

Developing the process of systematic mapping- the social welfare literature

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Introduction

- Background to SCIE
- What is systematic mapping and why do it?
- Process of mapping and outputs
- Critical issues
- Data extraction
- Quality assurance



Background to SCIE

- SCIE was launched in October 2001 as part of the British Government's drive to improve social care.
- Cover England, Wales and Northern Ireland
- It is an independent registered charity governed by a board of 15 trustees.
- Structures for service user and practitioner involvement

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SCIE's Themes

- Adult social care services
- Children and families services
- Social care workforce development



SCIE: What we do

- Research-Find out what is known
- Commission systematic reviews and practice surveys to develop evidence base
- Translate knowledge into guides for policy, practice and service delivery
- Disseminate information and promote good practice



SCIE's resources

- Social Care Online
 - UK's most extensive *free* database of social care information
- Knowledge reviews
- Practice guides
- Research briefings
- E-learning resources
- Resource guides



Further information

- All SCIE products are free and available from www.scie.org.uk
- Sign up for email alerts


What is Systematic Mapping?

- Systematic mapping is a way of taking stock of the research available in any given area of social care, so that we can decide how to develop it.
- Systematic mapping helps to identify where we have good knowledge to inform national policy and where we need to be cautious, and/or consider commissioning empirical research instead of reviews.

What is a systematic map?

Systematic maps are the product of comprehensive, sensitive searches for relevant literature. Output from searches is screened against inclusion criteria, and coded according to pre-defined generic and topic-specific keywords (study type, population, topic, etc).

The map is a resource for further analysis, which can be arranged according to topic areas, types of evidence, reference to key factors, etc.



What does a map do?

- Systematically and transparently describes the nature, coverage and quality of research in a broad topic area (so reporting method is important);
- identifies gaps in the research base;
- provides a searchable bibliographic database, with direct links to the evidence base for those wishing to locate the relevant research;
- informs the commissioning (including pricing) of systematic reviews, briefings, etc;
- Informs policy, where policy aims to be evidence-based.

How does map differ from systematic review?

- Topic area can be much broader;
- Scope can be tailored to fit available resources as long as method is transparent;
- Quality not the main issue (which is important in social care/welfare field): we may want to access descriptive studies, including users' and carers' views;
- Analysis may be superficial: need only be fit for purpose (with purpose varying);
- Can be tailored to fit time available.

Advantages of mapping for SCIE

- As commissioners, we don't waste 6-9 months, plus £30,000+, for a nil result (because little evidence);
- Can screen out a lot of 'noise', including stuff that comes from a different context or era;
- Our main sponsor is Dept of Health – they need certainty in timetabling and outcomes to feed into policy enactment & dissemination;
- We can commission research (eg practice survey) instead if little has been done.
- Various uses for SCIE and research community

Process of mapping

- Pre Map work
- Agree research question
- Develop inclusion criteria
- Develop search strings- pilot
- Exclusion criteria, screening titles and abstracts
- Retrieval of papers- and develop keywords-pilot
- Keyword tools and coding
- Reports



Dependent on staff, funding, quality, time



Pre map work

- Software needs- Eppi reviewer/ SRS
- Clear aim- why this topic
- Project group and review group- roles
- Scope
- Subject experts/advisory board



Agreeing the research question/topic

- Time/ Cost/ Breadth/depth
- Define question (s)
- Selecting resources...journals, databases
- Write a draft protocol- helps with planning and publicising
 - Title page
 - Summary
 - Methods used in the map
 - Identifying and analysing the studies
 - Results
 - Conclusions
 - References
 - Appendices



Develop Inclusion criteria

Based on your mapping topic question (s) e.g.

- PICOS (effectiveness qns)
- Similar to systematic reviews- break down question into components

- Use experts/advisory board members
- Pilot extensively



Searching

- How to search each database-pilot a search strategy in each major database
- Overestimate time needed
- Access
- Cost
- Books and book chapters?
- Reference harvesting?
- Internet searching?
- Duplicate records
- Recording all decisions
- Screen shots

Exclusion and screening

- Pilot exclusion criteria- concordance rates- 80% +
- Screen on titles and abstracts
- Secondary screening on full text
- Time
- Agreement- paired screening?



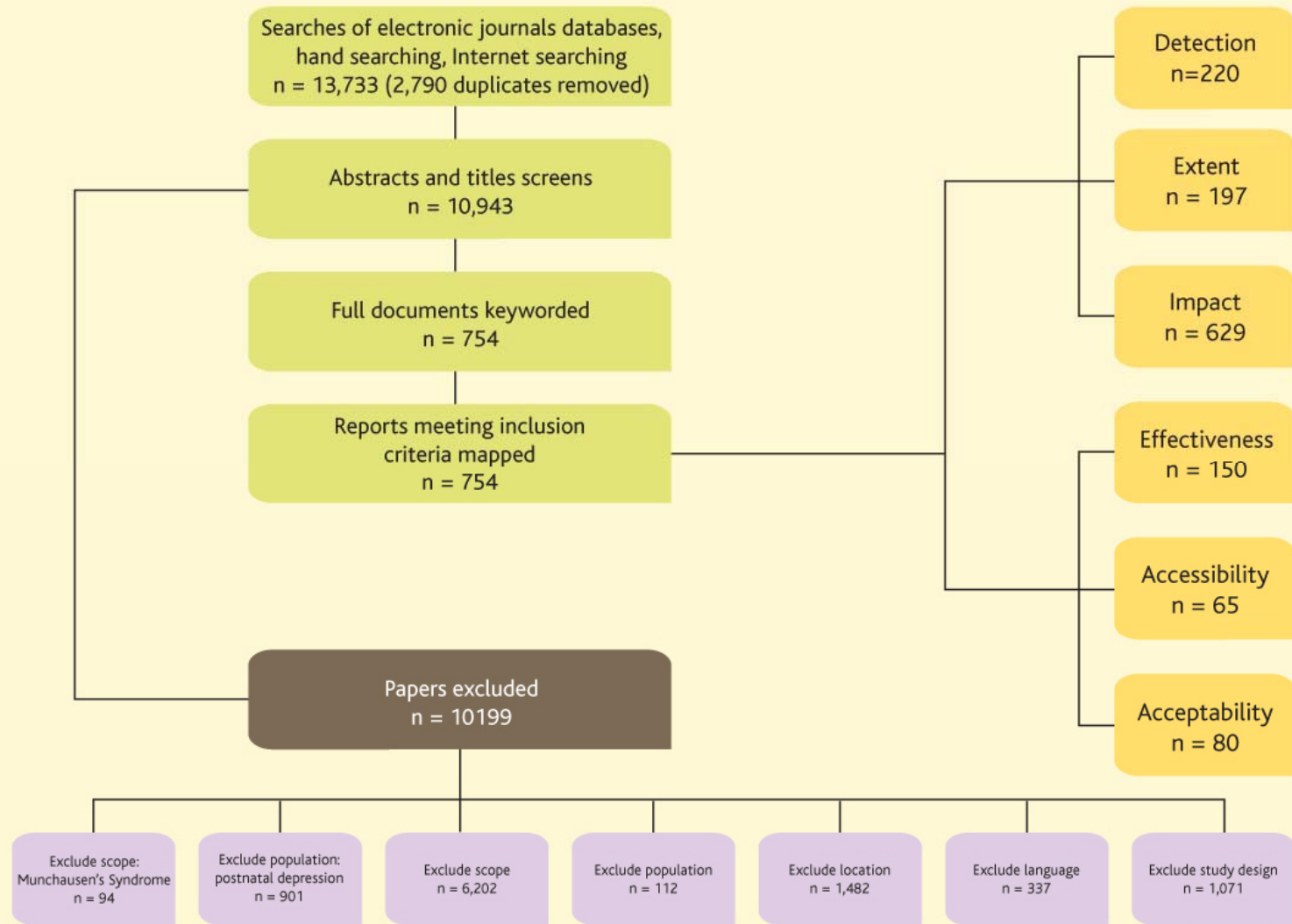
Retrieval

- Important to start this early...ongoing process
- Need excellent resources and links- links to British Library and other loan libraries-Access and costs
- Online access
- Recording retrieval
- Storage of retrieved reports-Copyright
- Working with other teams



Keywording tools and coding

- Develop tools
 - Map specific
 - Core
 - Quality of reporting
- PILOT key words extensively
- Concordance rates
- Double coding
- Quality assurance





Uses for maps/ map report

- Map report
- Descriptive reports
- Statistical data
- Detailed reports
- Answering the review questions
- Database of references
- Full record of search strategy

Outputs of a systematic map

- **Research briefings**
 - Young carers/stress and resilience/BME issues from the mental health map
- **Project scoping resource**
- **Inform and write reviews**
 - E.g SCIE/NICE UK PMH guidance
- **Resource guides**
- **Social care online content**



Some critical issues in mapping social care topics

1. Setting topics, defining concepts- lack of common language.
2. Resources.
3. Key values in mapping.
4. Screening.
5. Data extraction.
6. Quality assurance of process.
7. Involving others: experts, review team, map team, stakeholders.

1. Setting the topic

- A topic rather than a question?
- Do all have the same understanding/definition?
- Can we operationalise inc/exclusion criteria?

Effectiveness reviews: What Works? Or also

- **Need questions:** What do people want or need?
- **Process questions:** Why/how does it work?
- **Implementation questions:** What is required to make it work?
- **Correlation questions:** What relationships are significant?
- **Attitude questions:** What do people think? What are their experiences?
- **Economic questions:** cost & benefits.



2. Resources

- Who have you got to work on this?
- How big is too big?
- Who can you involve? (students on placement, registered providers)
- Time taken up with consultation and management of process (where are the single copy papers?)

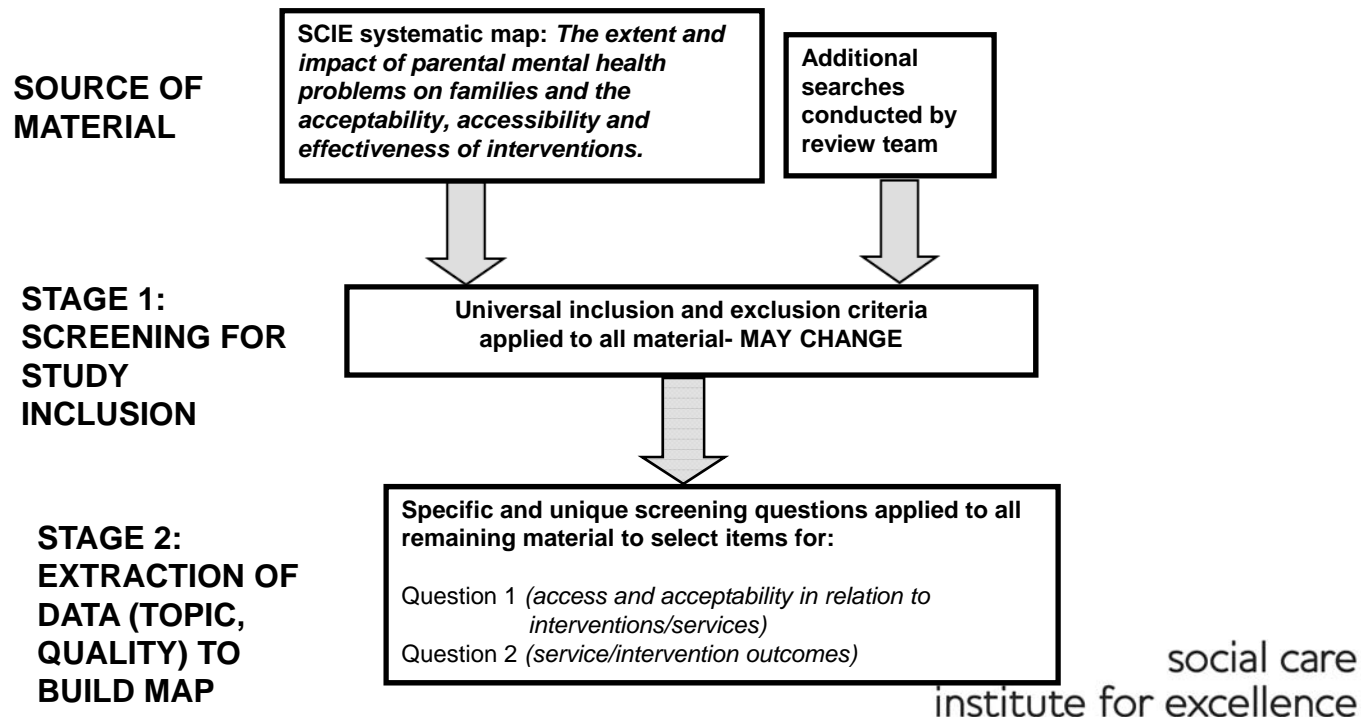
Time vs quality
Rigour vs breadth

3. Key features of mapping

- Series of stages..... critical points, but also iterative, non-linear process
- Extensive piloting at all key stages may require back-tracking, revision of inc/exclusion criteria – re-run searching
- Effective team communication – including decision log
- Consistency (between team members, commissioners, etc)
- Transparency and openness of limitations
- Quality assurance- built in throughout process

4. Two stages of screening

Source: University of York protocol: Bates, S. and Coren, E. (2006)
<http://www.scie.org.uk/publications/map>



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5. Data Extraction during mapping

Principles:

- Far more limited than in systematic reviews
- Topic relevance & quality of (reported) methods;
- In our field, we work far beyond systematic reviews & comparative studies – this is nature of evidence base;
- Fitness for purpose;
- Agreement & understanding of all coders;
- Adjustment in the light of searches;
- Need to be brief (as full papers are read) but add value.

New coding tools for each project?

- Need to develop from a sample of papers;
- Strong links to topic areas & policy interests;
- Will generate own tailor-made keywording on final database, so increase utility of map.

Some items from generic mapping tool

- Background to paper, publication, country
- What is the purpose, design, methods of this research paper?
- How were service users involved? Are their views reported?
- Details of sample population: service users, and/or providers?
- Relationship to service provision (does study report on effectiveness, acceptability, cost?)
- Potential implications for evidence base (determined in part by reporting standards).

(Options given for rapid coding; forms entered onto database.)

6. Quality Assurance of Mapping Process

- Embedded throughout the process:
 - Piloting (& revisiting) of criteria & data extraction tools- look for usability, concordance (inter-rater reliability), clarity
 - Double screening of abstracts for inclusion
 - Double coding of data extraction (using computer discrepancy report) plus 10% independently coded
 - Retrieval of high percentage of papers and tracking papers
 - Team meetings to discuss
 - Recording of decisions and justification (about process, criteria, etc) – all need to go into map report.
 - Agreement on quality/type of papers
- QA Crucial:
 - Quality of maps & reviews depends on it.



7. Involving others

- In-house mapping
- Role of expertise
- Involving providers of commissioned systematic reviews: confidence in the product (but challenges in communication)
- Involving service users
- Project management role



Learning points

- Breadth and complexity of map;
- Can never anticipate everything for reviews: clearly state limitations of map;
- Reviewers do need to carry out additional searches (inc. updates) for reviews;
- Useful to work closely with potential review teams when developing map;
- Clarity of screening criteria and coding is critical;
- Fully document all decisions.
- **TRANSPARENCY**



Some new developments: what next for Evidence to Power?

- Economic papers to be included (new databases & sources; QA systems);
- Rapid Evidence Assessments (speeding up); Is rapid mapping possible?
- Accessibility: finding new ways to present findings to lay audience.



Further information



**Bates, S; Clapton, J; and Coren, E. (2007)
Systematic maps to support the evidence
base in social care. Evidence and Policy, 3
(4) pp. 539-551.**

**SCIE's senior management team have
agreed to the publication of systematic
mapping guidance. Will be available on
SCIE website from early summer 2008.**

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Further information

- www.scie.org.uk
- Poster session
- Handouts
- Email Deborah.Rutter@scie.org.uk
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