

Mind the Gap!

Mapping reviews and Evidence Gap Maps

Louise Farragher

Ailish Farragher

Caitríona Lee

Research. Evidence. Action.

Outline

- What are Evidence Gap Maps?
- Roles for information specialists and health librarians
- Technology
- Guidance
- References

HRB Evidence Centre

- The Health Research Board (HRB) is a State Agency under the Department of Health. We support and fund health and social care research and provide evidence to inform policy and practice.
- HRB Evidence Centre, established in 2010, comprises a multidisciplinary team of 22 staff, including 5 information specialists, and conducts evidence syntheses commissioned by the Department of Health to inform health policy.
- We also contribute to HRB's key role in drugs and alcohol by running the HRB National Drugs Library, commissioning research and monitoring the national drugs and alcohol strategies, and by acting as the designated Irish Focal Point for the European drugs agency, the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA).

Recently published reviews

- The efficacy and safety of medicinal cannabis in adult populations: An evidence review (2024)
- Primary prevention of dental caries: An evidence review (2023)
- Cost, safety, and environmental impact of reprocessing single-use medical devices. A systematic review and meta-analysis (2023)
- Impact of community water fluoridation on systemic health excluding oral health. An evidence review (2022)
- Promoting workplace health and well-being through culture change. An evidence review (2022)
- Management of non-cavitated and cavitated caries in primary, permanent, and mixed dentition. An evidence review (2022)

Recently published reviews cntd

- Linking care bands to resource allocation for home support and long-term residential care. An evidence review (2021)
- Reablement in the home for people aged 65 years and over: components, effectiveness, and influencing factors. An evidence review (2021)
- Housing with Support for Older People. An evidence review (2021)
- Harms and benefits of e-cigarettes and heat-not-burn tobacco products. A literature map (2020)
- Electronic cigarette and smoking cessation. An evidence review (2020)
- Electronic cigarette use and tobacco cigarette smoking initiation in adolescents. An evidence review (2020)

Table 63 Study papers on heat-not-burn tobacco products, mapped by study design and by adapted Academies of Sciences' umbrella terms

| Study design by adapted Academies of Sciences' umbrella terms | Total | Case reports | Case series | Information or surveillance system reports | Cross-sectional surveys | Case-control studies | Longitudinal cohort studies | Interventional trials |
|---|-------|--------------|-------------|--|-------------------------|----------------------|-----------------------------|-----------------------|
| Total | 28 | 2 | 0 | 0 | 1 | 0 | 0 | 25 |
| Dependence and abuse liability | 5 | 0 | 0 | 0 | 1* | 0 | 0 | 4* |
| Cardiovascular diseases | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Cancers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Respiratory diseases | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 |
| Oral diseases | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Developmental and reproductive effects | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Injuries and poisonings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exposure to heat-not-burn toxins | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Other outcomes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*The highest and second-highest number of studies by scientific heading and study design are shown in navy blue, and light blue shading, respectively.

Source: McCarthy et al 2020

Definitions

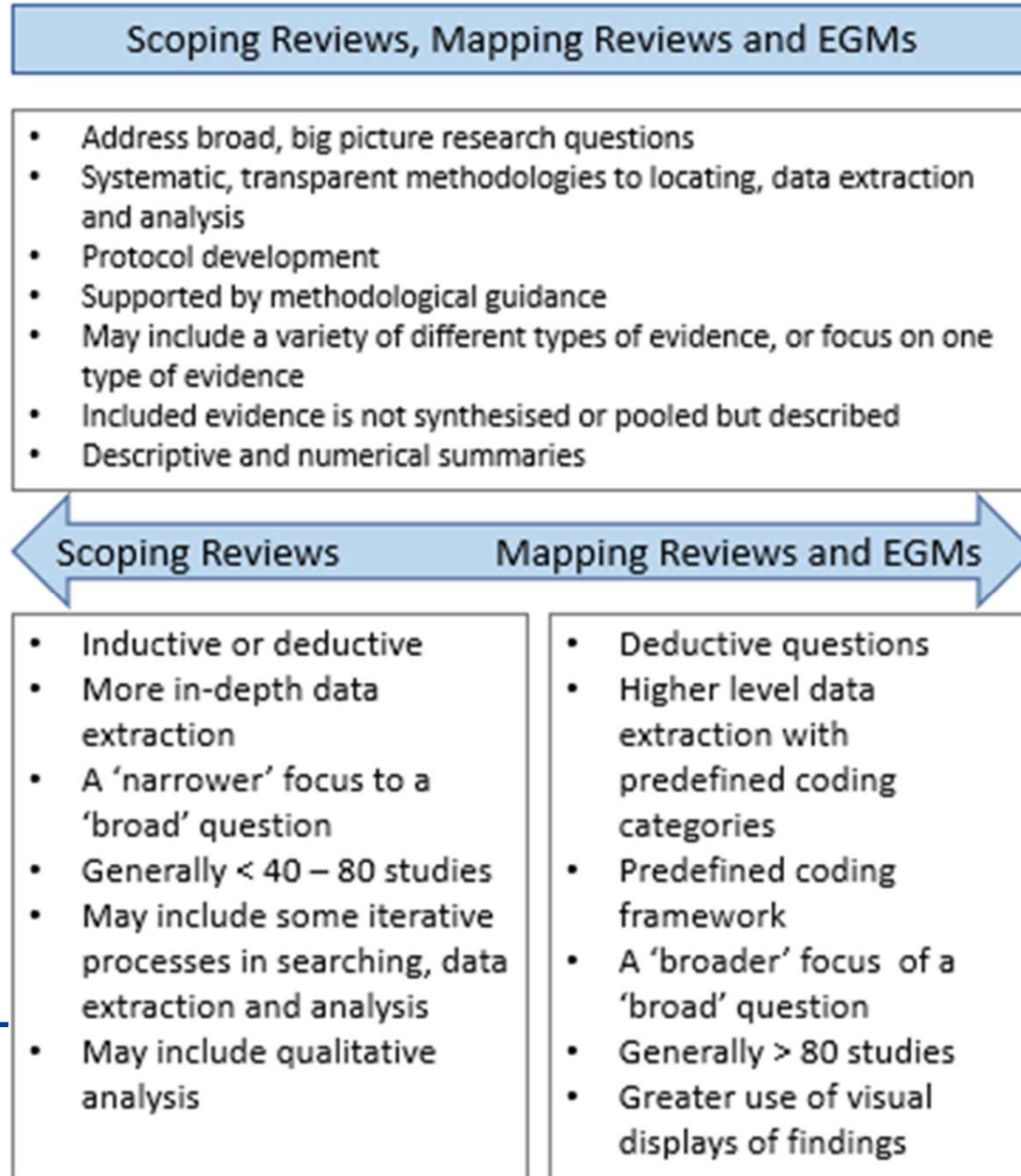
Scoping Reviews, Mapping Reviews and EGMs

- Address broad, big picture research questions
- Systematic, transparent methodologies to locating, data extraction and analysis
- Protocol development
- Supported by methodological guidance
- May include a variety of different types of evidence, or focus on one type of evidence
- Included evidence is not synthesised or pooled but described
- Descriptive and numerical summaries

Source: Campbell et al (2023) Mapping reviews, scoping reviews, and evidence and gap maps (EGMs): the same but different— the “Big Picture” review family. *Systematic Reviews* 12 (1):45

Definitions

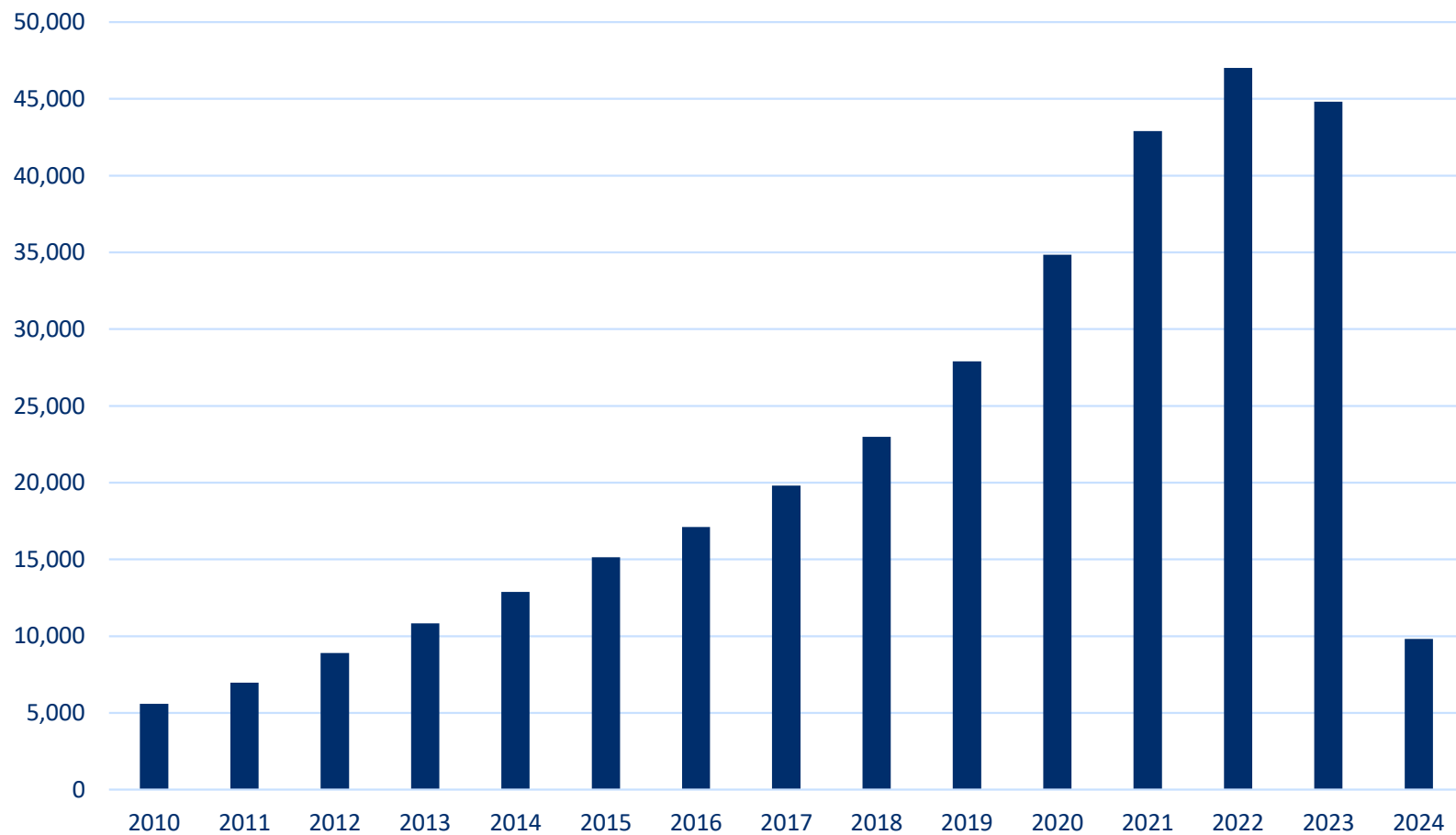
Source: Campbell et al (2023) Mapping reviews, scoping reviews, and evidence and gap maps (EGMs): the same but different— the “Big Picture” review family. Systematic Reviews 12 (1):45



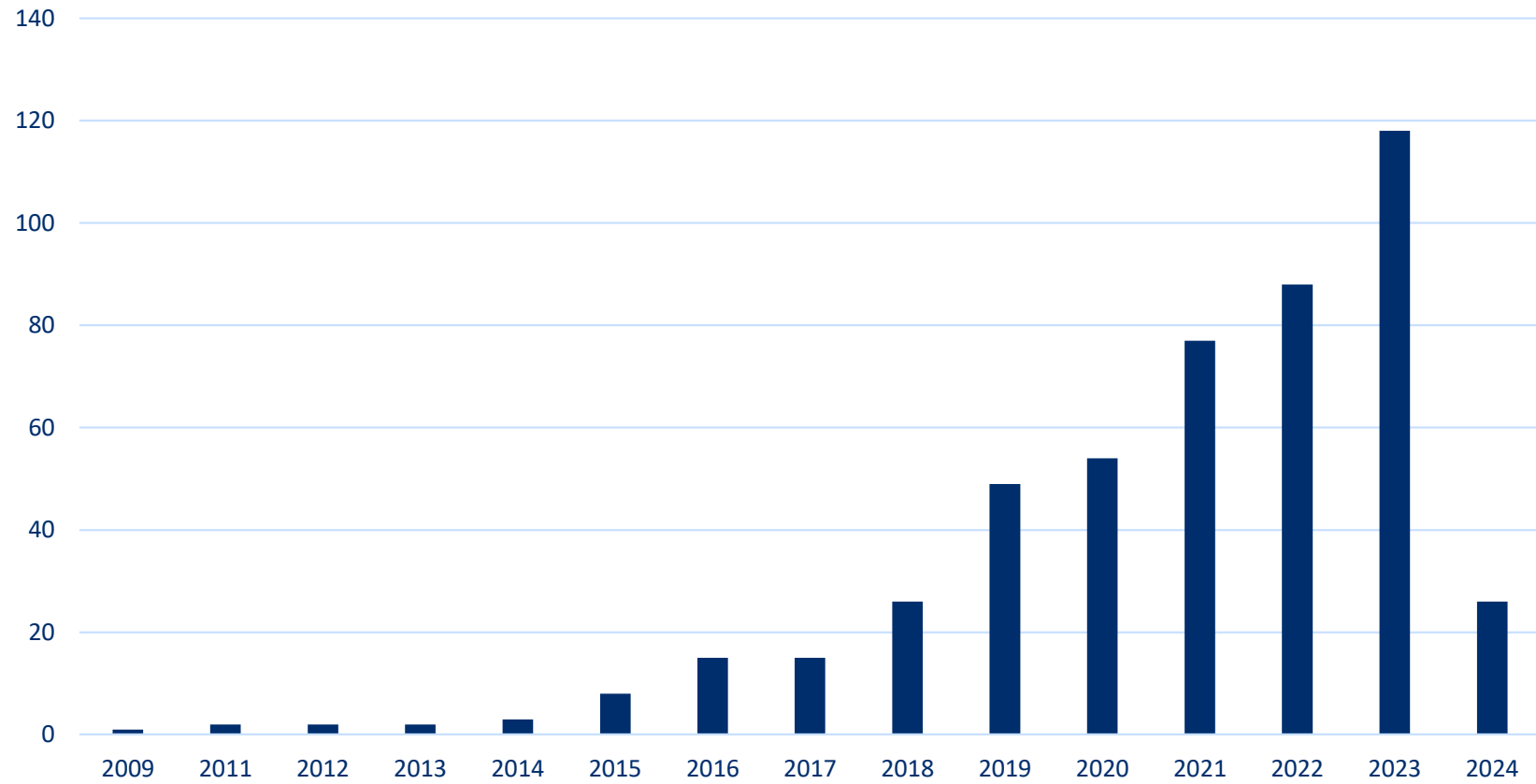
Definitions

- Evidence and gap maps (EGMs) are an innovative way to visualise the evidence and gaps in the evidence base relating to a defined topic area. (UNICEF office of Research)
- EGMs are a systematic evidence synthesis product which display the available evidence relevant to a specific research question. The scope of a map is generally broader than that of a systematic review. (White et al 2020)
- EGMs are used to identify gaps requiring filling with new evidence, collections of studies for review and increase the discoverability and use of studies by decision-makers, research commissioners and researchers. They also highlight reviews which can be used to generate higher-level evidence products such as guidelines. (White et al 2020)

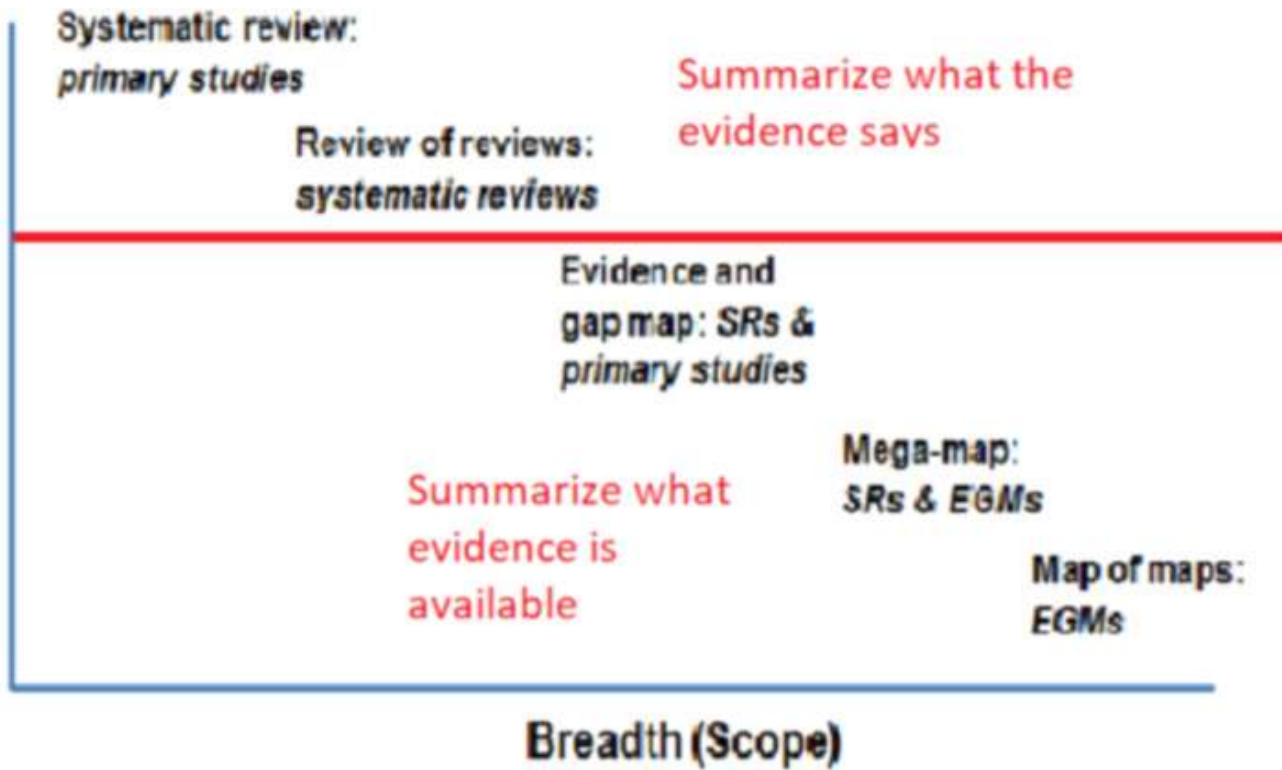
Systematic Reviews per year (Pubmed)



EGMs and mapping reviews per year (Pubmed)



Depth
(Content)



Source: White et al 2020

hrb.ie

| Outcome | | | | | | |
|----------------------------|------|-------------------|-----------------------|--------|-------------------|---------------------------------|
| Capabilities and Wellbeing | Cost | Crime and justice | Employment and income | Health | Housing stability | Public attitudes and engagement |



- 84 Low confidence primary studies
- 48 Medium/high confidence primary studies
- 22 Low confidence reviews
- 13 Ongoing
- 5 Medium/high confidence reviews

| | | Outcome | | | | | | | | | | |
|-----------------------|---|----------------------------|------|-------------------|-----------------------|----------------------------------|----------------------|--------------------------------------|-----------------|-----------------|-------------------|--|
| | | Capabilities and Wellbeing | Cost | Crime and justice | Employment and income | Health | | | | | Housing stability | |
| | | | | | | Access to mainstream health care | Mental health status | Physical health and nutrition status | Risky behaviour | Substance abuse | | |
| Services and outreach | Case management (inc. Critical Time Intervention) | | | | | | | | | | | |
| | Day centres | | | | | | | | | | | |
| | In-kind support (exc. food) | | | | | | | | | | | |
| | Legal advice | | | | | | | | | | | |

● Low confidence reviews ● Medium/high confidence reviews ● Low confidence primary studies ● Medium/high confidence primary studies ● Ongoing

Generated using v.2.2.4 of the EPPI-Mapper powered by [EPPI Reviewer](#) and [Solution Foundry team](#)

X 125 Records

All

Filter

Download Listed References

Clear Filters

Group by: None

Sort by: Title

- Outcome
 - Education, skills and...
 - Overall well being an...
 - Social connectedne...
 - Cost effectiveness
 - Cost per participant
 - Savings
 - Offending, arrest an...
 - Recidivism
 - Victims of crime
 - Anti-social behaviou...
 - Access to welfare b...
 - Earned income
 - Employment status
 - Forced labour and s...
 - Access to mainstrea...
 - Mental health status
 - Physical health and ...
 - Risky behaviour

A Nurse Case Management HIV Prev...
Maria Diane Santa; Lightfoot Marguerit...
 2021

A Randomized Controlled Trial of Int...
McHugo G J; Bebout R R; Harris M; Cl...
 2004

A Randomized Trial of Critical Time I...
Herman D B; Conover S; Gorroochurn ...
 July, 2011

A comparison of treatment outcomes...
Mares A S; Robert RA;
 November, 2011

A comprehensive costing analysis of ...
Birnie S;
 2009

A comprehensive review of prioritise...
Moledina A; Magwood O; Agbata E; ...
 June, 2021

A mixed methods randomised contro...
Vallesi S; Flatau P; Thielking M; Mack...
 May, 2019

A randomized control trial of a chroni...
Upshur Carole; Weinreb Linda; Bharel ...
 2015

A Nurse Case Management HIV Prevention Intervention (Come As You Are) for Youth Experiencing Homelessness: Protocol for a Randomized Wait-list Controlled Trial

Background Youth experiencing homelessness are more likely than housed youth to experience premature death, suicide, drug overdose, pregnancy, substance use, and mental illness. Yet while youth experiencing homelessness are 6 to 12 times more likely to become infected with HIV than housed youth, with HIV prevalence as high as 16%, many do not access the prevention services they need. Despite adversities, youth experiencing homelessness are interested in health promotion programs, can be recruited and retained in interventions and research studies, and demonstrate improved outcomes when programs are tailored and relevant to them. Objective The study aims to compare the efficacy of a nurse case management HIV prevention and care intervention, titled Come As You Are, with that of usual care among youth experiencing homelessness aged 16 to 25 years. Methods The study is designed as a 2-armed randomized wait-list controlled trial. Participants

Filters

Settings update close

Filter mode

- Default (OR within sections, AND across sections)
- And
- Or

Filters Clear Filter

- Confidence in study findings
 - Low confidence reviews
 - Medium/high confidence reviews
 - Low confidence primary studies
 - Medium/high confidence primary studies
 - Ongoing
- Country
 - Australia
 - Canada
 - Czech Republic
 - Denmark
 - France
 - Germany
 - Ireland
 - Israel

Style

- Bubble-map
- Heat-map
- Mosaic
- Donut-map

View Records

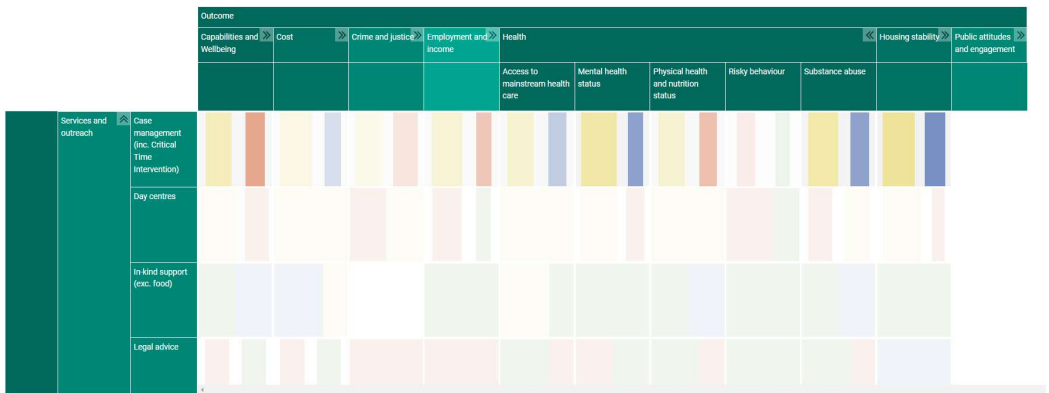
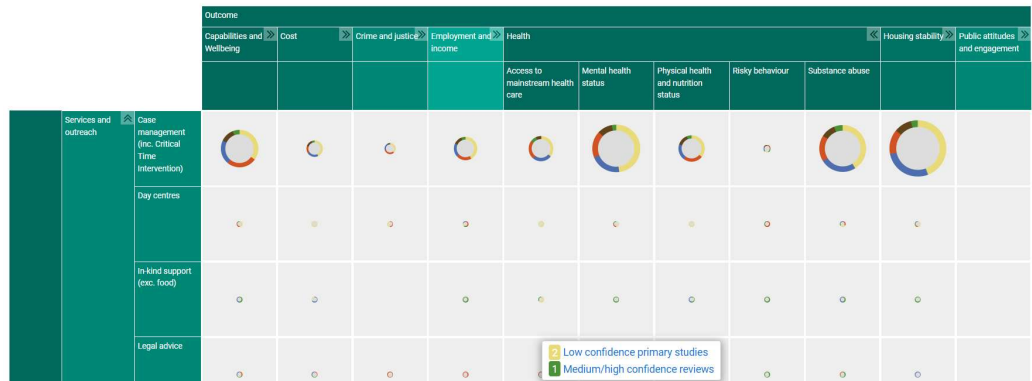
Map - Effectiveness of Interventions - 5th Edition (69

| | Access to mainstream health care | Mental health status | Physical health and nutrition status | Risky behaviour | Sub |
|-----------------------|----------------------------------|----------------------|--------------------------------------|-----------------|-----|
| employment and income | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Generated using v.2.2.4 of the EPPI-Mapper pro Solution Foundry team.



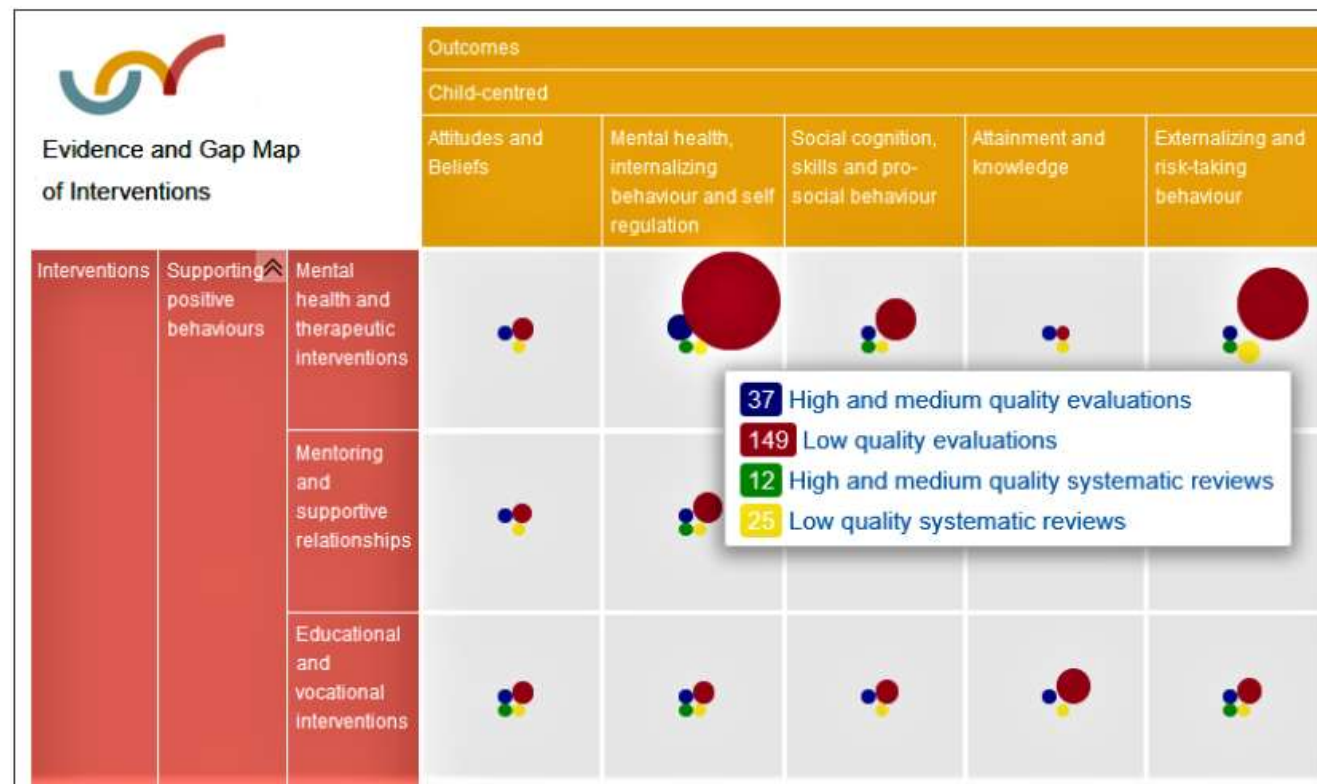
● Low confidence reviews ● Medium/high confidence reviews ■ Low confidence primary studies ● Medium/high confidence primary studies ● Ongoing
Generated using v.2.2.4 of the EPH-Mapper powered by EPPI Reviewer and created with Solution Foundry team.



Technology

EPPI-Mapper

EPPI-Mapper is our tool for visualising 'maps' of research evidence. Built initially to support the [Campbell Collaboration's evidence gap maps](#), it is available for all EPPI-Reviewer users at no charge.



Steps

- Develop the framework
- Protocol
- Searching
- Screening
- Data extraction
- Data visualisation
- Final report and publication

Roles for Information specialists

- Information specialists select the information sources
- Develops search strategies
- Conduct the searches
- Record and report the results
- Work with team to develop the map, including implementing the coding framework

Guidance




Source: Pixabay

METHODOLOGY

Open Access



Mapping reviews, scoping reviews, and evidence and gap maps (EGMs): the same but different—the “Big Picture” review family

Fiona Campbell^{1*} , Andrea C. Tricco², Zachary Munn³, Danielle Pollock³, Ashrita Saran⁴, Anthea Sutton⁵, Howard White⁶ and Hanan Khalil⁷

Abstract

Scoping reviews, mapping reviews, and evidence and gap maps are evidence synthesis methodologies that address broad research questions, aiming to describe a bigger picture rather than address a specific question about intervention effectiveness. They are being increasingly used to support a range of purposes including guiding research priorities and decision making. There is however a confusing array of terminology used to describe these different approaches. In this commentary, we aim to describe where there are differences in terminology and where this equates to differences in meaning. We demonstrate the different theoretical routes that underpin these differences. We suggest ways in which the approaches of scoping and mapping reviews may differ in order to guide consistency in reporting and method. We propose that mapping and scoping reviews and evidence and gap maps have similarities that unite them as a group but also have unique differences. Understanding these similarities and differences is important for informing the development of methods used to undertake and report these types of evidence synthesis.

Guidance for producing a Campbell evidence and gap map

Howard White¹ | Bianca Albers² | Marie Gaarder³ | Hege Kornør⁴ | Julia Littell⁵ |
Zack Marshall⁶ | Christine Mathew⁷ | Terri Pigott⁸ | Birte Snilstveit⁹ |
Hugh Waddington¹⁰ | Vivian Welch¹¹

¹Campbell Collaboration, New Delhi, India

²Centre for Evidence and Implementation, London, U.K

³International Initiative for Impact Evaluation, New Delhi, India

⁴Norwegian Institute of Public Health, Oslo, Norway

⁵Bryn Mawr College, Bryn Mawr, PA, USA

⁶McGill University, Montreal, Quebec, Canada

⁷Bruyère Research Institute, Ottawa, Canada

⁸Georgia State University, Atlanta, GA, USA

⁹International Initiative for Impact Evaluation, London, United Kingdom

¹⁰London International Development Centre, London, United Kingdom

¹¹Campbell Collaboration, Ottawa, Canada

Correspondence

Howard White, Campbell Collaboration c/o
GDB, ISID Complex, Vasant Kunj Institutional
Area, New Delhi - 110070, India.

Email: hwhite@campbellcollaboration.org

Abstract

Evidence and Gap Maps (EGMs) are a systematic evidence synthesis product which display the available evidence relevant to a specific research question. EGMs are produced following the same principles as a systematic reviews, that is: specify a PICOS, a comprehensive search, screening against explicit inclusion and exclusion criteria, and systematic coding, analysis and reporting. This paper provides guidance on producing EGMs for publication in Campbell Systematic Reviews.

Campbell Collaboration checklist for evidence and gap maps: Conduct standards

Title and protocol checklist

Developed by Howard White, Vivian Welch, Terri Pigott, Zack Marshall, Birte Snilstveit, Christine Mathew and Julia Littell

DRAFT Version 1.2 (11 April 2018)

Note for authors: This document provides a detailed checklist for title registration form and protocol for Campbell evidence and gap maps (EGMs).

Status:

Mandatory means that a new title or protocol will not be published if this standard is not met.

Highly desirable means that this should generally be done but that there are justifiable exceptions. There may be legitimate variation between or within Campbell Coordinating Groups in the relative emphasis placed on compliance with highly desirable standards. The emphasis placed on compliance with highly desirable standards will remain at the discretion of each Campbell Coordinating Group.

Optional means this is done at the authors' discretion.

T= Title registration form

P= Protocol

Campbell conduct standards 1-32

| Item No. | Status | Item Name | Standard | Rationale and elaboration | Reporting Standard Item No. |
|----------|-------------------|-------------------------|---|--|-----------------------------|
| EP1 | Mandatory (T & P) | Formulating scope | Ensure that the topic and scope is important to <u>stakeholders</u> , and report the process for formulating the scope of the EGM. | Campbell EGMs are intended to support research prioritization, not just scientific curiosity. The needs of stakeholders play a critical role in Campbell EGMs and these stakeholders should play an important role in defining the scope of the EGM. The protocol should <u>report</u> the role of stakeholders in defining the scope of the EGM. Where enabled by a formal Advisory Group, authors should indicate who the members are and the process by which meetings are held (time, frequency, and mechanism). | ER15 |
| EP2 | Mandatory (T & P) | Pre-defining objectives | Define in advance the objectives of the EGM, including the types of evidence and research questions which will and will not be covered. | Objectives stating the EGM focus must be clear before appropriate eligibility criteria can be developed. | ER18 |
| EP3 | Mandatory (P) | Pre-defining framework | Define in advance the dimensions (e.g. intervention and outcome categories and sub-categories) to be used as the framework for the EGM. | Campbell <u>EGM's</u> are presented in a matrix framework with dimensions. Intervention and outcome categories and <u>sub categories</u> are common. This framework should be defined with reference to key strategy documents and stakeholder consultation. In practice, there will be some iteration to finalize the framework based on analysis of initial included studies. The framework will inform the inclusion and exclusion criteria of the EGM. <u>Therefore</u> it will be critical for authors to adequately define the | ER18 |

Guidance for searches

| | | | | | |
|------|---------------|--|--|---|------|
| EP18 | Mandatory (P) | Designing and ensuring comprehensive search strategy | <u>Plan in advance</u> the methods to be used for identifying studies. Refer to “Searching for Studies” in the Campbell information retrieval guide to ensure that all relevant databases have been properly searched. Ensure that the search includes appropriate national, regional, and subject specific bibliographic databases. | Searches should be informed by the eligibility criteria for the <u>EGM</u> and it is important to consider all types of eligible studies when developing the strategy. Searches should be systematic and cover a broad range of literature, keeping in mind that they cannot always be as comprehensive as a systematic review because of the broad scope. Ensure the search strategy is sufficiently broad to not miss any bodies of literature. There is no minimum set of databases to search, but authors should consider consulting with a research retrieval specialist to avoid unnecessary duplication of effort. | ER27 |
|------|---------------|--|--|---|------|



| Item No. | Status | Item Name | Standard | Rationale and elaboration | Reporting Standard Item No. |
|-----------------|-------------------------------|--|--|---|------------------------------------|
| EP19 | Mandatory (if applicable) (P) | Searching for different types of evidence | If the EGM has specific eligibility criteria around study design to address adverse effects, economic issues, or qualitative research questions, undertake searches to address them. | Sometimes different searches will be conducted for different types of evidence, such as for non-randomized studies for addressing adverse effects, or for economic evaluation studies. | ER27 ER30 |
| EP20 | Mandatory (if applicable) (P) | Searching primary study and systematic review registers | When relevant, search trials and systematic registers and repositories of results. | To include on-going studies the search strategy needs to include registries for primary studies (e.g. clinicaltrials.gov, 3ie RIDIE) and systematic reviews and systematic reviews. | ER27 |
| EP21 | Mandatory (P) | Searching for grey literature | Search relevant grey literature sources such as reports/dissertations/theses databases and databases of conference abstracts. | Searches for studies should be as extensive as possible to reduce the risk of publication bias and to identify as much relevant evidence as possible. | ER27 |
| EP22 | Mandatory (P) | Searching within reviews, other maps and reference lists | Search within reviews and other maps on the same or similar topic. Check reference lists in included studies, systematic reviews and maps identified. | Searches for studies should be as extensive as possible to reduce the risk of publication bias and to identify as much relevant evidence as possible. | ER27 ER31 |
| EP23 | Highly desirable (P) | Searching by contacting relevant individuals and organizations | Contact relevant individuals and organizations for information about unpublished or ongoing studies. | Searches for studies should be as extensive as possible to reduce the risk of publication bias and to identify as much relevant evidence as possible. It is important to identify ongoing studies, so that when an EGM is later updated these can be assessed for possible inclusion. | ER27 ER35 |

| Item No. | Status | Item Name | Standard | Rationale and elaboration | Reporting Standard Item No. |
|----------|---------------|-------------------------------|--|---|-----------------------------|
| EP24 | Mandatory (P) | Restricting database searches | Justify the use of any restrictions in the search strategy on publication date, publication format, or language. | Date restrictions in the search should only be used when there are date restrictions in the eligibility criteria for studies. They should be applied only if it is known that relevant studies could only have been reported during a <u>specific time period</u> , for example, if the intervention was only available after a certain time point. Searches for updates to EGMs might naturally be restricted by date of entry into the database (rather than date of publication) to avoid duplication of effort. Publication format restrictions (e.g. exclusion of letters) should generally not be used in Campbell EGMs, since any information about an eligible study may be of value. | ER29 |

References

- Campbell F, Tricco AC, Munn Z, et al. Mapping reviews, scoping reviews, and evidence and gap maps (EGMs): the “Big Picture” review family. *Syst Rev* 2023;12:45. doi:10.1186/s13643-023-02178-5
- Centre for Homelessness Impact. Homelessness Map - Effectiveness of Interventions - 5th Edition (690 studies). <https://centreforhomelessnessimpact.github.io/egm/>
- Creating an interactive evidence (gap) map using EPPI-Mapper v2.0. 2020. <https://www.youtube.com/watch?v=nW353pA75io>
- Evidence Synthesis Ireland. Evidence and Gap Maps. 2020. <https://www.youtube.com/watch?v=KH6LIntwCqs>
- Khalil H, Tricco AC. Differentiating between mapping reviews and scoping reviews in the evidence synthesis ecosystem. *J Clin Epidemiol* 2022;149:175–82. doi:10.1016/j.jclinepi.2022.05.012
- McCarthy A, Lee C, O’Brien D, et al Harms and benefits of e-cigarettes and heat-not-burn tobacco products. A literature map. 2020. Health Research Board
- Rogers M, Sutton A, Campbell F, et al. Streamlining search methods to update evidence and gap maps: A case study using intergenerational interventions. *Campbell Syst Rev* 2024;20:e1380. doi:10.1002/cl2.1380
- White H, Albers B, Gaarder M, et al. Guidance for producing a Campbell evidence and gap map. *Campbell Syst Rev* 2020. <https://doi.org/10.1002/cl2.1125>
- White H, Saran A, Fowler B, et al. PROTOCOL: Studies of the effectiveness of interventions to improve the welfare of those affected by, and at risk of, homelessness in high-income countries: An evidence and gap map. *Campbell Syst Rev* 2019;16:e1069. doi:10.1002/cl2.1069
- White HV, Welch TP, Marshall Z, et al. Campbell Collaboration checklist for evidence and gap maps: Conduct standards. 2018. <https://onlinelibrary.wiley.com/pb-assets/assets/18911803/Campbell%20EGM%20conduct%20standards-1559728200697.docx>
- White HV, Welch V, Pigott T, et al. Campbell Collaboration checklist for evidence and gap maps: Reporting standards. 2018. <https://onlinelibrary.wiley.com/pb-assets/assets/18911803/Campbell%20EGM%20reporting%20standards-1559728200863.docx>