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 Version 6 of 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-automation, 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 Handboook.

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

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Versions and changes to MECIR

Version October 2019 (click here for the PDF version)

- Version July 2019 - changed to Version October 2019
- 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
Version July 2019

Version July 2019 is an archived version of MECIR, provided for historical reference.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

- **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 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 outcomes that 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. -changed to- DELETED
- **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; 20.3.2.1 -changed to- Handbook (version 6), Section 4.4.7
- **C35**: Handbook 6.4.9 -changed to- Handbook (version 6), Section 4.4.5


- **C38**: 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)
- **C50**: column 4: Handbook 16.5.2 -changed to- Handbook (version 6), Section 5.3.6
- **C52**: column 3: Recommendations for assessing bias in randomized studies included in Cochrane Reviews are now well established. -changed to- DELETED
- **C52**: column 3: as described in this Handbook -changed to- as described in Handbook version 6
- **C52**: column 4: See Handbook version 6 (Chapter 8) -changed to- See Handbook (version 6), Section 7.1.2; Chapter 8
- **C53**: column 2: risk of bias tool -changed to- risk-of-bias-tool
- **C53**: column 3: the risk of bias assessment -changed to- the risk-of-bias assessment
- **C53**: column 4: See Handbook 8.3.4 -changed to- See Handbook (version 6), Section 7.3.2; Chapter 8
- **C54**: column 2: risk of bias tables -changed to- risk-of-bias tables
- **C54**: column 3: Items that are judged to be at an unclear risk of bias but are without accompanying information supporting the judgment appear as empty cells in the graphical plots based on the ‘Risk of bias’ tool in the published review. -changed to- DELETED
- **C54**: column 4: Handbook 8.5.2 -changed to- Handbook (version 6), Section 7.3.2; Chapter 8
- **C55**: column 2: risk of bias judgement -changed to- risk-of-bias judgement
- **C54**: column 3: judgments -changed to- judgements
- **C55**: column 4: Handbook 8.5.2 -changed to- Handbook (version 6), Section 7.3.2; Chapter 8
- **C56**: column 4: Handbook 8.5.1, 8.11.2, 8.12.2 -changed to- Handbook (version 6), Section 7.3.2; Chapter 8
- **C57**: title: Summarizing risk of bias assessments changed to- Summarizing risk-of-bias assessments
- **C57**: column 4: Handbook 8.5.1, 8.13.2 -changed to- Handbook (version 6), Section 7.5; Chapter 8
- **C58**: column 4: Handbook 8.7 -changed to- Handbook (version 6), Section 7.6.1; Chapter 8
- **C59**: column 4: Handbook version 6 (Chapter 8) -changed to- Handbook (version 6), Section 7.6.1; Chapter 8
- **C60**: column 3: “notable concern of conflicts of interest” -changed to- “notable concern about conflicts of interest”
- **C60**: column 4: Handbook 8.8.1 -changed to- Handbook (version 6), Section 7.8.6; Chapter 8
- **C61**: column 4: Handbook 9.2.3.2 -changed to- BLANK
- **C62**: column 4: See Handbook 9.1.4 -changed to- BLANK
- **C63**: column 4: See Handbook 9.5.2 -changed to- See Handbook (version 6), Section 10.10.2
- **C64**: column 3: Risk of bias tool -changed to- ‘risk-of-bias’ tool
- **C64**: column 4: See Handbook 16.2 -changed to- See Handbook (version 6), Section 10.12.1
- **C65**: column 4: See Handbook 9.4.5 -changed to- See Handbook (version 6), Section 10.5.3
- **C66**: column 3: and using multiple treatments meta-analysis. -changed to- and using network meta-analysis.
- **C66**: column 4: See Handbook 7.7.3.8, 16.5.4 -changed to- See Handbook (version 6), Section 6.2.9 and Chapter 11.
- **C67**: column 4: See Handbook 9.6.3.1 -changed to- See Handbook (version 6), Section 10.11.3.1
- **C68**: column 4: See Handbook 9.6.5.2 -changed to- See Handbook (version 6), Section 10.11.5.2
- C69 column 4: See Handbook 9.5.4 -changed to- See Handbook (version 6), Section 10.10.3
- C70 column 3: of the study, i.e., to give it (x2) -changed to- of the study, that is, to give it (x2)
- C70 column 4: see Handbook 9.3, 16.3, 16.4 -changed to- See Handbook (version 6), Section 6.2.1
- C71 column 4: see Handbook 9.7 -changed to- See Handbook (version 6), Section 10.14
- C72 column 2: Interpret a statistically non-significant P value (e.g. larger than 0.05) as a finding of uncertainty unless confidence intervals are sufficiently narrow to rule out an important magnitude of effect. -changed to- Do not describe results as statistically significant or non-significant. Interpret the confidence intervals and their width. Focus interpretation of results on estimates of effect and their confidence intervals, avoiding use of a distinction between "statistically significant" and "statistically non-significant".
- C72 column 4: See Handbook 12.4.2, 12.7.4 -changed to- See Handbook (version 6), Section 14.2.1

Version 1.07

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- C66: "assess RoB due to lack of blinding......" replaced with NEW standard "Ensuring results of outcomes included in SoF are assessed for RoB......"
- C57: "RoB due to incomplete outcome data...." replaced with "Summarizing RoB assessments...."
- C58: "Summarizing RoB assessments...." replaced with "Addressing RoB in the synthesis...."
- 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."
• Links to Cochrane Interactive Learning modules have been added where needed.

How to cite the MECIR Standards