step 10: developing an implementation plan.

### Phase III

- ⇒ Step 11: technical assistance/coaching/supervision.
- ⇒ Step 12: process evaluation.
- ⇒ Step 13: supportive feedback mechanism.

### Phase IV

- ⇒ Step 14: learning from experience.

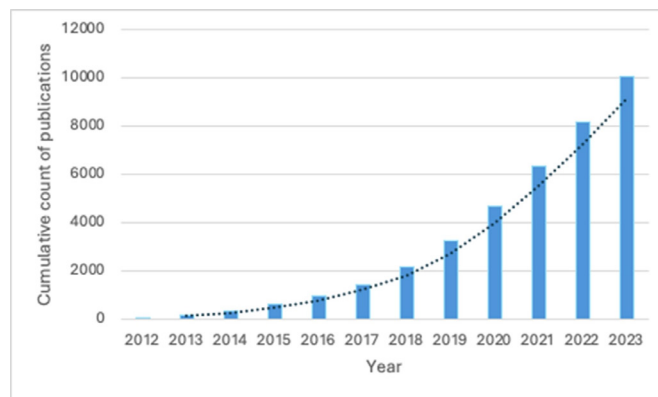
others, were brought together in 2012 by Meyers *et al* in a comprehensive synthesis of current implementation frameworks.<sup>11</sup> The synthesis was based on 25 frameworks and identified 14 critical steps within four phases for implementation that were used to construct the Quality Implementation Framework (QIF) (box 1).<sup>11</sup>

Over the last decade, implementation science research has proliferated, particularly in healthcare and social science. There is a continual need for new and improved implementation planning approaches in healthcare,<sup>12</sup> as well as a more consistent application of systematic implementation tools across certain settings, such as mental healthcare.<sup>2</sup> The key synthesis of implementation frameworks from Meyers *et al*<sup>11</sup> was published more than a decade ago, and there has been an overwhelming amount of implementation research published since that time (figure 1). Thus, an updated overview of the implementation research literature is needed, mapped to the four phases and 14 steps in QIF.<sup>11</sup> The synthesis will be conducted as an umbrella review of reviews (RORs). While implementation science is applicable to many fields, it is particularly relevant and highly researched in healthcare and social science.<sup>13</sup> Thus, our ROR will focus on the implementation science literature specific to these fields.

## Objectives

### Aims

This ROR will use the work by Meyers *et al* (2012) and the resultant QIF to conduct an updated synthesis of the



**Figure 1** Number of hits in the PubMed database by year that included the term ‘implementation science’ from 2012 to 2023.

literature on implementation science in healthcare and social science contexts.<sup>11</sup>

The specific aims of the ROR are:

- To review the implementation research literature published in the fields of healthcare or social science since 2012 and synthesise it according to the four phases and the 14 steps in the QIF.
- To summarise new knowledge on the phases and steps of the implementation process and propose recommendations for an updated QIF.
- To guide future research efforts and outline the practical implications of our findings to improve future implementation efforts.

## Research questions

- In the healthcare and social science literature published after 2012, how do implementation frameworks map to the four phases and 14 steps of the original QIF?
- Do the above frameworks outline any phases or steps that are additional to those outlined in the original QIF?
- Can the literature published since 2012 offer new knowledge and suggestions on the “how to” of implementation, which could guide future implementation efforts?

## METHODS

This protocol is being reported in accordance with the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) guidelines.<sup>14</sup>

## Eligibility criteria

The selection of review articles will be based on the criteria outlined below.

## Study design

The ROR will include peer-reviewed meta-analyses, systematic reviews and scoping reviews. Empirical articles, grey literature, protocols, editorials, commentaries, conference abstracts and conference presentations will not be considered for inclusion.

### Participants

Review articles describing implementation strategies designed for human participants will be included.

### Interventions

Review articles will be considered for inclusion if they report on the development, application or update of an implementation framework in healthcare or social science contexts. An implementation framework is defined as an overview of ideas and practices that shape the complex implementation process and focus on the 'how to' of implementation including specific strategies and procedures.<sup>11</sup> The implementation framework should describe the key steps of, and strategies for, implementation of research evidence into practice. The framework must be based on empirical research or be a theoretical or conceptual analysis of what is important (ie, the 'how to') in implementation. Review articles focusing on intervention fidelity or the intervention process rather than how the implementation framework is used will not be included.

### Comparators

Not applicable.

### Outcomes

The ROR will focus on the framework content, that is, the specific steps, phases and strategies that can be applied to operationalise 'how to' implement. The four phases and 14 steps of the QIF as outlined in Meyer *et al* (2012) will be used as a framework for the ROR.

### Timing

Review articles published from 1 January 2012 will be considered for inclusion.

### Setting

Only review articles within the healthcare or social science setting will be considered for inclusion.

### Language

Review articles written in the English language will be considered for inclusion.

### Information sources

Literature searches will be performed in the following databases: PubMed, Scopus, PsycINFO and Web of Science.

### Search strategy

A search strategy has been designed in collaboration with a librarian with expertise in conducting RORs. The search strategy developed for PubMed will be adapted to the specifications of the other three databases. The comprehensive literature search will be conducted during the first half of 2024. The search terms will include keywords derived from the work of Meyers *et al*, including key terms related to implementation AND framework AND review.

A planned search strategy developed for PubMed is described in [table 1](#).

**Table 1** PubMed search strategy for this ROR

Subject	Words included
Implementation	implementation (Title) OR determinants of implementation (Title/abstract) OR implementation science (Title/abstract) OR implementation-effectiveness (Title/abstract) OR implementation evaluation (Title/abstract) OR implementation determinant* (Title/abstract) OR Implementation outcome* (Title/abstract) OR implementation science (MeSH)
AND	
Framework	framework* (Title/abstract) OR model* (Title/abstract) OR tool* (Title/abstract) OR implementation framework* (Title/abstract) OR consolidated framework for implementation research (Title/abstract) OR framework synthesis (Title/abstract)
AND	
Review	review* (Title/abstract) OR systematic review* (Title/abstract) OR Review literature as topic (MeSH) OR Systematic reviews as topic (MeSH) OR Meta-analysis as topic (MeSH)
ROR, review of review.	

### Data management

Articles will be uploaded to the systematic review tool Covidence<sup>15</sup> for data management.

### Review article selection process

All titles and abstracts of each unique record will be double-screened against the review inclusion criteria by two independent reviewers (KH and MJ). The full texts of included review articles will be screened against the review inclusion criteria by one of three independent reviewers (KH, MJ or AGO). To ensure consistency, the first 10% of full-text records will be screened by the same three reviewers and then the remaining full-text articles will be independently screened. Any disagreement between the reviewers at any stage of the article selection process will be resolved by discussion or by including another reviewer (SPJ) if consensus cannot be met. The screening process will be tracked using a flow diagram following the PRISMA guidelines.<sup>16 17</sup> The systematic review tool Covidence<sup>15</sup> will be used for recording screening decisions.

### Data collection process

Data will be extracted following the PRISMA guidelines to ensure a consistent and structured approach.<sup>16 17</sup> The extraction will be performed by one of two independent reviewers (KH or AGO). To ensure consistency, the first 10% of the extraction will be performed by both reviewers and then the remaining extraction will be done independently by one of the two reviewers. Any disagreement between the reviewers will be resolved by

discussion or by including another reviewer (SPJ) if consensus cannot be met.

### Data items

A pilot data extraction sheet will be developed a priori. After extracting the first 10% of the data, two independent reviewers (KH and AGO) will review the extraction sheet and make necessary adjustments. All adjustments will be approved by the review team (KH, AGO and SPJ). The following data will be extracted into the data extraction sheet:

- ▶ Background information (review title, author, date, country, aim and research questions).
- ▶ Review methods (type of review, target population, inclusion criteria and exclusion criteria).
- ▶ Implementation framework details (framework name(s), primary literature area(s) examined as basis for framework(s) and content of the framework(s)).
- ▶ Content mapping of the implementation framework(s) to the four phases and 14 steps in the QIF including possible additions to QIF.

### Outcomes

The outcome of interest is framework content reported across reviews, including the steps, phases and strategies proposed within frameworks. Implementation frameworks should describe the key steps of, and strategies for, implementation of research evidence into practice.

### Methodological quality

The methodological quality of the included review articles will be evaluated independently by two reviewers (KH or AGO) using the AMSTAR 2 assessment instrument.<sup>18</sup> Any disagreement between the reviewers will be resolved by discussion or by including another reviewer (SPJ) if consensus cannot be met. The information will be used when compiling the data synthesis in relation to the quality assessment of each review article.

### Data synthesis

Descriptive statistics will be used to synthesise the background information and methods of included reviews. A deductive approach will be taken to narratively synthesise the data about implementation frameworks, in which the content of these frameworks will be mapped to the four phases and 14 steps from the QIF. This analysis will be conducted according to the procedure described by Gale *et al.*<sup>19</sup> Content that does not fit the QIF will be coded as 'Other' and will then undergo an inductive analysis to identify a potential additional QIF phase or step. If relevant, new knowledge regarding the phases and steps of the implementation process and recommendations for additional QIF phases and steps will be proposed. In addition, a strategy of implications regarding future implementation research will be proposed.

The planned start and end dates for the umbrella RORs are 1 November 2024 and 30 April 2025.

### Patient and public involvement statement

As this ROR protocol and the planned ROR describe secondary data, there will be no patient or public involvement.

### ETHICS AND DISSEMINATION

Ethics approval was not required as this ROR protocol and the resulting ROR do not involve primary data collection. The protocol and the ROR will be disseminated in peer-reviewed journals.

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**Contributors** All authors contributed to the design and structure of the protocol. KH drafted the protocol and AGO, MJ, JM, LAE, SS, LP, GF, JB and SPJ critically revised the manuscript. All authors approved the final version. KH acted as guarantor.

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