ImpResPAC

**Implementation Research
Proposal Appraisal Criteria**

A quantitative tool to appraise the conceptual and methodological quality of implementation research proposals

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ImpResPAC introduction

High-quality implementation research is fundamental to improving the adoption, implementation and sustainment of evidence-based interventions in healthcare.

Despite many similarities between what constitutes a high-quality implementation research proposal and research proposals in other scientific fields, important differences exist that need to be considered when designing and appraising the conceptual and methodological quality of implementation research proposals.

The Implementation Research Proposal Appraisal Criteria (ImpResPAC) is a comprehensive and in-depth quantitative appraisal tool to evaluate the conceptual and methodological quality of implementation research proposals in healthcare. ImpResPAC includes 10 domains, based on the **Implementation Science Research Development (ImpRes) tool** and supplementary guide which were developed to support research teams to design high-quality implementation research in healthcare.

The content and refinement of ImpResPAC was informed by an international Expert Advisory Panel (EAP), consisting of 68 experts who have made a significant contribution to the conceptual and methodological advancement of implementation science.

ImpResPAC **statistics**

The content and refinement of ImpResPAC was informed by an **Expert Advisory Panel (EAP)** consisting of **68** experts

ImpResPAC contains:

71 domain items, organised across 10 domains

370+
cumulative years

EAP experience reviewing implementation research funding proposals

730+
cumulative years

EAP expertise in implementation science

83%

of the EAP **agreed** or **strongly agreed**
ImpResPAC provides a comprehensive, transparent and fair appraisal of the conceptual and methodological quality of implementation research proposals.

79%
Appropriate

74%
Acceptable

64%
Feasible

of the EAP **agreed or strongly agreed** that ImpResPAC is appropriate/acceptable/feasible to be used by

reviewers
to appraise the conceptual and methodological quality of implementation research proposals.

91%
Appropriate

86%
Acceptable

81%
Feasible

of the EAP **agreed or strongly agreed** that ImpResPAC is appropriate/acceptable/feasible to be used by

researchers and *practitioners*
to appraise the conceptual and methodological quality of their implementation funding proposals.

83%
Appropriate

76%
Acceptable

71%
Feasible

of the EAP **agreed or strongly agreed** that ImpResPAC is appropriate/acceptable/feasible to be used by

educators
to appraise the conceptual and methodological quality of implementation research proposals submitted as part of implementation capacity building initiatives.

ImpResPAC **domains**

ImpResPAC is a comprehensive and in-depth quantitative appraisal tool to evaluate the conceptual and methodological quality of implementation research proposals in healthcare.

05

ImpResPAC contains 10 distinct, but interrelated, domains.

Each domain represents a core element of implementation research.

ImpResPAC domains are weighted equally.

Patient and public involvement and engagement

Implementation research characteristics

Implementation theories, models and frameworks

Stakeholder involvement and engagement

Implementation determinants

Economic evaluation

Implementation strategies

Unintended consequences

Implementation outcomes

Service and patient outcomes
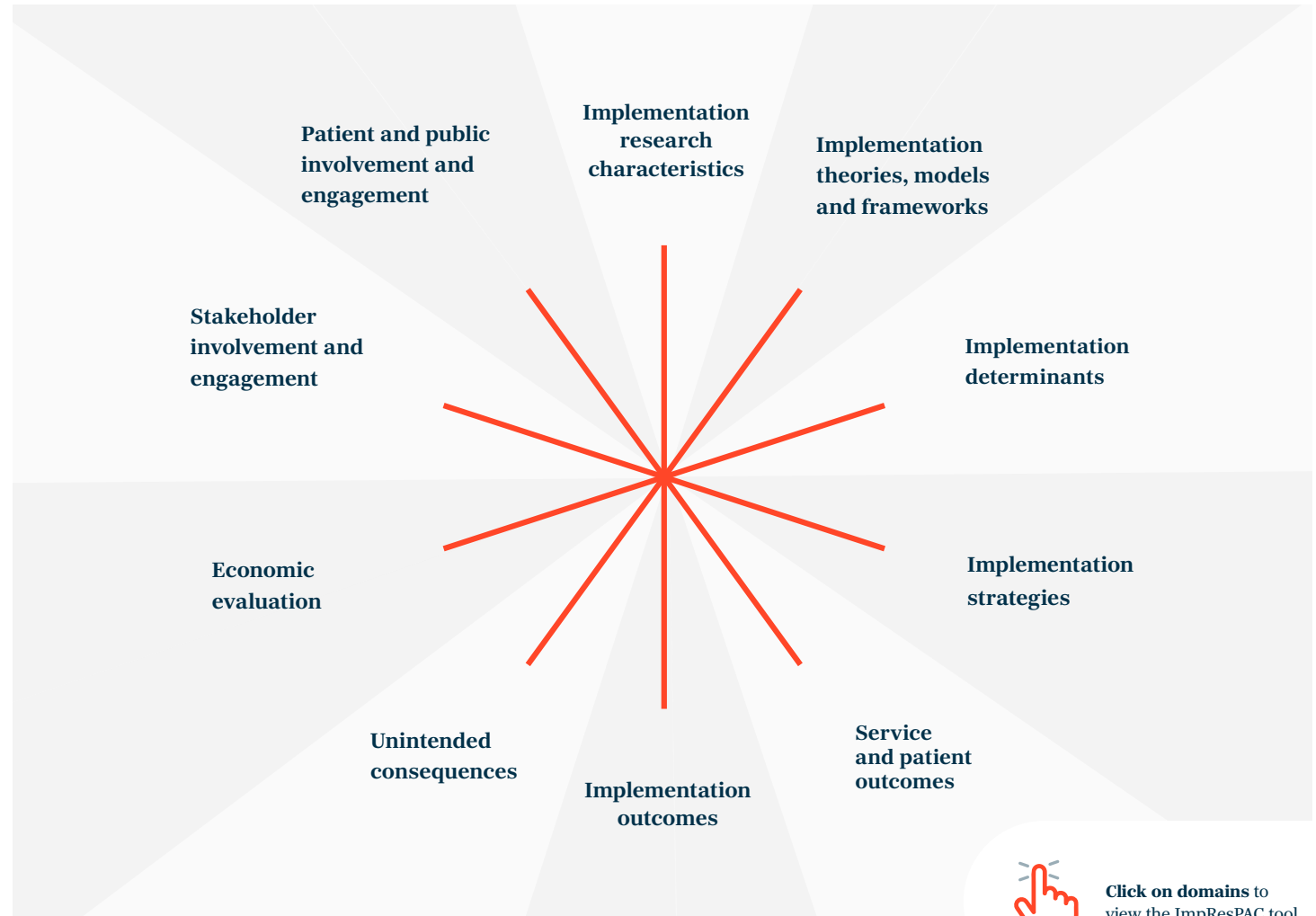
Click on domains to view the ImpResPAC tool

ImpResPAC
domain items

Each **ImpResPAC** domain contains several items. Each item is indicative of high-quality implementation research.

Example domain item from the **implementation research characteristics** domain:

The proposed study explicitly seeks to address an implementation problem; it clearly identifies and describes both the associated **quality** and/or coverage of care gap, and the **evidence-based intervention** selected to address the problem.

ImpResPAC domain items are weighted equally.

ImpResPAC
user instructions

ImpResPAC application and scoring instructions

Given the diversity and scope of implementation research, it is possible that one or more ImpResPAC domains, and all associated items, may not be applicable. Only consider the domains that are applicable to the proposed study in question. Similarly, not every ImpResPAC domain item, in applicable domains, may be applicable. Only consider the domain items applicable to the proposed study in question.

For each applicable item, consider whether the proposed study partially or fully addresses the content of the domain item. Based on the percentage of domain items that are partially or fully addressed, a score of 1-5 is assigned to each ImpResPAC domain.

1	2	3	4	5
Very Poor	**Poor**	**Fair**	**Good**	**Excellent**
Very few applicable items are partially or fully addressed (0-20%*)	Few applicable items are partially or fully addressed (21-40%*)	Some applicable items are partially or fully addressed (41-60%*)	Most applicable items are partially or fully addressed (61-80%*)	Almost all applicable items are partially or fully addressed (81-100%*)

* Please note the above suggested percentage cut-off ranges are for guidance only.

Partially versus fully addressed domain items

The distinction between 'partially' and 'fully' accounts for the fact that many domain items contain more than one element. Therefore, it is possible that research proposals may 'partially' or 'fully' address the content elements of each domain item.

Example of an ImpResPAC item containing more than one element

Proposed adaptations and modifications (above and beyond partial application), including extensions and the innovative use of chosen implementation theories, models and frameworks (TMFs), are clearly and comprehensively described, and an explanation is provided.

Research teams may address one element in the above ImpResPAC item (e.g., adaptations and modifications to TMFs are clearly and comprehensively described) but not the other (e.g., an explanation is not provided).

Note: Some ImpResPAC domain items reference specific terms, tools and methods that are indicative of excellent conceptual and methodological elements of implementation research. It is possible that a proposal fully addresses an ImpResPAC domain item without explicitly referring to the terms, tools and methods referenced in ImpResPAC. In such cases, we recommend that ImpResPAC users use their judgement to determine whether a proposal fulfils the criteria.

Calculating the global ImpResPAC score
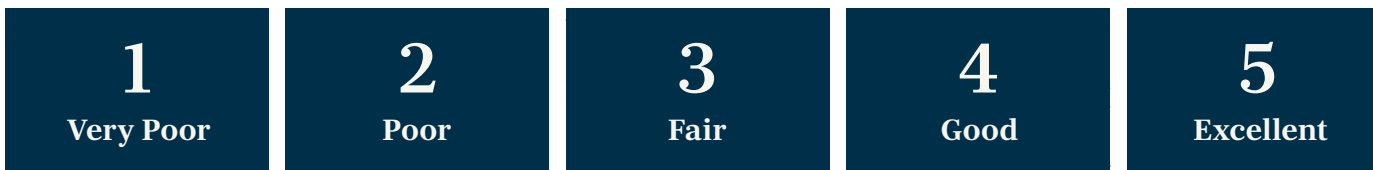
1	2	3	4	5
Very Poor	**Poor**	**Fair**	**Good**	**Excellent**

Given the fact that not every ImpResPAC domain will be applicable in every implementation research proposal, we suggest that you calculate the global ImpResPAC **median** score, **range** and **interquartile range** of the applicable domain scores. This will allow you to compare the conceptual and methodological quality of implementation research proposals with varying numbers of applicable domains.

The overall global ImpResPAC median score will range from 1-5, with higher scores indicating higher quality implementation research proposals.

Example of how to calculate the global ImpResPAC median score:

First, place the domain scores in ascending order. Then, identify the middle value. This is the global ImpResPAC median score. If the number of applicable domains is even, then the global ImpResPAC median score is the average of the middle two domain scores.

• Domains scored: 1, 2, 3, ③, ④, 4, 4, 4

Global ImpResPAC median score: 3.5 (Fair/Good)

• **Range: 3 (1-4)**
• **Interquartile Range: 1.5**

Note: In addition to calculating the global ImpResPAC median score, we recommend that you consider individual domain scores. This is important because there may be instances in which the global ImpResPAC median score may be inflated by a number of ImpResPAC domains that score very highly, but consist of a number of ImpResPAC domains that score very poorly.

ImpResPAC is intended to measure the conceptual and methodological quality of implementation research proposals in healthcare, rather than as a measure of reporting quality. As such, if domain(s) and/or item(s) deemed not to be applicable are not assessed, this should be viewed negatively. If being used for high-stakes assessment (e.g., funding decisions), we suggest that clarification is sought from research teams regarding ImpResPAC domain(s) and/or item(s) not addressed.

Linked pages:
Click **bold text** to see related information
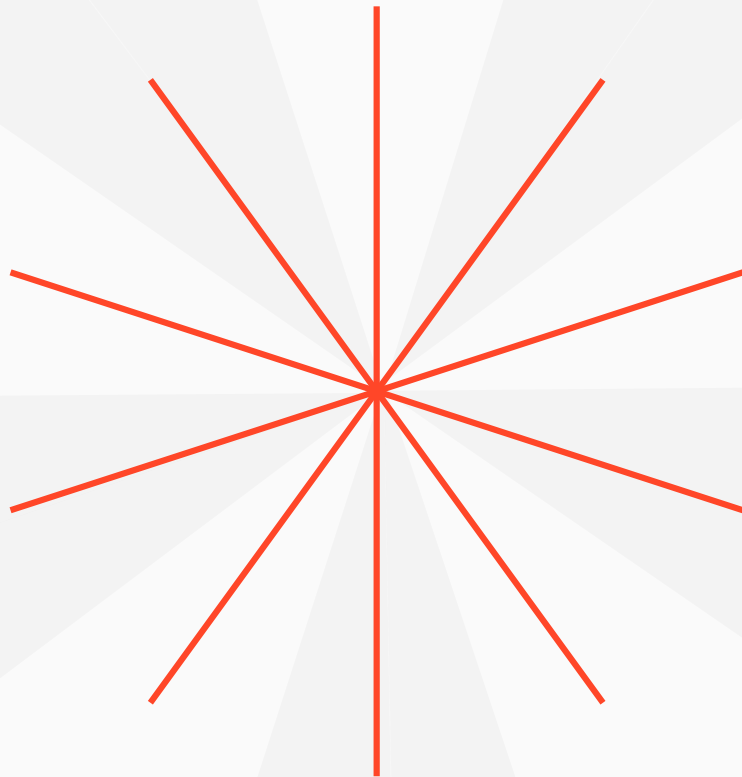
Implementation research characteristics	4
Implementation theories, models and frameworks	4
Implementation determinants	3
Implementation strategies	3
Service and patient outcomes	N/A
Implementation outcomes	4
Unintended consequences	1
Economic evaluation	N/A
Stakeholder involvement and engagement	4
Patient and public involvement and engagement	2

Global ImpResPAc median score: 3.5 (Fair/Good)

Click domains to view
the ImpResPAC tool

Project title:

Implementation research characteristics

	Not applicable	Not addressed	Partially/fully addressed
The proposed study explicitly seeks to address an implementation problem; it clearly identifies and describes both the associated **quality** and/or coverage of care gap, and the **evidence-based intervention** selected to address the problem.			
Clear and strong justification is provided to support the selection of the **evidence-based intervention** to be implemented to address the **quality** and/or coverage of care gap (e.g., prior efficacy and/or effectiveness studies, patient preference). Literature and/or local data used to support the **evidence-based intervention** to be implemented is up to date and has been critically appraised.			
Implementation and wider study aims and objectives are explicitly and clearly articulated, and align with the proposed study design, methods, measures, outcomes and analysis plan.			
Issues relating to scientific and **health equity** have been thoroughly considered and described in detail. Existing inequities in the **quality** and/or coverage of care gap have been considered with the aim of achieving equity and avoiding exacerbating existing inequities.			
Design and methods of the proposed study are clearly stated and comprehensively described (e.g., qualitative, semi-structured interviews) and align appropriately with the aims and objectives of the proposed study.			
The conceptual linkages between all elements of the proposed study (i.e., the **evidence-based intervention**, **implementation determinants**, **implementation strategies**, **mechanisms of action** and outcomes) are comprehensively depicted in a **programme theory**, **logic model** or **theory of change**.			
Stage(s) of implementation of the proposed study and the associated activities planned at each stage are described in detail.			
Planned **adaptations** and **modifications** to the **evidence-based intervention** are clearly described. Reasons (e.g., available resources), goals (e.g., to reduce costs) and the process of **adaptations** and **modifications** are clearly described.[1] **Core components** of the **evidence-based intervention** are retained. Clear intention to explore the impact of planned **adaptations** and **modifications** to the **evidence-based intervention** on **service** and **patient outcomes** and **implementation outcomes** is stated.			
Clear intention to document unplanned **adaptations** and **modifications** to the **evidence-based intervention** that arise is described. Clear intention to explore the impact of unplanned **adaptations** and **modifications** on **service** and **patient outcomes** and **implementation outcomes** is stated.			
How the proposed study will contribute to the conceptual and/or methodological advancement of the field is clearly articulated.			
Taking into consideration the expertise and capacity of the research team, the proposed study can be accomplished within the available timeframe, requested budget and resources.			

Domain score - implementation research characteristics	

All terms in **bold** are defined in the **ImpResPAC glossary**

Implementation theories, models and frameworks

	Not applicable	Not addressed	Partially/fully addressed
Clear and strong justification is provided to support the selection of implementation **theories**, **models** and **frameworks** (TMFs). For example, by citing appropriate literature (e.g., the TMFs have been applied successfully to similar interventions), using implementation TMF criteria selection tools (e.g., T-CaST)[2] and/or using data from implementation site(s) (e.g., pilot data identifying relevant/important factors of implementation, which map well onto a particular implementation TMF). If pre-existing implementation TMFs are not applied, and the study aims to develop an implementation TMF, clear and strong justification is provided.			
The chosen implementation TMF(s) inform(s) and structure(s) all relevant aspects of the proposed study (e.g., study design, aims and objectives, outcomes, analysis, interpretation of results).			
If implementation TMFs are to be **partially applied**, clear and strong justification is provided.			
Proposed **adaptations** and **modifications** (above and beyond **partial application**) including extensions and the innovative use of chosen implementation TMFs are clearly and comprehensively described, and an explanation is provided.			
If more than one implementation TMF is selected, the unique contribution of each, and the benefits of combining them is described, and how they will be integrated is explained.			
Constructs/domains of implementation TMFs are proposed to be evaluated, using appropriate methods (quantitative, qualitative, mixed-methods). If proposed to be measured quantitatively, **psychometrically robust** (e.g., **valid** and **reliable**) and **pragmatic** (i.e., practical) instruments are to be utilised, where available.			
Domain score – implementation theories, models and frameworks			

Implementation determinants

	Not applicable	Not addressed	Partially/fully addressed
The context in which the proposed study is to take place and **implementation determinants**, including **contextual determinants** (theorised and/or identified to influence implementation) are clearly described.			
The proposed study aims to identify **implementation determinants**, operating at different levels, either pre-, during and/or post-implementation, as appropriate to address the study aims and objectives.			
Relevant stakeholders (e.g., those responsible for implementation/delivery and those expected to benefit) have been, or will be, **involved** in the identification of **implementation determinants**.			
Clear and detailed description of the methods to be used to identify (e.g., interviews, document analysis) and/or evaluate (e.g., quantitative instruments) **implementation determinants** is provided.			
Clear intention to document changes to the **context** (e.g., policy change) that arise during implementation is described.			
Domain score – implementation determinants			

All terms in **bold** are defined in the **ImpResPAC glossary**

ImpResPAC tool

Implementation strategies

	Not applicable	Not addressed	Partially/fully addressed
The **implementation strategies** proposed to be used are described in sufficient detail to allow replication and evaluation (i.e., **named**, **defined**, **specified/operationalised** and **actor**, **action**, **target**, **temporality**, **dose** specified).[3] If appropriate, **implementation strategies** proposed to be used are conceptually linked to an existing implementation strategy taxonomy (e.g., ERIC **implementation strategy** compilation,[4] Strategies to support the use of research in clinical practice taxonomy[5]).			
The **implementation strategies** proposed to be used have been, or will be, selected and tailored to address **implementation determinants**. **Implementation determinant-implementation strategy** linkages and the hypothesised mechanisms through which **implementation strategies** are expected to work are explicitly stated using, for example, causal pathway models or mechanism mapping.			
The process (e.g., **implementation determinant** identification → **implementation determinant** prioritisation → **implementation strategy** selection and tailoring) and methods (e.g., concept mapping, conjoint analysis) proposed to be used to select and tailor **implementation strategies** are clearly described.			
Relevant stakeholders (e.g., those responsible for implementation/delivery and those expected to benefit) have been, or will be, involved in the selection and tailoring of the proposed **implementation strategies**.			
Implementation strategy selection and tailoring is theoretically, empirically (if evidence is available) and/or pragmatically (e.g., feasibility) justified.			
The **proximal outcome** (e.g., increased screening rate), and **implementation outcome**(s) (e.g., screening feasibility) that are targeted for improvement by the proposed **implementation strategy** are explicitly stated.			
The proposed monitoring (e.g., **fidelity of delivery and/or receipt**) and evaluation (e.g., impact on **intermediate outcomes**, **implementation outcomes** and/or **proximal outcomes**) of **implementation strategies** are clearly described.			
Planned **adaptations** and **modifications** to the **implementation strategy** are clearly described. Reasons (e.g., available resources), goals (e.g., to reduce costs) and the process of adaptations and modifications are clearly described.[6] **Core components** of the implementation strategy are retained. Clear intention to explore the impact of planned **adaptations** and **modifications** to the **implementation strategy** on **service** and **patient outcomes** and **implementation outcomes** is stated.			
Clear intention to document unplanned **adaptations** and **modifications** to the **implementation strategy** that arise is described. Clear intention to explore the impact of unplanned **adaptations** and **modifications** to the **implementation strategy** on **service** and **patient outcomes** and **implementation outcomes** is stated.			
Domain score - implementation strategies			

All terms in **bold** are defined in the **ImpResPAC glossary**

ImpResPAC tool

Service and patient outcomes

	Not applicable	Not addressed	Partially/fully addressed
The proposed study includes the evaluation of **service** and/or **patient outcome(s)** as appropriate to address the study aims and objectives.			
Clear and explicit evidence that relevant stakeholders (e.g., those responsible for implementation/delivery and those expected to benefit) were involved, or will be involved, in the identification and selection of relevant and important **service** and/or **patient outcomes** to be evaluated.			
The method(s) (qualitative/quantitative/mixed-methods) to be used to evaluate **service** and/or **patient outcome(s)** are clearly described and appropriate to address the study aims and objectives.			
The proposed measurement method(s), level(s) of measurement/analysis, timing and frequency of **service** and/or **patient outcome(s)** data collection are appropriate to address the study aims and objectives. The time horizon over which service and patient outcomes are to be evaluated is clearly stated.			
The degree of focus placed on evaluating **service** and/or **patient outcomes** (i.e., the effectiveness of the selected **evidence-based intervention**) is guided by the strength of evidence for the intervention in question, the extent of planned **adaptations** and **modifications** to the **evidence-based intervention** and/or **implementation strategy**, and the **context** in which implementation is to take place.[7]			
Where quantitative **service** and/or **patient outcomes** instrument(s) are proposed to be used to assess **service** and/or **patient outcomes**, justification for selection of an existing instrument or development of a new instrument is reported. **Psychometric properties** (e.g., **validity** and **reliability**) and/or **pragmatic** (i.e., practical) qualities and/or previous application to the population of interest are stated to justify the selection of an existing instrument or development of a new instrument. If a new instrument is being developed, there is clear intention to evaluate its **psychometric properties**.			
A clear and detailed description of the **service** and/or **patient outcomes** data analysis plan is presented. How the **service** and/or **patient outcomes** are to be treated (e.g., as a predictor variable) and how **service** and/or **patient outcomes** will be analysed (e.g., correlational analysis) relative to other constructs (e.g., **implementation outcomes**) is clearly stated. For qualitatively evaluated **service** and/or **patient outcomes**, how data will be analysed and interpreted (e.g., thematic analysis) is clearly stated.			

Domain score - service and patient outcomes	

All terms in **bold** are defined in the **ImpResPAC glossary**

Implementation outcomes

	Not applicable	Not addressed	Partially/fully addressed
The proposed study includes the evaluation of one or more **implementation outcomes** as appropriate to address the study aims and objectives.			
Clear and explicit evidence that all relevant stakeholders (e.g., those responsible for implementation/delivery and those expected to benefit) were **involved**, or will be **involved**, in the identification and selection of relevant and important **implementation outcomes** to be evaluated.			
Each **implementation outcome** to be evaluated is clearly stated and an operational definition provided.[8]			
The method(s) (qualitative/quantitative/mixed methods) to be used to evaluate **implementation outcomes** are clearly described and appropriate to address the study aims and objectives.			
The proposed measurement method(s), level(s) of measurement/analysis, timing and frequency of **implementation outcome** data collection are appropriate to address the study aims and objectives.[8] The time horizon over which **implementation outcomes** are to be evaluated is clearly stated.			
Where quantitative **implementation outcome** instruments are proposed to be used to assess **implementation outcomes**, justification for the selection of an existing instrument or development of a new instrument is reported. **Psychometric properties** (e.g., **validity** and **reliability**) and/or **pragmatic** (i.e., practical) qualities and/or previous application to the population of interest are stated to justify the selection of an existing instrument or development of a new instrument. If a new instrument is being developed, there is a clear intention to evaluate its **psychometric properties**.			
A clear and detailed description of the **implementation outcome** data analysis plan is presented. How the **implementation outcomes** are to be treated (e.g., as a predictor variable) and how **implementation outcomes** will be analysed (e.g., correlational analysis) relative to other constructs (e.g., **implementation determinants**) is clearly stated.[8] For qualitatively evaluated **implementation outcomes**, how data will be analysed and interpreted (e.g., thematic analysis) is clearly stated.			
Domain score – implementation outcomes			

Unintended consequences

	Not applicable	Not addressed	Partially/fully addressed
Clear and detailed discussion of the intention to explore whether anticipated and unanticipated **unintended consequences** (including anticipated drawbacks, unexpected benefits and unexpected drawbacks) occur as a result of implementation.[9]			
If relevant, anticipated **unintended consequences**, particularly if negative, are stated and described.			
The intention to explore **unintended consequences** (both anticipated and unanticipated) from different stakeholder perspectives (e.g., patients, healthcare providers) and at different levels (e.g., individual, team, organisation) is described.			
The method(s) proposed to be used to detect, measure, analyse and better understand why **unintended consequences** (both anticipated and unanticipated) occur are clearly described (e.g., semi-structured interviews with those responsible and/or affected by implementation). The phase(s) of implementation (e.g., during, post-implementation) that detection of **unintended consequences** is planned is clearly stated.			
Ethical, moral and practical implications of how to respond to both anticipated and unanticipated **unintended consequences** (e.g., **de-implementation** or **adaptation** and/or **modification** to the **evidence-based intervention** and/or **implementation strategy**), to prevent or mitigate their effects, are described.			
Domain score – unintended consequences			

All terms in **bold** are defined in the **ImpResPAC glossary**

Economic evaluation

	Not applicable	Not addressed	Partially/fully addressed
The economic evaluation research question(s) and the type of economic evaluation (including relevant costs and consequences) proposed to be used are clearly rticulated. The alternatives being compared (e.g., the **evidence-based intervention** compared to standard practice and/or different **implementation strategies**) are clearly described.			
The **perspective(s)** (e.g., societal or health system perspective) of the economic evaluation is clearly stated and justified in relation to the context of the research and the **time horizon** over which costs and consequences are to be evaluated.			
There is a clear statement of which outcomes are to be quantified and/or qualitatively explored where relevant (e.g., patient/population health outcomes, improvement in healthcare delivery processes/provider outcomes, spillovers/unintended cost impacts to non-targeted populations and sites) and these are appropriate to the aims and objectives of the economic evaluation and informed by stakeholder involvement.			
The proposed design of the economic evaluation, where appropriate, has built in an allowance for describing/reporting the distributional implications of implementation (e.g., reducing health disparities).			
The approach to measurement of costs (including quantification and valuation of resources to be used for **implementation strategies** and **evidence-based intervention**) is clearly stated, including reference to appropriate data sources and methods.			
Clear and explicit recognition of **implementation strategy** costs, including those in the initial implementation phase and those related to sustainment and scale-up, if applicable.			
If relevant to the wider research aims and study design, the economic evaluation allows the **incremental costs** and consequences specific to the **implementation strategy** and/or **evidence-based intervention** to be separately determined.			
The planned approach to summarising **implementation cost-effectiveness** (e.g., use of **incremental cost-effectiveness ratios, cost-benefit ratios**, **net monetary benefit**) is clearly stated and appropriate.			
The approach to **sensitivity analysis** to evaluate the robustness of conclusions to uncertainty (including those relating to sampling error) around the value of key implementation, clinical, epidemiological and economic parameters is clearly stated and appropriate.			
Domain score - economic evaluation			

Stakeholder* involvement and engagement

	Not applicable	Not addressed	Partially/fully addressed
Clear and explicit evidence that relevant **stakeholders** were meaningfully **involved** in developing the study proposal (e.g., shaping research questions) and, if appropriate, are members of the research team (e.g., as co-applicants or as members of a study **steering/advisory group**).			
Clear and explicit evidence of the intention to meaningfully **engage** and/or **involve** stakeholders in all relevant later stages of the study (e.g., interpreting and disseminating research findings).			
The purpose, anticipated benefits and impact of planned **engagement** and/or **involvement** activities are clearly described. The level of **engagement** and/or **involvement** are appropriate to meet the purpose of **engagement** and/or **involvement** activities.			
The proposed study is informed by feedback from stakeholders, including their preferences and priorities. It strives to be a meaningful partnership between researchers and relevant stakeholders.			
Planned **engagement** and/or **involvement** methods are appropriate, clearly described, and promote meaningful **engagement** and/or **involvement**.			
There is a clear plan to give feedback to stakeholders **engaged** and/or **involved** in the proposed study on the impacts of their **engagement** and/or **involvement**.			
Domain score – stakeholder involvement and engagement			

Patient and public involvement and engagement

	Not applicable	Not addressed	Partially/fully addressed
Clear and explicit evidence that relevant patients, service users, carers and/or members of the public were meaningfully **involved** in developing the study proposal (e.g., shaping research questions) and, if appropriate, are members of the research team (e.g., as co-applicants or as members of a study **steering/advisory group**).			
Clear and explicit evidence of the intention to meaningfully **engage** and/or **involve** patients, service users, carers and/or members of the public, in all relevant later stages of the study (e.g., undertaking interviews with research participants, interpreting and disseminating research findings).			
The purpose, anticipated benefits and impact of planned **engagement** and/or **involvement** activities are clearly described. The level and nature of **engagement** and/or **involvement** activities are appropriate to meet the purpose of **engagement** and/or **involvement** activities.			
The proposed study is informed by feedback from patients, service users, carers and/or members of the public, including their preferences and priorities. It strives to be a meaningful partnership between researchers and relevant patients, service users, carers and/or members of the public.			
Planned **engagement** and/or **involvement** methods are appropriate, clearly described, and promote meaningful **engagement** and/or **involvement**.			
There is a clear plan to give feedback to patients, service users, carers and/or members of the public **engaged** and/or **involved** in the proposed study on the impacts of their **engagement** and/or **involvement**.			
Domain score – patient and public involvement and engagement			

*Stakeholders: stakeholders in this domain include healthcare providers, managers, commissioners, policy makers etc.

All terms in **bold** are defined in the **ImpResPAC glossary**

ImpResPAC **worksheet**

Project title:

Once you have appraised an implementation research proposal using ImpResPAC and assigned scores for all applicable domains, we recommend that you populate this table with domain scores. This will allow you to calculate the **global ImpResPAC score** (see page 09) for recommendations regarding scoring. Given the fact that not every ImpResPAC domain will be applicable in every implementation research proposal, we suggest that you calculate the median, range and interquartile range of the applicable domain scores. This will allow you to compare the conceptual and methodological quality of implementation research proposals with varying numbers of applicable domains.

Populating the table will also allow you to consider individual domain scores in addition to the global ImpResPAC score. This is important because there may be instances in which the global ImpResPAC score may be inflated by a number of ImpResPAC domains that score very highly but consist of a number of ImpResPAC domains that score very poorly.

Implementation research characteristics	
Implementation theories, models and frameworks	
Implementation determinants	
Implementation strategies	
Service and patient outcomes	
Implementation outcomes	
Unintended consequences	
Economic evaluation	
Stakeholder involvement and engagement	
Patient and public involvement and engagement	

Global ImpResPAC median score:	
Range:	
Interquartile range:	

Click on domains to view the ImpResPAC tool

I have appraised an implementation research proposal using ImpResPAC, what next?

- If you are a **reviewer** using ImpResPAC to inform funding decisions, considering the global ImpResPAC score as well as **individual domain scores will allow you to identify and differentiate between poor and excellent implementation research proposals**. This will allow you to **provide feedback** to research teams to either **explain a funding decision or to strengthen an implementation research proposal.**

- If you are an **educator** using ImpResPAC to appraise the conceptual and methodological quality of implementation research proposals submitted as part of an implementation teaching or training initiative, this will allow you to **score and provide detailed feedback to students.**

- If you are a **researcher** or **practitioner using ImpResPAC** to appraise the conceptual and methodological quality of your implementation funding proposals, this will allow you to identify any areas of weakness that ought to be addressed prior to submission.

[1] Content based on Stirman et al. **The FRAME: an expanded framework for reporting adaptations and modifications to evidence-based interventions.** Implement Sci. 2019;14(1):58.

[2] Content refers to Birken et al. **T-CaST: an implementation theory comparison and selection tool.** Implement Sci. 2018;13(1):143.

[3] Content based on Proctor et al. **Implementation strategies: recommendations for specifying and reporting.** Implement Sci. 2013;8:139.

[4] ERIC: Expert Recommendations for Implementing Change. Content refers to Powell et al. **A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project.** Implement Sci. 2015:10:21.

[5] Content refers to Boaz et al. **'It depends': what 86 systematic reviews tell us about what strategies to use to support the use of research in clinical practice.** Implement Sci. 2024:19(1):15.

[6] Content based on Miller et al. **The FRAME-IS: a framework for documenting modifications to implementation strategies in healthcare.** Implement Sci. 2021;16(1):36.

[7] Content based on Curran et al. **Reflections on 10 years of effectiveness-implementation hybrid studies.** Front Health Serv. 2022;2:1053496.

[8] Content based on Lengnick-Hall et al. **Six practical recommendations for improved implementation outcomes reporting.** Implement Sci. 2022;17(1):16.

[9] Content based on Toma et al. **A balanced approach to identifying, prioritising and evaluating all potential consequences of quality improvement: modified Delphi study.** BMJ Open. 2019;9(3):e023890.

Term	Definition	Reference
The **Actor** [in relation to implementation strategies]	The stakeholder(s) who enacts the strategy.	https://pubmed.ncbi.nlm.nih.gov/24289295/
The **Action** [in relation to implementation strategies]	Dynamic verb statements that indicate actions, steps or processes, and sequences of behavior.	https://pubmed.ncbi.nlm.nih.gov/24289295/
Adaptation [in relation to the evidence-based intervention and/or implementation strategies]	A process of thoughtful and deliberate alteration to the design or delivery of an intervention, with the goal of improving its fit or effectiveness in a given context. Related to but distinct from modification.	https://pubmed.ncbi.nlm.nih.gov/31171014/
Adaptation [in relation to theories, models and frameworks]	A process of thoughtful and deliberate alteration to a theory, model or framework, with the goal of improving its fit or appropriateness in a given context.	https://pubmed.ncbi.nlm.nih.gov/31171014/
Context	The set of circumstances or unique factors that surround a particular implementation effort.	https://pubmed.ncbi.nlm.nih.gov/19664226/
Contextual determinants	A sub-category of implementation determinants associated with the context in which implementation efforts are to take place, including for example organisational culture and climate, financial resources and social relations and support. See implementation determinants.	https://pubmed.ncbi.nlm.nih.gov/30909897/
Core components	The essential and indispensable elements of an evidence-based intervention and/or implementation strategies.	https://pubmed.ncbi.nlm.nih.gov/19664226/
Cost-benefit ratios	A ratio used in a cost-benefit analysis to summarise whether an evidence-based intervention is a worthwhile use of resource. The ratio is calculated by dividing monetised benefits by monetised costs.	https://yhec.co.uk/glossary/cost-benefit-analysis/Cost-benefit
Defined [in relation to implementation strategies]	The conceptual definition of the implementation strategy and the operational definition of any discrete components.	https://pubmed.ncbi.nlm.nih.gov/24289295/
De-implementation	The discontinuation or abandonment of practices that are not proven to be effective, are less effective or less cost-effective than an alternative practice, or are potentially harmful.	https://pubmed.ncbi.nlm.nih.gov/34819122/
Dose [in relation to implementation strategies]	The dosage or intensity of the strategy.	https://pubmed.ncbi.nlm.nih.gov/24289295/
Economic evaluation	The analysis of the costs and effects of alternative interventions that may be given to a defined population in order to support decision-making about reimbursement or implementation of the preferred interventions.	https://yhec.co.uk/glossary/economic-evaluation/
Engagement [in research]	Where information and knowledge about research is provided and disseminated.	https://www.nihr.ac.uk/explore-nihr/campaigns/supporting-patient-and-public-involvement-in-research.htm
Evidence-based intervention	Interventions with proven efficacy and effectiveness (i.e., evidence-based).	https://pubmed.ncbi.nlm.nih.gov/18287916/

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Term	Definition	Reference
Fidelity of delivery	The degree to which an intervention was implemented as it was prescribed in the original protocol or as it was intended by the program developers.	https://pubmed.ncbi.nlm.nih.gov/20957426/
Fidelity of receipt	The extent to which participants actively engage with, interact with, are receptive to, and/or use materials or recommended resources.	https://pubmed.ncbi.nlm.nih.gov/15855283/
Framework	A structure, overview, outline, system or plan consisting of various descriptive categories, e.g., concepts, constructs or variables, and the relations between them that are presumed to account for a phenomenon. Frameworks do not provide explanations; they only describe empirical phenomena by fitting them into a set of categories.	https://pubmed.ncbi.nlm.nih.gov/25895742/
Health equity	Health equity means that everyone has a fair and just opportunity to be as healthy as possible. This requires removing obstacles to health such as poverty and discrimination, and their consequences, including powerlessness, lack of access to good jobs with fair pay, quality education, housing, safe environments and healthcare.	https://www.rwjf.org/en/insights/our-research/2017/05/what-is-health-equity-.html
Implementation determinants	Factors that obstruct or enable changes in targeted professional behaviours or healthcare delivery processes. These factors have been referred to as barriers and enablers, barriers and facilitators, or problems and incentives. Factors believed or empirically shown to influence implementation outcomes. See contextual determinants.	https://pubmed.ncbi.nlm.nih.gov/25112492/ https://pubmed.ncbi.nlm.nih.gov/30909897/
Implementation cost	Costs related to the development and execution of the implementation strategy that targets one or more specific evidence-based interventions.	https://pubmed.ncbi.nlm.nih.gov/35090508/
Implementation outcomes	The effects of deliberate and purposive actions to implement new treatments, practices and services.	https://pubmed.ncbi.nlm.nih.gov/20957426/
Implementation strategies	Methods or techniques used to enhance the adoption, implementation, and sustainability of a clinical program or practice.	https://pubmed.ncbi.nlm.nih.gov/22310560/
Implementation cost-effectiveness	The cost-effectiveness of an implementation project or strategy. This would be measured with reference to the incremental cost of the implementation strategy (compared to its alternatives) and the incremental effect of the strategy on implementation outcomes and/or health-related outcomes.	https://yhec.co.uk/glossary/cost-effectiveness-analysis/
Incremental cost-effectiveness ratios	A summary measure representing the economic value of an intervention, compared with an alternative (comparator).	https://yhec.co.uk/glossary/incremental-cost-effectiveness-ratio-icer/
Intermediate outcome	Preconditions for attaining desired service delivery and clinical outcomes.	https://pubmed.ncbi.nlm.nih.gov/20957426/
Interquartile range	The length of the interval between the 25th and 75th percentiles and describes the range of the middle half of the distribution.	https://www.sciencedirect.com/topics/mathematics/interquartile-range
Involvement [in research]	An active partnership between stakeholders with researchers that influences and shapes research.	https://www.nihr.ac.uk/documents/briefing-notes-for-researchers-public-involvement-in-nhs-health-and-social-care-research/27371
Logic model	A logic model is a graphic depiction (road map) that presents the shared relationships among the resources, activities, outputs, outcomes and impact for your intervention.	https://www.cdc.gov/evaluation/logicmodels/index.htm

Term	Definition	Reference
Mechanism of action [in relation to implementation strategies]	The processes or events through which an implementation strategy operates to affect desired implementation outcomes.	https://pubmed.ncbi.nlm.nih.gov/29868544/
Median	The middle value of a set of numbers with half of the values less than the median and half the values greater than the median.	https://www.ncbi.nlm.nih.gov/books/NBK470533/
Model	A deliberate simplification of a phenomenon or a specific aspect of a phenomenon.	https://pubmed.ncbi.nlm.nih.gov/25895742/
Modification [in relation to the evidence-based intervention and/or implementation strategies]	Any changes made to interventions, whether deliberately and proactively (adaptation), or in reaction to unanticipated challenges that arise in a given session or context. Related to but distinct from **adaptation**.	https://pubmed.ncbi.nlm.nih.gov/31171014/
Named [in relation to implementation strategies]	The naming or labelling of implementation strategies.	https://pubmed.ncbi.nlm.nih.gov/24289295/
Net Monetary Benefit	A summary statistic that represents the value of an intervention in monetary terms when a willingness to pay threshold for a unit of benefit (for example a measure of health outcome or Quality-Adjusted Life Year (QALY) is known.	https://yhec.co.uk/glossary/net-monetary-benefit/
Opportunity cost	The opportunity cost of an intervention is what is foregone as a consequence of adopting a new intervention.	https://yhec.co.uk/glossary/opportunity-cost/
Partially applied [in relation to theory, model, and framework application]	Not applied in its entirety, either at a domain or construct level.	https://pubmed.ncbi.nlm.nih.gov/35155336/
Patient outcomes	Satisfaction, function and symptomatology.	https://pubmed.ncbi.nlm.nih.gov/20957426/
Perspective	The point of view adopted when deciding which types of costs and health benefits are to be included in an economic evaluation. Typical viewpoints are those of the patient, hospital/clinic, healthcare system or society.	https://yhec.co.uk/glossary/perspective/
Pragmatic quality [in relation to quantitative outcome instruments]	Instruments that are practical (i.e., not burdensome, brief, reliable, valid and sensitive to change).	https://pubmed.ncbi.nlm.nih.gov/36318228/
Programme theory [in relation to economic evaluation]	An account (often diagrammatic) of the intervention's components together with a narrative about the structures, behaviours, processes and contextual features that will be needed to achieve the aims and actions of the intervention.	https://pubmed.ncbi.nlm.nih.gov/25616279/
Proximal outcome	The product of the implementation strategy that is realised because of its specific mechanism of action, the most immediate, observable outcome in the causal pathway.	https://pubmed.ncbi.nlm.nih.gov/29868544/
Psychometric properties [in relation to quantitative outcome instruments]	Refers to the validity and reliability of a measurement tool. Also see **reliability** and **validity**.	https://yhec.co.uk/glossary/psychometric-properties/

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Term	Definition	Reference
Quality [in relation to healthcare]	Safe, effective, patient-centered, timely, efficient and equitable.	https://www.ahrq.gov/talkingquality/measures/six-domains.html
Range	The difference between the lowest and highest values.	https://www.mathsisfun.com/definitions/range-statistics-.html
Reliability	The quality of measurement in terms of consistency and/or repeatability. There are many different types of reliability e.g., test-retest reliability, inter-rater reliability. Related to but distinct from validity.	https://www.socialresearchmethods.net/kb/reliable.php
Sensitivity analysis	Used to illustrate and assess the level of confidence that may be associated with the conclusion of an economic evaluation.	https://yhec.co.uk/glossary/sensitivity-analysis/
Service outcomes	Efficiency, safety, effectiveness, equity, patient-centeredness and timeliness.	https://pubmed.ncbi.nlm.nih.gov/20957426/
Specified/operationalised [in relation to implementation strategies]	The description of implementation strategies that ensures that implementation strategies are discussed at a common level of granularity, are rateable across multiple dimensions, and are readily comparable.	https://pubmed.ncbi.nlm.nih.gov/24289295/
Steering/advisory group	Groups that help to develop, support, advise and monitor the project. The group often includes people who use services, carers, researchers and other health and social care professionals, who can provide relevant advice.	https://www.nihr.ac.uk/glossary/
The action **Target** [in relation to implementation strategies]	Target(s) according to conceptual models of implementation and unit of analysis for measuring implementation outcomes.	https://pubmed.ncbi.nlm.nih.gov/24289295/
Temporality [in relation to implementation strategies]	When the implementation strategy is used.	https://pubmed.ncbi.nlm.nih.gov/24289295/
Theory	A set of analytical principles or statements designed to structure our observation, understanding and explanation of the world.	https://pubmed.ncbi.nlm.nih.gov/25895742/
Theory of change	A comprehensive description and illustration of how and why a desired change is expected to happen in a particular context. It is focused in particular on mapping out what a program or change initiative does (its activities or interventions) and how these lead to desired goals being achieved.	https://www.theoryofchange.org/what-is-theory-of-change/
Time horizon	The time horizon used for an economic evaluation is the duration over which health outcomes and costs are calculated.	https://yhec.co.uk/glossary/time-horizon/
Unintended consequences	Outcomes that are not planned or intended at the time of an intervention/as a result of an intervention. They can be positive or negative.	https://pubmed.ncbi.nlm.nih.gov/19773653/
Validity	The quality of measurement in terms of whether a measure truly captures what it claims to capture (related to but distinct from reliability). There are many different types of validity, e.g., content validity, construct validity. Related to but distinct from reliability.	https://www.ncbi.nlm.nih.gov/pubmed/16872117

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