Evidence Gap Maps and Other Innovative Reporting Strategies

Howard White, Campbell Collaboration

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Evidence Gap Maps and Other Innovative Reporting Strategies

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Campbell Collaboration

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What are evidence and gap maps?

A systematic presentation of all available, relevant evidence for a particular sector or sub-sector.

A typical map is a matrix of intervention categories (rows) and outcome domain (columns).

Range of evidence synthesis products

- Systematic review: primary studies
- Review of reviews: systematic reviews
- Evidence and gap map: SRs & primary studies
- Mega-map: SRs & EGMs
- Map of maps: EGMs
What are evidence and gap maps?

There may be additional filters for study design, location and population sub-group.

Show what evidence is there, **NOT** what it says

Evidence may be
- Global or for particular region(s)
- Include primary studies and systematic reviews
- Cover different types of evidence (but most examples are of effectiveness studies)
<table>
<thead>
<tr>
<th>Year</th>
<th>Organization</th>
<th>Brief on its inception</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>Yale prevention of research</td>
<td>Developed a systematic and replicable 9-step process termed “evidence mapping” (CAM)</td>
</tr>
<tr>
<td>2003</td>
<td>Evidence for Policy and Practice Information and Coordinating Centre (EPPI-Centre)</td>
<td>Methodology for systematic mapping developed by EPPI</td>
</tr>
<tr>
<td>2006</td>
<td>The Social Care Institute for Excellence (SCIE)</td>
<td>Methodology of EPPI was adopted by SCIE</td>
</tr>
<tr>
<td>2010</td>
<td>International Initiative for Impact Evaluation (3IE)</td>
<td>The first 3ie “Evidence Gap Map” was produced which focused on the health and nutritional impact of agricultural intervention</td>
</tr>
<tr>
<td>2011</td>
<td>National Trauma Research Institute of Global Evidence Mapping Initiative (GEMI)</td>
<td>Traumatic Brain Injury (TBI) and Spinal Cord Injury (SCI).</td>
</tr>
</tbody>
</table>
## History of evidence mapping?

<table>
<thead>
<tr>
<th>Year</th>
<th>Organization</th>
<th>Brief on its inception</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>Collaboration for Environmental Evidence (CEE)</td>
<td>Impacts of integrated farm management, organic farming and agri-environment</td>
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<tr>
<td>2012</td>
<td>Epistemonikos Foundation</td>
<td>Epistemonikos has over 250 active collaborators that continuously upload and translate documents</td>
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<tr>
<td>2014</td>
<td>IZA Institute of study of Labour Economics, World of Labour (IZA)</td>
<td>World of Labour publishes literature reviews accompanied by maps</td>
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<tr>
<td>2016</td>
<td>Sightsavers</td>
<td>Visual impairment evidence gap maps (EGMs)</td>
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<tr>
<td>2016</td>
<td>International Rescue Committee (IRC)</td>
<td>Based on a format adapted from the International Initiative for Impact Evaluation’s</td>
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<tr>
<td>2017</td>
<td>Campbell Collaboration</td>
<td>Campbell has applied the EGMs to range of research questions.</td>
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</tbody>
</table>
Rise of evidence mapping in international development: findings from 2017 map of maps

EGMs are systematic

- Have a pre-specified protocol
- Have a systematic search strategy
- Have clear inclusion and exclusion criteria which are systematically applied
- Systematically report all eligible studies

Construction of the framework is a critical stage: needs stakeholder buy-in
Evidence and Gap Map Examples
Adolescent Sexual and Reproductive Health Evidence Gap Map

### Strength of evidence: if the review found strong evidence/mixed/no evidence in response to the research question or outcome

**Traffic light signal to identify quality of each review (SURE checklist)**

### Methodological quality of the review

<table>
<thead>
<tr>
<th>Sectors:</th>
<th>Strength of Evidence</th>
<th>Burden of disease</th>
<th>Biomedical</th>
<th>Service delivery</th>
<th>Health systems</th>
<th>Impact/Economic evaluation</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Epi</td>
<td>Risk and Prevention</td>
<td>Treat</td>
<td>C.detect</td>
<td>QCC</td>
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<tr>
<td>Strong</td>
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<td>Inconclusive</td>
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<td>Weak</td>
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Evidence-based policing matrix

Cynthia Lum, Christopher Koper, and Cody Telep.
George Mason University, Center for Evidence-Based Crime Policy.
https://cebcp.org/evidence-based-policing/the-matrix/
Evidence-Based Synthesis Program

You can read about these different types of map in our discussion paper.

Evidence and gap maps: a comparison of different approaches

Ashrita Saran and Howard White

Version 1.0
Evidence Mapping initiatives
EGMs can be applied to a range of research questions. Some examples:

- Map of Maps
- Mega Map
- Effectiveness Map (Homelessness)
- Homelessness Process map
- Uganda country EGM
- IMMANA EGM (methods and metrics)
Map of Maps for the Effectiveness of International Development Interventions: Scope and methodology
• Evidence and gap map

• Extra-extra large scope: all of international development

• Includes only EGMs
55 completed and 18 ongoing EGMs

<table>
<thead>
<tr>
<th>Sectors</th>
<th>SDG1 - Poverty</th>
<th>SDG2 - Agriculture nutrition and food security</th>
<th>SDG3 - Health</th>
<th>SDG4 - Education and learning</th>
<th>SDG5 - Gender equality and empowerment</th>
<th>SDG6 - WASH</th>
<th>SDG7 - Energy</th>
<th>SDG8 - Economic growth and employment</th>
<th>SDG9 - Infrastructure</th>
<th>SDG10 - Inequality</th>
<th>SDG11 - Urban and rural development</th>
<th>SDG12 - Consumption</th>
<th>SDG13 - Climate change</th>
<th>SDG14 - Marine</th>
<th>SDG15 - Ecosystem related outcomes</th>
<th>SDG16 - Peaceful and inclusive societies</th>
<th>SDG17 - Global Partnership</th>
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<td>Agriculture and rural development</td>
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<td>Climate change and environment</td>
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<td>Conflict management and post-conflict</td>
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<td>Economic policy</td>
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Next steps from Map of Maps

Use map to identify priority Evidence and Gap Maps

Resulting maps being produced by CEDIL:

- Disability
- Transport
- Access to justice
Mega map on child welfare in low and middle income countries: a map of systematic reviews
• Evidence and gap map

• Large scope: all of child welfare (health, nutrition, education, child protection…)

• Includes EGMs and Systematic reviews
This map shows the coverage of CoE systematic reviews.

Health
ECD
Education
Environmental health
Social work and welfare
Governance
Social protection

Next steps from Mega Map

- Social work / child abuse
- Governance / child rights / trafficking
- Equity

UNICEF commissioned violence against children EGM
Evidence and Gap
Homelessness effectiveness map
• Evidence and gap map

• Includes effectiveness studies

• Critical appraisal of all included studies
# Homelessness Map

This map includes 238 impact evaluations and 22 systematic reviews.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Cost</th>
<th>Crime and justice</th>
<th>Employment and income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community engagement and social connectedness</td>
<td>Cost effectiveness</td>
<td>Cost per participant</td>
<td>Saving</td>
</tr>
<tr>
<td>Improved skill and self care</td>
<td>Overall well being and quality of life</td>
<td>Loneliness</td>
<td>Arrest and imprisonment</td>
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<tr>
<td>Loneliness</td>
<td>Saving</td>
<td>Recidivism</td>
<td>Victims of crime</td>
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<tr>
<td>Employment and income</td>
<td>Saving</td>
<td>Victims of crime</td>
<td>Access to welfare benefits</td>
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<tr>
<td>Employment and income</td>
<td>Saving</td>
<td>Victims of crime</td>
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<tr>
<td>Employment and income</td>
<td>Saving</td>
<td>Victims of crime</td>
<td>Access to welfare benefits</td>
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A section of the homelessness effectiveness map.
Next steps/developments from the map

- Identification of additional studies
- Evidence summaries for interventions
- Commissioning mixed methods systematic reviews

On-going reviews identified using studies identified in evidence maps
Evidence and Gap Map-Process Evaluation- Barriers and Facilitators (Homelessness)
• Evidence and gap map
• Scope: homelessness process evaluations (nearly all is grey literature obtained through website searches not database searches)
• Columns are barriers and facilitators, not outcomes
A section of the homelessness ‘facilitator’ map

Next steps/developments from the homelessness maps

- Evidence summaries for interventions
- Commissioning mixed methods systematic reviews

Building intervention tool (evidence portal)
Evidence and Gap Map – Uganda Country EGM
• Evidence and gap map

• Scope: all evaluations in Uganda from 2000-present day

• Includes all evaluation studies: Process evaluations, impact evaluations and formative evaluations
The Uganda country evidence and map

Evidence and Gap Map of Development Evaluations in Uganda. (Includes 235 process evaluations, 203 impact evaluations and 1 formative evaluation)

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Economic development (including poverty and employment) SDGs 1 &amp; 8</th>
<th>Sustainable agriculture SDG 2</th>
<th>Health and well-being SDG 3</th>
<th>Education SDG 4</th>
<th>Gender SDG 5</th>
<th>Water and sanitation SDG 6</th>
<th>Energy, industry and infrastructure provision SDGs 7 &amp; 9</th>
<th>Urban development SDG 11</th>
<th>Environmental sustainability SDGs 12, 13, 14 &amp; 15</th>
<th>Governance peace and SDG 16</th>
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<tbody>
<tr>
<td>Transport infrastructure</td>
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<td>Social transformation</td>
<td>Population, health and nutrition</td>
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<td>Education and literacy (including ECD)</td>
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<td>Care and protection of vulnerable groups</td>
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</table>
Uganda country evidence and gap
Study authorship

- Authors not named
- All Ugandan team
- Ugandan lead with non-Ugandans
- Ugandan authors with non-Ugandan lead
- No Ugandan authors

[Bar chart showing the distribution of study authorship categories with corresponding numbers]
Developments/Next steps

Commission more evaluations in the areas of evident gaps

Country-level synthesis in areas with a lot of evidence
List of Campbell EGMs

- Mega Map on Child welfare (LMIC)
- People with disabilities in LMICs
- Violence against children in LMICs
- Homelessness Implementation & effectiveness (HIC)
- Child neglect (HIC) & child neglect (LMIC)
- Social protection (LMIC)
- Social intervention for Mental disorder (Global)
- Transport (LMIC)
- Intervention for adult in war and armed conflict
- Institutional responses to child maltreatment (Global)
- Pathways between agriculture and nutrition
- Access to justice (LMIC)
- WASH (LMIC)
- Tobacco control
- Gender equality in reproductive health
- Improving functional ability if older adults

We have titles for 18 EGMs published in Campbell Library now
Evidence maps are an important building block in the evidence architecture.
Mapping is a means to an end..

- Commissioning reviews
- To build evidence portals
- Write guidelines and checklists

Diagram:

- Data
- Primary studies
- Systematic reviews
- Evidence maps
- Evidence platforms
- Guidelines
- Checklists
Teaching and Learning Toolkit
An accessible summary of the international evidence on teaching 5-16 year-olds


- **Arts participation**
  - Low impact for low cost, based on moderate evidence.

- **Aspiration interventions**
  - Very low or no impact for moderate cost, based on very limited evidence.

- **Behaviour interventions**
  - Low or no impact for low cost, based on moderate evidence.
### Feedback

High impact for very low cost, based on moderate evidence.

### Metacognition and self-regulation

High impact for very low cost, based on extensive evidence.

### Reading comprehension strategies

High impact for very low cost, based on extensive evidence.
## Teaching and Learning Toolkit

An accessible summary of the international evidence on teaching 5-16 year-olds


<table>
<thead>
<tr>
<th>Toolkit Strand</th>
<th>Cost</th>
<th>Evidence Strength</th>
<th>Impact (months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repeating a year</td>
<td>£££££</td>
<td>🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️głębó</td>
<td>-4</td>
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<tr>
<td>Setting or streaming</td>
<td>£££££</td>
<td>🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️głębó</td>
<td>-1</td>
</tr>
<tr>
<td>Block scheduling</td>
<td>£££££</td>
<td>🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️🗝️głębó</td>
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</table>

*Negative impact for very high cost, based on moderate evidence.*

*Negative impact for very low cost, based on moderate evidence.*

*Very low or no impact for very low cost, based on limited evidence.*
Access to Health Services
Interventions that provide access to health care may be through mobile street outreach, access to health professionals in a non-traditional setting, or treatment for mental and physical health.

Discharge
Discharge programmes coordinate services for people at risk of homelessness who are being discharged from institutions such as hospitals, prisons or the military.

Housing First
Housing First is a housing intervention that provides accommodation with minimal conditionality for people with complex needs.

https://www.homelessnessimpact.org/intervention-tool
Evidence-based medicine is based on systematic reviews

The World Health Organization (WHO) follows a guideline development process, described in detail in the WHO Handbook for Guideline Development (2nd edition), overseen by the Guidelines Review Committee (GRC) established by the Director-General in 2007. The WHO Guidelines Review Committee ensures that WHO guidelines are of a high methodological quality, developed using a transparent and explicit process, and are informed on high quality systematic reviews of the evidence using state-of-the art systematic search strategies, synthesis, quality assessments and methods.

Checklist for Fall Prevention Programs

This checklist provides a brief guide to assessing the quality of fall prevention programs. It was developed by selected experts involved in the National Falls Free Coalition (www.healthyagingprograms.org/content.asp?sectionid=113). The purpose of the checklist is to help community teams to “ask the right questions” about a specific fall prevention intervention and to weigh the pros and cons of different interventions.

A number of meta-analyses have identified three specific types of interventions that are effective in reducing falls. Each of these types can be effective, and projects that include more than one are likely to add to the effectiveness. The three types of interventions are:

- Clinical assessment to identify an individual’s risk factors, followed by a tailored intervention to reduce as many of these factors as possible.
- Exercise programs that improve leg strength and balance, such as Strong for Life, Tai Chi, or a multi-component exercise program with adequate attention to strength and balance.
- Multi-component interventions that include education about fall prevention, exercise programs or physical therapy, and medication management, such as Matter of Balance. These programs may also include vision correction, and home modification.

Checklist Questions

1. Does the program clearly target a population in need of fall prevention programs?
2. Is the program suitable for diverse participants (e.g., age, gender, ethnicity, functional status)?
3. Can this program be implemented in a variety of settings?
4. Does the program offer strategies to modify program components to meet older adult needs, especially the more frail older adult?

EGMs are an interactive tool to make evidence discoverable, accessible and usable.

EGMs can be applied to a range of research questions.

The relevant evidence (factual or counterfactual, quantitative or qualitative) depends on the question.

EGMs are a building block in the evidence architecture.
Read more on maps

Evidence and gap maps: a comparison of different approaches
Ashrita Saran and Howard White
Version 1.0


Join us at the What Works Global Summit

Visit www.campbellcollaboration.org
Thank you!

Please take a few minutes to respond to the brief Evaluation Survey:

https://www.surveygizmo.com/s3/4932805/Evaluation-Session4-EGMs

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