

Systematic review

**ECDC Systematic Review**

The aim of a systematic review is to collate and synthesize all relevant evidence with regards to a specific question or a set of questions. A rigorous methodology is applied to identify, appraise and summarise the evidence in order to minimise selection and confirmation bias due to preconceived opinions.

**ECDC** SCIENTIFIC ADVICE ‘Systematic review on …’ is the name that will appear on the front page of the document.

A systematic review follows a predetermined and explicit structured process involving the following steps:

* Formulation of the review question(s)
* Review protocol (see ‘Systematic review protocol’)
* Comprehensive information search
* Selection\* applying predetermined clear inclusion and exclusion criteria
* Critical appraisal (quality and risk of bias assessment)\*
* Information extraction\*
* Synthesis (including meta-analysis if considered appropriate)
* Interpretation
* Structured report

\*In state of the art systematic reviews, the selection, appraisal, and extraction steps are performed by at least two reviewers independently from each other. The reviewers then meet to discuss and solve discrepancies. This is done in order to minimise bias during the review process due to preconceived opinions about the topic.

A systematic review should be reported in a transparent and reproducible way. The ECDC **systematic review template** follows the recommendations of the PRISMA statement for transparent reporting of systematic reviews and meta-analyses ([www.prisma-statement.org](http://www.prisma-statement.org)) and aims at supporting the ECDC expert and project manager in delivering a structured report. Please also have a look at the template for a ‘systematic review protocol’.

When **commissioning** a systematic review it may be helpful to use the templates for ‘systematic review’ and ‘systematic review protocol’ as checklists when drafting the tender specifications. This template can also be attached to the tender specifications to further help the potential contractors in understanding what actually is expected. A pdf-version has been created for this purpose. Please contact css@ecdc.europa.eu.

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*Template drafted by Helena de Carvalho Gomes, Scientific Advice Coordination Section (SACS), Office of the Chief Scientist, ECDC, Version April 2015. In case of questions or comments related to this template please contact* *css@ecdc.europa.eu**.*

**Using this Word template**

This template has been set up with the styles and structure you need so you can just start typing. The styles have been formatted to match ECDC’s publication template and added to the ‘quick styles’ menu at the top right of your ‘home’ tab. Just click on the relevant style in the menu to change your text. Avoid manually formatting text or using the ‘format painter’. This will save you time and ensure a smooth conversion to the final publication templates used by the editors. If you have any uncertainty about using styles, don’t hesitate to contact someone from the Publications Group at ECDC.

**NOTE:** The <Headings 1> of the main chapters included in this template should not be changed in order to keep a consistent structure of all ECDC Systematic Reviews. Sub-headings <Heading 2>, <Heading 3>, <Heading 4> can be used whenever appropriate to help structure the main chapters and make them more reader-friendly, especially in case of complex topics.

**<Heading 1>**

**<Heading 2>**

**<Heading 3>**

***<Heading 4>***

* Text is ‘Normal’.
* Text is still Normal even if it’s in a list
* Just hit the bullet list button
* Or use the style ‘list paragraph’

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**Using figures and tables**

##### Figure 1. Title <Heading 5, Tabs & Figs>



###### Add information on the source and any notes <Heading 6, caption>

TIP: ensure the image is ‘in line with text’. To check, right slick on it and select ‘wrap text’. Choose ‘in line with text’. This will make sure your picture (or graph or text box) moves with the text as things are inserted or deleted.

##### Table 1. Title <Heading 5, Tabs & Figs>

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| Row 3 |  |  |  |  |
| Row 4 |  |  |  |  |
| **Total** |  |  |  |  |

###### Add information on the source and any notes <Heading 6, caption>

The style for the ECDC table has been saved as a table style. Click anywhere in the table to bring up the ‘table tools’ tabs. Go to ‘Design’ and choose the first option. It will say ‘ECDC table’ if you hover over it.

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Title

**The title should make clear what the report covers.**

* Use specific keywords and topics.
* It should be clear to any user who comes across the report.
* It should be short, concise and ideally under 65 characters (with spaces).
* Front-load keywords and use colons to break up longer titles.
* Subtitles can be used to further elaborate scope and context

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# Contents

**The contents list should be automatically updated:**

Right click anywhere on the contents list and choose ‘update field’.

TIP: if some text appears that should not be there or a heading is missing, this shows you have not used the correct style in the document. Correct it where it appears in the document and ‘update field’ again.

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# Abbreviations

Text

# Glossary

Text. Delete glossary if not applicable.

# Executive summary

**Content:** An executive summary provides an overview of what the report is about. It should be clear, concise and self-sufficient – and should make sense even for those who do not have time to read the full report. From it, readers should be able to understand the main points of the opinion and how the authors arrived at them. It should also be appealing to the readership, encouraging those wanting more detailed information to read the full report. Note that the executive summary will be the section used for the website as an entry point for the reader.

* First paragraphs to be strong opening and contain the headline messages: the what, why and when.
* 800 words/5000 characters maximum limit.
* Outline in short the scope and methods, as well as main results and conclusions.
* Write it after the main body of the report is complete and revisit it several times before finalising.
* References are usually not included and abbreviations should be avoided.
* Sub-headings can also be used (Objectives; Methods in short; Results in short; Possible implications; Conclusions and possible implications for public health practice and/or research).

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# Background

**Content:** This chapter introduces the topic covered and the question(s) addressed by the systematic review. The level of detail provided should enable the (expert) reader to follow the authors’ rationale for conducting the review. The purpose of the review should be clearly stated. Value statements should be avoided. Sub-headings can be used if considered helpful.

**Length:** Maximum 1500 words (approx. three pages); it should not be disproportionately long in comparison to the overall document.

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# Review methods

**Content:** The methods chapter describes the steps taken and methods applied to identify, select, appraise and synthesise the evidence.

* Exact review question(s): The presentation of the review question(s) in a format like PICO or similar can be useful both for the authors and readers of the review;
* Search strategy: Short description of keywords, information sources used and time period searched, as well as the approach used to handle grey literature;
* Eligibility criteria and selection process: Short description of steps taken and criteria used to decide if a record should be considered or not for the review. Eligibility criteria should follow logically from the review question(s) addressed;
* Assessment of quality and risk of bias: Description on how the quality and risk of bias assessment was managed and which checklists were used; if specific checklists conceived by other authors were used, they need to be referenced appropriately;
* Data extraction: Description of the most relevant data items extracted and on how data extraction was managed;
* Data synthesis and analysis: Description on how data synthesis was managed, including statistical analyses, if applicable. If specific software was used, this needs to be referenced appropriately.
* Grading of the strength of evidence for each specific review question if applicable and appropriate: description of the methodology used.

**Length:** Maximum 2000 words (approx. four pages)

Links to appendices

* Full search strategy (make use of an information specialist with experience in systematic searches; he/she is usually also the one drafting the respective paragraphs for the report)
* List of checklists used for quality and risk of bias assessment (especially if the checklists were developed or further adapted for the purpose of the review)
* Description of the methods applied to synthesise and analyse the included information and data, if too lengthy to be used in the main body text of the review;

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# Review results

**Content:** The results chapter provides the main results obtained during the steps performed along the review process, without interpretation.

* Summary of the results of the search(es) and selection: Citation flow diagram (see <http://www.prisma-statement.org/2.1.4%20-%20PRISMA%20Flow%202009%20Diagram.pdf>);
* Summary of the results of the quality and risk of bias assessment of each included record;
* Summary of the most relevant characteristics of the included records;
* Summary of the main results of the data synthesis and analysis;
* Summary of the assessment of the overall body of evidence.

It may be useful, depending on the number of the review questions and complexity of the topic to group the results by review question and/or outcome of interest addressed by the review. Likewise, sub-headings should be used to structure the chapter and enhance the readability.

The results of statistical analyses and/or meta-analyses should be presented as narrative text, complemented by tables and figures whenever appropriate. If pooling was performed, the summary measures should be presented together with confidence intervals and a statistical measure of heterogeneity. Consider the use of evidence tables or evidence profiles to summarise the results by outcome of interest. Full details (e.g. complete risk of bias assessment tables or lists of excluded records together with the reasons for exclusion) should be included in appendices to the review, to keep the results chapter readable.

**Length:** Maximum 10,000 words (approx. 20 pages)

Links to appendices

* List of records excluded at full-text level, with reason for exclusion;
* Tables with the results of the quality and risk of bias assessment;
* Extraction tables of characteristics and main results of the included records;
* Tables and figures containing the results of statistical analysis and/or meta-analysis, including results of sensitivity analyses, sub-group analyses and/or meta-regression etc., if performed and if too lengthy to be used in the main body text of the review.

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# Discussion

**Content:** This chapter discusses the main findings, including identified knowledge gaps, in the context of other evidence in the field, and in view of the potential limitations of the review, both at the level of the identified and included evidence (e.g. quality and risk of bias of the included records) and at review-level (e.g. limitations of the applied search strategy).

**Length:** Maximum 5000 words (approx. 10 pages)

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# Conclusions

**Content:** This section provides an interpretation of the results, bearing in mind the potential limitations of the performed work. Conclusions and key messages should follow directly from the review results and the link between the summarized evidence and the conclusions should be clear.

**Length:** Maximum 1000 words (approx. two pages).

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# Next steps

If further steps by ECDC are planned, they should be described in short.

**Length:** Maximum 500 words (approx. one page).

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# References

Complete bibliographic list of all the records used for the review and/or cited in the review.

ECDC uses the Vancouver system, i.e. numbered consecutively in order of appearance in the text and listed here in numerical order. Each reference is only listed once. Numbers should be in square brackets in the text.

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1. Reference 1

2. Reference 2

# Acknowledgements

* Name of the ECDC project manager that coordinated the work;
* Name of the ECDC experts that performed the systematic review;
* If the systematic review or parts of it were outsourced, provide the name of the contractor and the grant or contract number.
* List of internal and external individuals and institutions that contributed to the work, e.g. as peer reviewer or by sharing unpublished information;
* Funding.

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# Appendices

* Detailed and reproducible search strategy/-ies;
* List of records excluded at full-text level, with reason for exclusion;
* Tools or checklists or reference to the tools or checklists used to assess the quality and risk of bias of the included records;
* Tables with the results of the quality and risk of bias assessment;
* Extraction tables of characteristics and main results of the included records;
* Description of the methods applied to synthesise and analyse the included information and data, if too lengthy to be used in the main body text of the review;
* Tables and figures containing the results of statistical analysis and/or meta-analysis performed, including results of sensitivity analyses, sub-group analyses and/or meta-regression etc, if too lengthy to be used in the main body text of the review.

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