Key points and introduction ........................................................................................................ 2
Development and consultation .................................................................................................... 2
Implementation of the Standards ................................................................................................ 2
Acknowledgements ..................................................................................................................... 3
Versions and changes to MECIR ................................................................................................. 3
How to cite the MECIR Standards ............................................................................................. 8
Key points and introduction

Key points:

- The MECIR Standards represent a true collaborative effort across our community.
- They are an essential part of Cochrane’s quality assurance strategy.
- The MECIR Standards represent a living programme of work and will be adapted over time as methods and expectations change.

Ensuring that Cochrane Reviews represent the highest possible quality is critical if they are to inform decision making in clinical practice and health policy. Methodological Expectations of Cochrane Intervention Reviews (MECIR) are Standards that should guide the conduct and reporting of Cochrane Intervention Reviews. They are drawn from the Cochrane Handbook for Systematic Reviews of Interventions (the ‘Handbook’). The development of the Standards has been a collaborative effort over several years, involving review authors, editors and methodologists from all corners of our community. In this document we present a complete set of Standards for intervention reviews.

Development and consultation

We established working groups to develop minimum standards based on early proposals and groundwork by many groups and individuals within Cochrane. We agreed the need to identify methodological expectations for Cochrane protocols, reviews and updates of reviews on the effects of interventions that could be implemented across Cochrane. Six Working Groups covered six core methodological aspects of Cochrane Intervention Reviews:

- developing a question and deciding the scope of the review,
- searching for studies,
- selecting studies and collecting data,
- assessing risk of bias in studies,
- analysing data and undertaking meta-analyses,
- interpretation and presenting results.

For each of these areas, we set out to identify the following in respect of intervention reviews:

A. essential minimum standards (must do);
B. desirable standards (should do);
C. common errors (should not do);
D. fatal flaws (must not do) and identification of any important methodological uncertainties.

The existing Standards address A and B. At least one methodologist and one Co-ordinating Editor (clinical specialist) jointly led each working group. We sought to ensure that groups reflected divergent views and had access to appropriate expertise. We co-opted other people from across Cochrane as necessary to ensure co-ordination and consistency of approach (training and knowledge translation). From an initial draft set of Standards based primarily on the 2011 version of the Handbook, we consulted widely throughout Cochrane, after which the MECIR co-ordinating author team collated responses to produce the full original set of Standards. We have updated the Standards regularly since their first publication. They now reflect the guidance available in the most up-to-date publicly available version of the Handbook.

Implementation of the Standards

The Methodological Expectations for Cochrane Intervention Review (MECIR) are the Standards that each Cochrane Intervention Review should meet. Review authors and Cochrane Review Groups are expected to adhere or oversee adherence to these Standards across different stages of the review process: protocols, reviews and updates.

All Standards are qualified with the status of ‘mandatory’ or ‘highly desirable’. Mandatory Standards should always be met unless an appropriate justification for not doing so can be provided. Highly desirable Standards should generally be implemented but justification for not implementing them is unnecessary. We introduce each set of Standards with key points and where necessary additional explanatory notes. The MECIR conduct Standards (C1-C75) are included in the Cochrane Handbook for Systematic Reviews of Interventions.

Since the MECIR Standards were launched in 2011, technology has developed and changed how reviews are being produced. The
development of web-based platforms such as Covidence, EPPI-Reviewer, and GRADEpro GDT, as well as tools supporting semi-
amutomation, have changed the way that systematic reviews are produced. Whilst we can expect technology to develop and help
improve efficiency in production of Cochrane Reviews, these Standards remain a fundamental element of the preparation and
quality assurance of individual Cochrane Intervention Reviews.

The MECIR Standards represent a considerable amount of work from many people within the Cochrane community. The core team
of Julian Higgins, Rachel Churchill, Toby Lasserson, my predecessor, David Tovey, and Jackie Chandler have made substantial
contributions to the process. I am delighted to welcome James Thomas and Ella Flemyng to an expanded team of authors to
coincide with the launch of version 6 of the Handbook.

We continue to welcome feedback from all of you who are responsible for delivering the Standards, and hope that they are useful to
you in producing and maintaining high quality, relevant reviews that can guide decision makers throughout the world, in pursuit of
better health.

Karla Soares-Weiser
Editor in Chief
The Cochrane Library

Acknowledgements

We thank the following working group leads and contributors for their early development of the Standards: Doug Altman,
Mohammed Ansari (Methods lead), Sally Bell-Syer, Patrick Bossuyt, Deborah Caldwell, Christopher Cates, Rachel Churchill
(Co-ordinating Editors (Co-Eds) lead, Co-ordinating team), Mike Clarke (Co-Eds co-lead), Jan Clarkson (Co-Eds co-
lead), Philippa Davies, Marina Davoli (Co-Eds lead), Ruth Foxlee, Chantelle Garritty, Davina Ghersi (Co-Eds co-lead), Julie
Glanville (Methods co-lead), Peter Herbison, Julian Higgins (Co-ordinating team), Sophie Hill (Co-Eds lead), Toby Lasserson
(Co-ordinating team), Edith Leclercq, Carol Lefebvre (Methods co-lead), Jessic McGowan, Rachel Marshall, Ruth Mitchell, Donal O’Mathuna, Anna Noel-Storr, Georgia Salanti (Methods lead), Doug Salzwedel, Margaret Sampson, Jelena Savovic, Holger Schünemann (Methods lead), Ian Shemilt, Nandi Siegfried Jonathan Sterne (Methods lead), Britta Tendal
(Methods lead), David Tovey (Co-ordinating team), Peter Tugwell, Lucy Turner, Claire Vale, Julia Walters, Helen Worthington
(Co-Eds lead), and Janelle Yorke. We also thank all those Cochrane members of Review Groups, Methods Groups, Fields,
Centres and Training who responded in some detail to MECIR Standards consultations, allowing us to improve these Standards to
ensure relevance and comprehension.

Versions and changes to MECIR

Process for updating MECIR

- For details on when and how updates to MECIR are made, please see here.

Updates pending for the next version

No updated pending.

Version February 2022 (PDF version):

- C52 and C56 merged into one assessing risk of bias Conduct Standard (C52: Assess the risk of bias for each study result
  contributing to an outcome in the ‘Summary of findings’ table. For randomized trials, the RoB 2 tool should be used,
  involving judgements and support for those judgements across a series of domains of bias, as described in the Handbook);
  C57 to become C56, C58 to become C57, C59 to become C58, C60 to become C59 and there will no longer be a C60
  MECIR Conduct Standard. The standard now makes it more explicit that the original risk of bias tool can still be used.
- C28 rationale updated to: Sometimes a review will address questions about adverse effects, economic issues or qualitative
  research using a different set of eligibility criteria from the main (effectiveness) component. In such situations, the searches
  for evidence must be suitable to identify relevant study designs for these questions. Different searches may need to be
  conducted for different types of evidence.
- C28 updated to: Search relevant grey literature sources such as reports, dissertations, theses and conference abstracts.
- C37 updated to: Rerun or update searches for all relevant sources...
Version February 2021 (PDF version):

- C56: Highly desirable -changed to- C56: Mandatory
- R106: 'Declarations of interest', updated to reflect Cochrane's new Conflict of interest policy.

Version March 2020 (PDF version):

- During February and March 2020 edits were made to the PR, R, U and UR Standards in MECIR to update referencing to the new Handbook (version 6). All changes are reflected at the bottom of each page.
- PR14: Define in advance which outcomes are primary outcomes and which are secondary outcomes. -changed to- Define in advance outcomes that are critical to the review, and any additional important outcomes.
- PR27: Assess the risk of bias for each included study. For randomized trials, the Cochrane 'Risk of bias' tool should be used, involving judgements and supports for those judgements across a series of domains of bias, as described in Chapter 8 of the Handbook (version 5 or later). -changed to- Assess the risk of bias in at least one specific result for each included study. For randomized trials, the RoB 2 tool should be used, involving judgements and support for those judgements across a series of domains of bias, as described in Handbook (version 6).
- PR28: If the Risk of Bias 2 tool (see Handbook (version 6) Chapter 8) is to be used, state whether interest will be in the effect of assignment to intervention or the effect of adhering to intervention, and explain how results will be selected to be assessed for risk of bias (i.e. for which outcome domains, outcome measures, time points and analyses). ADDED
- PR35: according to summary risk of bias, or restricted to studies at low risk of bias. -changed to- according to summary risk of bias, restricted to studies at low risk of bias or restricted to low-and-some-concerns of risk of bias.
- R32: Define in advance which outcomes are primary outcomes and which are secondary outcomes. -changed to- Define in advance outcomes that are critical to the review, and any additional important outcomes.
- R45: Assess the risk of bias for each included study. For randomized trials, the Cochrane 'Risk of bias' tool should be used, involving judgements and supports for those judgements across a series of domains of bias, as described in Chapter 8 of the Handbook (version 5 or later). -changed to- Assess the risk of bias in at least one specific result for each included study. For randomized trials, the RoB 2 tool should be used, involving judgements and support for those judgements across a series of domains of bias, as described in Handbook version 6.
- R53: according to summary risk of bias, or restricted to studies at low risk of bias. -changed to- according to summary risk of bias, restricted to studies at low risk of bias or restricted to low-and-some-concerns of risk of bias.
- R55: (Include a 'Summary of Findings' table according to recommendations described in Chapter 10 of the Cochrane Handbook (version 5 or later). Specifically:
  - include results for one population group (with few exceptions);
  - indicate the intervention and the comparison intervention;
  - include seven or fewer patient-important outcomes;
  - describe the outcomes (e.g. scale, scores, follow-up);
  - indicate the number of participants and studies for each outcome;
  - present at least one baseline risk for each dichotomous outcome (e.g. study population or median/medium risk) and baseline scores for continuous outcomes (if appropriate);
  - summarize the intervention effect (if appropriate); and
  - include a measure of the certainty of the body of evidence)
- R56: to complete a PRISMA type flow chart -changed to- to be able to complete a flow diagram
- R73: Present a 'Risk of bias' table for each included study -changed to- Present at least one 'Risk of bias' table for each study that is included in a synthesis
- R73: The 'Risk of bias' table in RevMan should be used, this is an extension of the table of 'Characteristics of included studies'. -changed to- 'Risk of bias' presentation tools in RevMan should be used wherever possible.
- R73: Assess the risk of bias for each included study. For randomized trials, the Cochrane 'Risk of bias' tool should be used, involving judgements and supports for those judgements across a series of domains of bias, as described in Chapter 8 of the Handbook (version 5 or later). -changed to- Assess the risk of bias in at least one specific result for each included study. For randomized trials, the RoB 2 tool should be used, involving judgements and support for those judgements across a
A series of domains of bias, as described in Handbook (version 6).

- **R74**: Summarize the risk of bias -changed to- Present an overall risk of bias assessment
- **R76**: the heading hierarchy -changed to- any heading hierarchy
- **R76**: in RevMan5 ADDED
- **R76**: This standard will not be required when using the study-centric data structure of RevMan Web. ADDED
- **R101**: Consider the potential impact of reporting biases -changed to- Consider the potential impact of non-reporting biases
- **U9**: For randomized trials, they must be assessed using a currently accepted version of the Cochrane 'Risk of bias' tool.

The separation of performance bias and detection bias in the evaluation of blinding is highly desirable. -changed to- If the previous version used the original risk of bias tool to assess randomised trials, consider whether or not to switch to the Risk of Bias 2 tool (see Handbook (version 6) Chapter 8), including how many randomised trials were assessed in the previous version, how many new studies are expected for inclusion in the update, how well it was implemented in the previous version and whether it is feasible to switch.

**Version October 2019** (PDF version):

- Updates made to MECIR authors' affiliations
- Links to version 6 of the Cochrane Handbook for Systematic Reviews of Interventions added to all relevant standards (Conduct Standards C1-C75)
- Links to the Cochrane Editorial and Publishing Policy Resource updated
- James Thomas and Ella Flemyng added as co-authors
- Edits made to the MECIR Standards 'Key points and introduction' page (see 'Section info' on the page for details).
- Edits made to the 'Development and consultation' page (see 'Section info' on the page for details)
- New 'Implementation of the standards' section written by Karla Soares-Weiser (see 'Section info' on the page for details)
- Edits made to the 'Key points and introduction' pages for each of the four sections (see 'Section info' on the conduct, reporting of protocols, reporting and updates pages for details)
- Added a new 'Translations of the MECIR Standards' section
- Citation to the MECIR Manual as a whole and each section updated to reflect Version October 2019
- **U11**: column 2: quality -changed to- certainty (x2)
- **UR5**: column 3: quality -changed to- certainty
- **UR7**: column 3: quality -changed to- certainty
- **PR39**: column 2 and 3: quality -changed to- certainty (x4)
- **PR40**: column 3: quality -changed to- certainty
- **R12**: column 3: quality -changed to- certainty
- **R55**: column 2 and 3: quality -changed to- certainty (x4)
- **R96**: column 3: quality -changed to- certainty
- **R98**: column 3: quality -changed to- certainty (x2)
- **R99**: column 2 and 3: quality -changed to- certainty (x5)
- **R100**: column 3: Quality -changed to- Certainty

**Version July 2019**

**Version July 2019** is an archived version of MECIR, provided for historical reference. Please see the current version of MECIR here.

- **Version 1.07** - changed to- **Version July 2019**
- Previous pages titled 'Latest substantive changes' and 'Versions' have been merged into one page titled 'Versions and changes to MECIR'
- Citation to the MECIR Manual as a whole and each section updated to reflect version July 2019
- **C1**: See Handbook 2.3.2, 2.3.4, 17.2, 20.2.2 -changed to- See Handbook (version 6), Section 2.1
- **C2**: See Handbook 5.1.1 -changed to- See Handbook (version 6), Section 2.3
- **C3**: See Handbook 5.4.3, 14.1.1, 14.3 -changed to- See Handbook (version 6) Section 2.1
- **C4**: added: See Handbook (version 6), Section 2.4
- **C5**: Handbook 5.2 -changed to- Handbook (version 6), Section 3.2.1
- **C6**: Handbook 5.2 -changed to- Handbook (version 6), Section 3.2.1
- **C7**: Handbook 5.3 -changed to- Handbook (version 6), Section 3.2.2
- **C8**: Handbook 5.1.2 -changed to- Handbook (version 6), Section 3.2.4.1
- **C9**: Handbook 5.5, 13.2.2 -changed to- Handbook (version 6), Section 3.3
- **C10**: Handbook 5.5, 13.1.3 -changed to- Handbook (version 6), Section 3.3.1
- **C11**: Handbook 13.1.2 -changed to- Handbook (version 6), Section 3.3
- **C12**: Handbook 10.3.2 -changed to- Handbook (version 6), Section 3.4
- **C13**: Handbook 5.2, 5.7 -changed to- Handbook (version 6), Section 3.2.1
C14. column 2: Define in advance which outcomes are primary outcomes and which are secondary outcomes. -changed to- Define in advance which outcomes are critical to the review, and any additional important outcomes.

C14. column 3: The primary outcomes -changed to- The critical outcomes

C14. column 3: It is important to identify up to seven outcomes from the primary and secondary outcomes that will form the basis of the GRADE assessment. -changed to- Additional important outcomes may also be specified. Up to seven critical and important outcomes will form the basis of the GRADE assessment and summarized in the review’s abstract and other summary formats, although the review may measure more than seven outcomes.

C14. column 4: Handbook 5.4.2 -changed to- Handbook (version 6), Section 3.2.4.1

C15. column 2: that are important -changed to- that are critical or important

C15. column 3: that are important -changed to- that are critical or important

C15. column 3 new text: Any outcomes that would not be described as critical or important can be left out of the review.

C15. column 4: Handbook 5.4.2 -changed to- Handbook (version 6), Section 3.2.4.1

C16. column 4: Handbook 5.4.1 -changed to- Handbook (version 6), Section 3.2.4.1

C19. column 4: Handbook 6.3, 6.4 -changed to- Handbook (version 6), Section 1.5; 4.3.1.1

C20. column 3: 'Risk of bias' -changed to- 'risk of bias'

C20. column 4: Handbook 8.3 -changed to- Handbook (version 6), Section 1.5

C21. column 4: Handbook 9.1.2 -changed to- Handbook (version 6), Section 1.5

C22. column 4: Handbook 9.6.5 -changed to- Handbook (version 6), Section 1.5

C23. column 4: Handbook 11.5 -changed to- Handbook (version 6), Section 1.5

C24. column 3: Supplementary searches should be performed as described in sections 6.3.2 and 6.3.3 of the Handbook.

C24: BLANK -changed to- See Handbook (version 6) Section 4.3.1.1

C25: Handbook 6.2.1.4, 6.2.1.5 -changed to- Handbook (version 6), Section 4.3.1.4

C26: Handbook 13.3, 14.5; 15.3; 20.3.2.1 -changed to- Handbook (version 6), Section 4.4.1

C27: Handbook 6.2.3.1, 6.2.3.2, 6.2.3.3 -changed to- Handbook (version 6), Section 4.4.3

C28: Handbook 6.2.1.7, 6.2.1.8, 6.2.2 -changed to- Handbook (version 6), Section 4.3.5

C29: Handbook 6.2.2.5 -changed to- Handbook (version 6), Section 4.3.5

C30: Handbook 6.2.2.5 -changed to- Handbook (version 6), Section 4.3.5

C31: Handbook 6.2.3 -changed to- Handbook (version 6), Section 4.3.2

C32: Handbook 6.4.2, 6.4.4, 6.4.7 -changed to- Handbook (version 6), Section 4.4.2

C33: Handbook 6.4.5, 6.4.6, 6.4.8 -changed to- Handbook (version 6), Section 4.4.4

C34: Handbook 6.4.11, 6.4.2; 13.3.1.2, 14.5.2, 15.3.1, 17.5, 20.3.2 -changed to- Handbook (version 6), Section 4.4.7

C35: Handbook 6.4.9 -changed to- Handbook (version 6), Section 4.4.5

C36: Handbook 6.6.1 -changed to- Handbook (version 6), Section 4.5

C37: BLANK -changed to- Handbook (version 6), Section 4.4.10

C38: BLANK -changed to- Handbook (version 6), Section 4.4.10

C39: column 4: Handbook 7.2.4 -changed to- Handbook (version 6), Section 4.6.4

C40: column 4: Handbook 5.4.1 -changed to- Handbook (version 6), Section 4.6.3

C41: column 3: A PRISMA type flow diagram and a table of ‘Characteristics of excluded studies’ will need to be completed in the final review. -changed to- DELETED

C41: column 4: Handbook 6.6.1; 11.2.1 -changed to- Handbook (version 6), Section 4.6.4

C42: column 4: Handbook 7.2.1, 7.2.2, 7.6.4 -changed to- Handbook (version 6), Section 4.6.2; 5.2.1

C43: column 2: that has been -changed to- which has been

C43: column 3: Piloting the form within the review team using a sample of included studies is highly desirable -changed to- Piloting the form within the review team is highly desirable.

C43: column 4: Handbook 7.5 -changed to- Handbook (version 6), Section 5.4.1

C44: column 3: Details of funding source for each study and the declarations of interest for the primary investigators should also be collected during this process. TiDieR (Hoffman 2014) will assist selection of which characteristics of interventions should be sought. -changed to- DELETED

C44: column 4: Handbook 7.3, 11.2 -changed to- Handbook (version 6), Section 5.3.1

C45: column 3: not a mandatory standard for study characteristics. -changed to- not a mandatory standard for the former.

C45: column 4: Handbook 7.6.2, 7.6.5 -changed to- Handbook (version 6), Section 5.5.2

C46: column 4: Handbook 7.6.2 -changed to- Handbook (version 6), Section 5.5.2

C47: column 4: Handbook 7.7 -changed to- Handbook (version 6), Section 5.3.6

C48: column 4: Handbook 6.4.10 -changed to- Handbook (version 6), Section 4.4.6; 5.2

C49: column 3: Risk of bias -changed to- risk of bias

C49: column 4: Handbook 7.4.2 -changed to- Handbook (version 6), Section 5.2.3

C50: title: Choosing intervention groups in multi-arm studies -changed to- Choosing interventions in multi-arm studies

C50: column 2: include in the review only the intervention and control groups that meet -changed to- include in the review only the interventions that meet

C50: column 3: intervention groups (x2) -changed to- interventions (x2)
Recommendations for assessing bias in randomized studies included in Cochrane Reviews are now well established. As described in this Handbook, risk-of-bias assessments are performed using the 'Risk of bias' tool in the published review.

- **C57**: replaced title with Summarizing risk-of-bias assessments.
- **C54**: replaced column titles and references.
- **C56**: replaced column titles and references.
- **C58**: replaced column titles and references.
- **C59**: replaced column titles and references.
- **C60**: replaced column titles and references.
- **C61**: replaced column titles and references.
- **C62**: replaced column titles and references.
- **C63**: replaced column titles and references.
- **C64**: replaced column titles and references.
- **C65**: replaced column titles and references.
- **C66**: replaced column titles and references.
- **C67**: replaced column titles and references.
- **C68**: replaced column titles and references.
- **C69**: replaced column titles and references.
- **C70**: replaced column titles and references.
- **C71**: replaced column titles and references.
- **C72**: replaced column titles and references.
- **C73**: replaced column titles and references.
- **C74**: replaced column titles and references.
- **C75**: replaced column titles and references.

**Version 1.07, 2018**

*Version 1.07* is an archived version of MECIR, provided for historical reference. Please see the current version of MECIR [here](#).
• **C59**: “Addressing RoB in the synthesis....” replaced with “Incorporating assessments of RoB....”
• **C60**: “Incorporating assessments of RoB....” replaced with **NEW standard** “Addressing CoI in included trials.....”

**Version 1.06**

• **C73**: Standard changed to: Consider the potential impact of non-reporting biases on the results of the review or the meta-analysis it contains. Rationale and elaboration changed to: There is overwhelming evidence of non-reporting biases of various types. These can be addressed at various points of the review. A thorough search, and attempts to obtain unpublished results, might minimize the risk. Analyses of the results of included studies, for example using funnel plots, can sometimes help determine the possible extent of the problem, as can attempts to identify study protocols, which should be a routine feature of Cochrane Reviews.
• **C24**: Standard changed from “Planning the search” to “Searching general bibliographic databases and CENTRAL”
• **C41**: Standard changed to: “Document the selection process in sufficient detail to be able to complete a flow diagram and a table of ‘Characteristics of excluded studies’. Change elaboration to read: “A PRISMA type flow diagram and a table of ‘Characteristics of excluded studies’ will need to be completed in the final review........”
• **R56**: Standard changed to: Provide information on the flow of studies....................., ideally using a PRISMA type flow diagram...............individual studies”.
• **UR4**: Elaboration changed to: “Provide information on the flow of studies into the updated review, ideally using a PRISMA type flow diagram.”
• **R98**: Status changed to mandatory – Mandating SoF tables.
• **R102**: Changed elaboration to: “When formulating implications for practice base conclusions only on findings from the synthesis (quantitative or narrative) of studies included in the review. The conclusions of the review should convey the essence of the synthesis of included studies, without selective reporting of particular findings on the basis of the result, and without drawing on data that were not systematically compiled and evaluated as part of the review.”

**Version 1.05**

• **C48**: Upgraded from 'highly desirable' to 'mandatory'.

**Version 1.04**

• **R55**: New Standard inserted. There is subsequent renumbering of all Standards in section up to R108.(23/01/2018)
• **C28**: Changed from 'mandatory' to 'highly desirable'.(23/01/18)
• Links to Cochrane Interactive Learning modules have been added where needed.

**MECIR Booklet 2016**

**MECIR Booklet Version 2, December 2013**

**MECIR Booklet Version 2, September 2013**

**MECIR Booklet 2012**

**How to cite the MECIR Standards**