

The conduct of systematic research reviews for SCIE knowledge reviews



SCIE's aim is to improve the experience of people who use social care services, by developing and promoting knowledge about good practice in social care. We pull together knowledge from diverse sources through working with a broad range of people and organisations. We share this knowledge freely, supporting those working in care and empowering service users.

The conduct of systematic research reviews for SCIE knowledge reviews

Esther Coren
Mike Fisher

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Written by Esther Coren and Mike Fisher

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www.scie.org.uk

Social Care Institute for Excellence

Goldings House

2 Hay's Lane

London SE1 2H

tel 020 7089 6840

fax 020 7089 6841

textphone 020 7089 6893

www.scie.org.uk

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Preface

The context for this revised edition of SCIE's systematic review guidance

When SCIE was established, its initial tasks included the development of systematic review guidance appropriate for social care. SCIE's reports indicate the kinds of knowledge that should be included and a framework for assessing the quality of different kinds of knowledge¹, a general overview of the role of systematic reviews in improving social care² and ways of synthesising studies whose findings are mainly qualitative³. Most recently, SCIE has provided a worked example of the systematic synthesis of qualitative studies⁴.

In 2002, SCIE established a basic guidance to govern the conduct of systematic reviews it commissioned. These were interim in recognition that much of the underlying methodology was still to be developed, and they were established as a general framework rather than a detailed set of procedures.

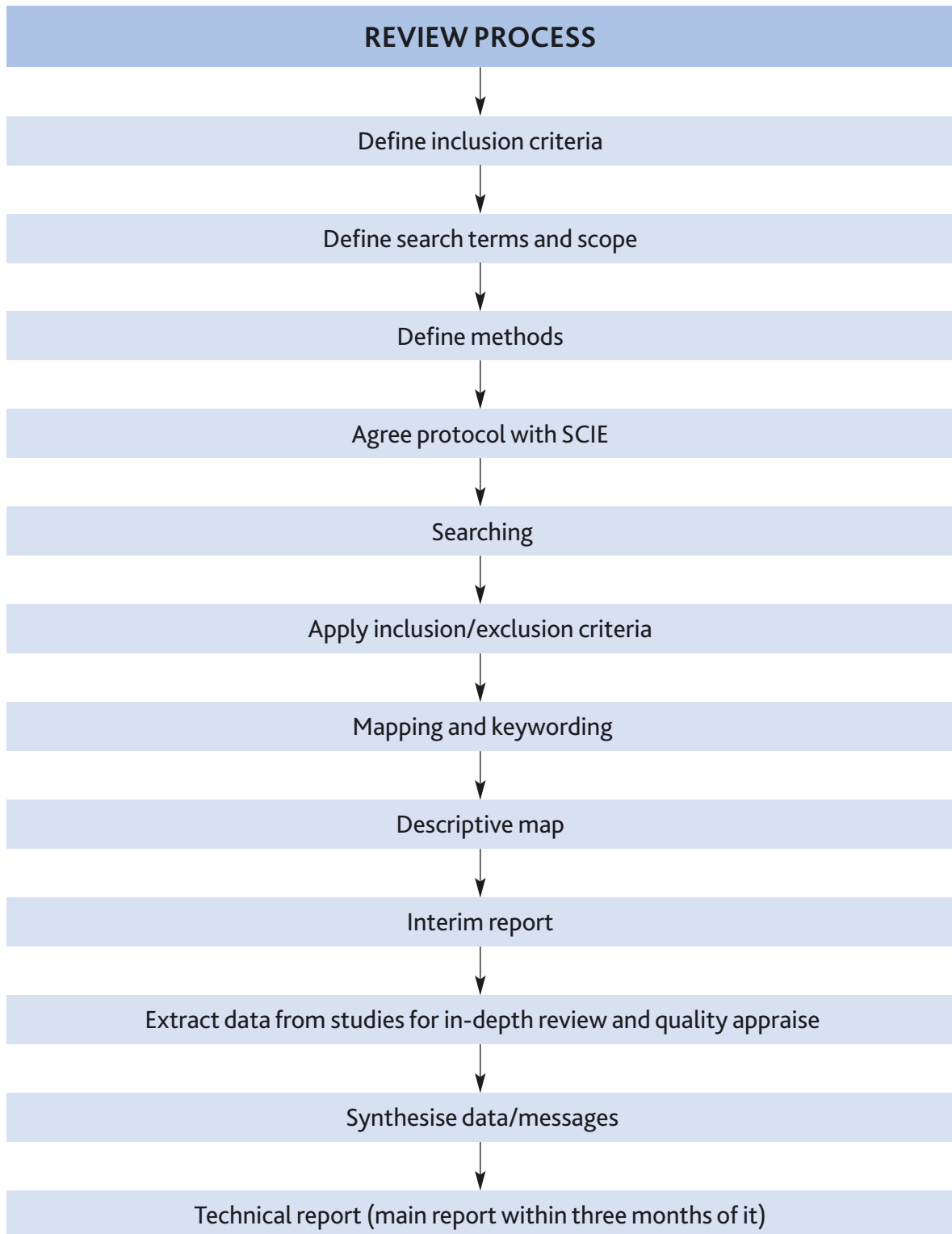
A SCIE knowledge review comprises several elements: a research review of the knowledge available through research, a practice survey to explore knowledge not reported in the literature and to generate examples of good practice, and the contextual knowledge provided by policy, organisational change processes and legislation. As part of its commitment to transparency and rigour, SCIE is developing a comprehensive description of all these processes. This guidance focuses on the research review component, but also both highlights how the research review can contribute to the description of contextual knowledge and revises the relationship between the research review and the practice survey.

Knowledge reviews are developed into practice or resource guides. Some summarisation work of reviews, additional to that specified in these guidelines, may be necessary for these products, in consultation with SCIE project managers.

The current document updates the 2002 guidelines, reflecting the need to be more precise about SCIE's expectations, to reflect the changing state of the art in systematic review methods and to outline a new structure for reports in order to respond more specifically to different audiences. As such, the document comprises a combination of guidance and general frameworks for review teams, to clarify SCIE's expectations.

Esther Coren
Mike Fisher

Flowchart of systematic review process



Introduction

1. A SCIE knowledge review comprises two elements: a research review of available knowledge and a practice survey, which compiles examples of good practice in the relevant area of work, drawn from a survey of practice agencies.
2. This guidance focuses specifically on the research review component of knowledge reviews, which should be conducted systematically. Separate guidance is available on the conduct of practice surveys. In this document, the practice survey is considered in terms of its relationship with the research review, and the dialogue between the two processes.
3. This guidance updates the guidelines produced in 2002. It intends to set out our expectations more precisely, better reflect the changing state of the art in systematic review methods more generally, resulting in reports that are more carefully tuned to the different audiences for SCIE review findings. A new detailed report structure, for reviews and protocols is announced in this guidance.
4. To clarify terminology – the terms research review (SCIE term) and systematic review (general term) are synonymous and used interchangeably within this document. These terms are sometimes shortened to 'review'. Please note that where the term review appears, it refers to systematic reviews and not to any other type of non-systematic review. Where reference is made to non-systematic reviews in this guidance, they are termed 'non-systematic reviews'.

Aim of this update

5. The aims are to ensure:
 - greater consistency in the conduct of SCIE knowledge reviews
 - that the guidance reflects the latest methodological developments and good practice, both within SCIE and elsewhere in the systematic review community
 - greater transparency and replicability of reviews
 - more consistent presentation of knowledge reviews and different formats for different audiences.
6. Our view is, however, that the guidance should be seen as a living document – it should develop as methods develop more generally. We will update the guidance regularly as required and plan a major review in three to four years' time.

Diversity

7. SCIE aims to become a leading organisation in the promotion of equality and diversity and to contribute to social justice through its work. Therefore SCIE's products and services seek to address and integrate knowledge of equality and diversity and be inclusive of the perspectives of people from black and minority ethnic communities and members of other minority groups.
8. Review teams will therefore be expected to provide evidence that they have incorporated the perspectives of people from black and minority ethnic communities. This is especially important when the review topic is considered particularly pertinent to people from these communities. Where possible, there should be representation from people from black and minority ethnic communities within the review team or advisory groups.
9. It is important to bear in mind in planning these elements of a review that service users and carers may come from marginalised, under-represented or stigmatised groups. It is therefore important that steps are taken to facilitate their involvement (see relevant sections and appendices).
10. Attempts should be made to incorporate the perspectives of user and carer groups and people from black and minority ethnic communities into the review. There may not be available research literature that covers these views on the specific topic. It is therefore expected that searches include grey literature as well as user testimony to capture these perspectives. Furthermore, an important dimension of quality assessment of included studies is the section that considers user involvement in design of primary research.

Evidence in systematic research reviews: the SCIE approach

11. Systematic review methods can be applied to any type of question. Indeed it is SCIE's position that, in most cases, transparent and replicable methodology should be applied to all forms of literature review in the interests of quality and reliability⁵.
12. In common with other fields in the social sciences, there is not currently a consensus in social care as to what constitutes evidence, how it should be gathered and synthesised or how quality should be appraised. This guidance therefore takes a pragmatic position on these issues, with the intention that it will be revised and updated as further developments arise.
13. For questions related to policy and practice, the position in this guidance is that empirical research, whether qualitative or quantitative in design, provides the best evidence of effectiveness of particular interventions or approaches to intervention. Within the term empirical research, SCIE includes the systematically

collected views and experiences of users and carers. Research that includes the views and experiences of users and carers allows an additional and vital perspective on how problems are defined, what helps and what hinders the effectiveness of services, and whether a service is acceptable and accessible. Where the views and experiences of users and carers are not available through research, other forms of user and carer testimony should be taken into account.

14. Where it is not possible for this testimony to be quality assessed (e.g. where user testimony has not been gathered as part of a research study), reviews should report this transparently.
15. Thus, the core of a SCIE systematic review is empirical research evidence and user and carer testimony.
16. Evidence may be informed by other knowledge such as theory and debate, which has a clear role in the development of interventions and approaches. Such information may be important background information to a review. The evidence on which review findings are based, however, should primarily be derived from empirical research, with key information incorporated from user and carer testimony to ensure contribution on the impact of interventions from a user and carer perspective.
17. Where possible, where reviews report outcomes, they should aim to include information on harm as well as benefit arising from interventions reviewed, among the outcomes reported.

What is a research review?

18. The aim of conducting a research review is to gather together systematically a comprehensive, transparent and replicable review of all the knowledge in a particular area, including the five knowledge sources identified in social care¹ (see paragraphs 25–31). SCIE research reviews are intended to evaluate the effectiveness of interventions and they may also address other questions including how and why interventions work. Some reviews will focus on implementation questions and, sometimes broader questions of policy and practice. Knowledge reviews are focused on a precise question that is informed by the concerns of the various stakeholders in a review, and refined and explicated in a protocol (see paragraphs 47–51).
19. There are many approaches to such reviews, and there has been much recent development, including ‘realist synthesis’⁶. This guidance does not currently cover all such types of reviews. If review teams commissioned by SCIE are interested in working with this or other methods not specifically included in this guidance, this should be discussed and agreed with the SCIE project manager at an early stage.
20. The ‘systematic’ component of the term *systematic review* refers to the transparent, rigorous and comprehensive methodology, as described in detail in this guidance. Contrary to popular misunderstanding, the use of the term is not dependent on the types of data or study designs included in reviews, although methods vary a little depending on the study designs to be included. As such, all reviews should be conducted systematically, using transparent, replicable methods.
21. Much of the development to date in systematic review methodology has taken place in the healthcare arena. As such, this guidance sometimes draws on examples and references from systematic reviews in healthcare, where they have a bearing on relevant methods.
22. As such, many systematic reviews of social care topics may be breaking new ground methodologically. It is therefore important that review authors disseminate and share these developments in order that the field may progress. Paragraphs 167 and 209–210 include more discussion on this. Additionally, SCIE will actively gather and disseminate evidence of such developments, and expect review teams to assist with this process, and add to it through their own dissemination opportunities in publications and conference presentations.

What is included in a systematic review?

23. A systematic review includes any knowledge that exists in answer to a particular question. The aim is comprehensive coverage. In practice, explicit and comprehensive electronic and manual searches are undertaken to find relevant research literature, user testimony and other sources of material to be included in the review.

Forming a review team

24. Many different types of expertise are needed to complete a SCIE systematic research review. A review team or its advisory group should therefore optimally include the following: users and carers of the service in question, other subject experts in relation to the topic, managers, practitioners and policy makers, methodological expert(s) with experience of systematic reviews, and information or search specialist(s) with expertise in searching electronic bibliographic databases.

Five types of knowledge in social care

25. As has been mentioned earlier, it is important that the five types of knowledge identified in social care¹ are incorporated in knowledge reviews. Below is a list of these knowledge types and possible ways they can be incorporated into knowledge reviews. Most literature included in a research review is research evidence, for which methods exist to review it systematically.

Policy knowledge

26. It would be usual for policy guidance, legislation and other policy information to be incorporated into the background section of a review to ensure the appropriate context is incorporated into the review.

Organisational knowledge

27. Any relevant information from providers and regulatory bodies would be summarised in the background section. Where services have been evaluated, information from specific organisations might be included in the research review. This might include information on barriers and facilitators to improving the intervention or service, and other organisational information in relation to working practices or service delivery, where these have an impact on the review question. It would be likely in most cases that the practice survey element of the knowledge review would capture specific perspectives from organisational experience.

Practitioner knowledge

28. Practitioners may be involved either as part of the team conducting the review or as members of advisory or stakeholder groups. Additionally, practitioner knowledge might be captured in the research review through the incorporation of any relevant research or other published material. This knowledge might include information on barriers and facilitators at the practitioner level to improving an intervention or service, and other practitioner-level information in relation to working practices that have an impact on the review question. Practice surveys also capture practitioner knowledge and experience, and this is a key area where practitioner views are included in SCIE knowledge reviews.

User knowledge

29. Service users and carers ideally should be involved, either as part of the team conducting the review or as members of advisory or stakeholder groups. Additionally, as specified in Searching (paragraph 97 onwards), specific attempts should be made to locate sources of user testimony in searches. Similarly, such knowledge might be captured in searches through the incorporation of any research or other published material that presents user views or experiences.
30. The purpose of collecting this data is always to ensure that user and carer views are represented so that their perspectives on the impact and utility of the intervention are included in the evidence base.

Research knowledge

31. Research knowledge is primarily captured in knowledge reviews through searching databases of published and unpublished research studies, and the incorporation of this in the research review component of the knowledge review.

Systematic mapping

32. Systematic mapping is a process developed to map out the existing literature on a particular topic. This process is based on a clear search question, inclusion and exclusion criteria and extensive searching. These stages are followed by a keywording process that describes the studies but does not attempt a full data extraction and quality assessment. This builds on methodological developments at the EPPI-Centre^{7,8,9,10}. For more detail see also, for example, Harden¹¹ and Oakley¹². Among other things, systematic mapping may help to identify which questions are answerable and in what ways. The report of the first systematic map produced by SCIE, which gives more detail on these processes, is now available¹³.
33. In some cases, reviews will be based on such a systematic map of the literature produced in-house by SCIE. If so, there will be implications for the review teams. First, the map will clarify which aspects of a question may be answered in a review and where there are gaps in the primary research. Second, there will not be a need for review teams to engage in extensive searching, as most will be complete. Third, SCIE may specify how the data from the systematic map should be used in any particular commission. If a team has been identified to conduct the review, it is likely that its members will be involved in the mapping process. Where this is the case, the stages of involvement will be negotiated on a case by case basis. In some cases, it may be that as a result of mapping, it is deemed inappropriate to continue with a full systematic review where evidence is scant.
34. The in-house mapping project is still under development. At a later date, additional guidance will become available that addresses more specifically the

implications for reviews where a systematic map produced by SCIE is available.

Descriptive mapping for systematic reviews

35. It is often the case in social science reviews that there are few empirical studies (scientific studies with findings based on observations made about events/experiences that have occurred and been reported) that answer the review question. It may be, however, that there are studies that are relevant to the question but that don't answer it explicitly – for example, papers that describe an intervention or opinion pieces that discuss aspects of an intervention or the theoretical background to it. It is useful to place a review in the context of the wider literature in the field. In order to do this, descriptive maps are constructed that incorporate this wider literature and thus place the in-depth review in context of the wider literature that informs it, using the same process as that used in systematic mapping (see paragraphs 32–34; 69–72; 127–129).

Mapping by review teams

36. Where possible, review teams should map all literature relevant to their field of enquiry, and thus incorporate more information in the review than is covered by the empirical studies alone. This enables greater potential for steering the project at the interim report stage, and enables the empirical research included in the in-depth review to be set in context of the wider literature.

Transparency and replicability

37. All parties involved in a particular area have their own agendas and intentions in contributing to the literature. The aim of the dimensions of transparency and replicability is to ensure that the review is as objective and as unbiased as possible, and that the nature of any influence operating on the perspectives in a review is made explicit and transparent, so that hidden bias is avoided.
38. Furthermore, it should be possible for anyone else to conduct the same review and come to the same conclusions – hence replicability. To this end, methods should be described in such a way that the process is very clear to the reader.
39. A key aspect of this replicability is the protocol, which sets out explicitly in advance the aims, methods and processes of the review. The protocol should ensure that the review is conducted systematically. Central to this is the aim that the review answers the question set initially, rather than being mainly influenced by emerging findings.
40. In line with this transparency, the limitations of any team's perspectives should be noted in the review discussion section. This should include the presence or absence of user, carer and practitioner views within the review team.

New report structure

41. Currently, SCIE knowledge reviews are presented as full reports (with substantial technical appendices) and as a plain English summary. The summary is made available in Welsh.
42. Full reports may be lengthy and not aimed at the non-technical reader. They are also expensive to produce as printed copy. Our proposal is to retain a plain English summary, but to make a distinction between the main report and the technical report. Both reports will be written by the review team.
43. The technical report should be up to 40,000 words and should provide the detail required to satisfy the technical reader: it will be referred to in the main report and made available as a web download. The main report will be 10–15,000 words and aimed at the non-technical reader: it will be printed and used in dissemination.
44. A draft of the technical report should be produced by the first deadline for the project. The main report should be completed within three months of this date. A quality assurance process will be undertaken to ensure that this report is consistent with the technical report. Separate guidance will be written to underlie the structure of these main reports.
45. The structure for the technical report is given in Appendix 1. All sections must be completed. Our contracts will specify the maximum word lengths and we expect teams to adhere to them.

Peer review

46. The final reports of reviews will be sent to three peer reviewers, usually including methodological, subject and user experts, with the possible additional inclusion of policy makers and practitioners. In addition, there will be an internal SCIE review process ensuring adherence to all guidelines and commissioning documents. Both final payment of invoices and publication will always be dependent on satisfactory completion of all suggested changes. Quality assurance of protocols is discussed in paragraphs 49 and 50.

Review protocol

47. There are two primary purposes of the protocol. The first is to ensure a systematic approach. The second is to improve transparency and to ensure that the approach to the review is likely to answer the question in an appropriately rigorous way. The protocol should be based on the commissioning and scoping documents set out by SCIE. The commission will specify the timescale for agreeing the protocol with SCIE, which will normally be within four weeks of the start of the commission. SCIE project managers should be mindful of these timescales when reviewing protocols, as delays could affect the progress of the commissioned review. Protocols should be no more than 4,000 words, with no more than 1,500 of these devoted to background discussion. The text of a protocol, transferred into the past tense, should be included in the final review report.
48. The protocol is equivalent to a short draft of the methods section of the final technical report, with a background section to set the project in context. For each heading, reviewers should follow the guidance in the main review section on that topic, to ascertain SCIE's expectations at each stage.
49. Protocols will be subject to quality assurance and may need to be redrafted following this input. It is hoped that the process may enable any difficulties to be resolved at an early stage.
50. SCIE's aim is to include at least two peer reviewers with appropriate expertise for the quality assurance process. These are likely to be drawn from the following types of contributors although this will vary: methodological, policy and practice assessors with a possibility of academic input where necessary. Strong input into reviews from advisory groups, including representatives from these groups, may influence the selection of assessors.
51. The report structure for a protocol should use the headings described in paragraphs 52–77. In this section of the guidance, there is only a brief reference in most cases to what is required at protocol stage. For fuller understanding of all the issues in each area, please see the relevant sections under 'Detailed review processes' (paragraph 82 onwards).

List of abbreviations

52. All abbreviations used in the text of the protocol should be clarified: e.g. National Society for the Prevention of Cruelty to Children (NSPCC). As the review progresses, any new abbreviations that arise should be added to this section.

Potential conflicts of interest

53. Anyone commissioned to contribute to the review or serving in an advisory capacity should declare any previous or ongoing involvement in the topic in question. Examples of such involvement might be if a reviewer has written on the topic, developed programmes in the area, engaged in any relevant consultancies or experienced social care services in the area.

Background

54. This should set out the background to the topic including any legislative, policy-specific, regulatory or performance assessment background context to the review, and include coverage of the relevant policy and organisational documents eg. Audit Commission reports. In addition, any uncertainties in relation to the effectiveness or acceptability (to users/carers/minority groups/practitioners/ other stakeholders) of services/interventions should be discussed. This should not be a comprehensive overview of the field, or particularly lengthy, rather an opportunity to set the scene. If there are debates in the field about the theory or conceptual background of the topic or intervention, these should be identified briefly here.
55. The background section of protocols/reviews should summarise the state of research knowledge to date in relation to the review question. Where previous systematic reviews have been conducted on related questions these should be summarised^{14,15}. The background section should be no more than 1,500 words in length.
56. If systematic reviews are found that answer the same or a very similar question to that posed by the current review, there may not be the need for a further review. If this occurs it should be discussed with SCIE as soon as possible.

Objectives

57. Ideally, the objectives should be obvious from the background to the review. These should set out in more detail what questions the review is seeking to answer. In view of timescales available, there should be no more than five main objectives for the review.

Criteria for inclusion of studies in the review

58. Inclusion and exclusion criteria underpin the whole review (see paragraphs 92–96). They should arise directly from the question and should be explicitly stated in the protocol and in subsequent reports of the review. This is crucial as it helps readers to understand the process of identifying studies to be included, and to consider the likely applicability of the review for their purposes. Where relevant,

it is also useful to divide these into sections where eligibility criteria differ for the map and for the review.

59. Separate sub-sections should be included under 'Criteria for inclusion of studies in the review' in both the protocol and the review to identify the criteria for inclusion in the map section, and those that apply to the in-depth review.

Searching

60. The search strategy is based on what the search is looking for (inclusion criteria) and not looking for (exclusion criteria) (see paragraphs 97–117). For the protocol it is sufficient to describe the planned search strategy in general terms. The areas it is necessary to include are the databases to be searched, a general plan in relation to search terms, any restrictions of the search (e.g. language, dates), and other planned searching such as handsearching, citation tracking, websites and personal contacts with authors. The planned role in locating literature of members of any stakeholder group (see paragraphs 82 and 85) should also be specified.

Methods of the review

61. All the sections below to paragraph 77 should be completed for a protocol, as relevant to the planned methods for the review.

User/stakeholder involvement

62. Protocols should outline plans to involve stakeholders in the review, together with some detail as to the role stakeholders will play in the process (see paragraphs 82–91). These plans should follow the guidance in the main section on this topic. Ideally, all stakeholder groups should be involved including service users and carers, practitioners, policy makers and researchers. Where possible, the composition of these groups should reflect the ethnic and cultural background of service-user groups, and involvement of users and carers from black and minority ethnic groups is strongly encouraged.
63. In particular it is important to outline at the protocol stage the ways in which the reviewers plan to involve users of the specific services that are the focus of the review, and any plans to support those users to participate in this process (e.g. mobility/childcare/transport issues).
64. It is for the review team to decide whether to use an advisory group. If an advisory group is used, the team should detail in the protocol the composition and the frequency of contact, whether this contact is face to face or by email, together with the specific role of the group at which stages of the review.

Screening of studies

65. Reviewers should state in the protocol the proposed methods for applying the inclusion and exclusion criteria to retrieved studies (see paragraphs 122–126). This process is also known as screening. In particular it is important to state how many reviewers will view each title/abstract, and how consistency between reviewers will be established.
66. SCIE requires that the level of agreement between those involved in screening is recorded and presented in the review. The protocol should state how any differences of opinion will be resolved (for example by moderation, by another reviewer or by consensus).

Descriptive maps

67. Descriptive maps describe the literature retrieved from the search that is relevant to the review. The coding of the map is constructed by keywording the studies in the map as described in paragraphs 69–70 and 127–129. The map should include the studies that will be included in the in-depth review, but should not exclusively focus on these, as the aim is to map the literature as a context for the in-depth review. Such maps are usually prepared for SCIE research reviews. These may comprise a simple numerical account of the frequencies in each category or be more complex¹⁶. A useful example for descriptive map reports is to present data by topic focus, publication date, intervention type, evaluation/study design and country of study. More categories are available and should be determined on a review-by-review basis.
68. There is no quality assessment of studies included in a descriptive map.

Keywording for the descriptive map

69. Keywording is a process used to describe and categorise the studies included in a map. It is described in detail in paragraphs 128–129.
70. For the current draft core keywording tool for social care, see Appendix 3. The final version, which will be available from SCIE, should be used for all reviews. In addition, in consultation with SCIE and other stakeholders, teams should devise a tool that is review-specific, in which there should be no more than 10–15 categories to enable mapping of review-specific items. Coding the map using these keywording tools will enable reports such as described above to be completed for discussion at the interim report stage. For an example of a question specific keywording tool, see Appendix 4.

71. In some cases, the map may summarise themes in a more lengthy conceptual or theoretical overview. This can be useful but is time-consuming and may impact on timescales and resources. Furthermore, if study findings are included without quality assessment, this may be potentially biased. Agreement should therefore always be sought from SCIE before embarking on such a piece of work.
72. Where conceptual or theoretical material from the descriptive map is summarised without full data extraction and quality assessment, such summaries should be reported separately from the synthesis of studies included in the in-depth review that have been subject to full data extraction and quality assessment.

Data extraction

73. For the protocol, it is sufficient to give a brief outline of the data extraction method – electronic or otherwise, whether a software package will be used, (strongly recommended – see para 135) and in which broad areas data will be extracted. It is also important for the protocol, to define how many reviewers will extract data, and how the process will be quality assessed to ensure consistency and reliability. Data extraction is discussed in more detail in paragraphs 130–144.

Quality appraisal of included studies

74. As with the data extraction section of the protocol, at this stage it is important to outline how quality appraisal of studies will be conducted, which study features will be appraised, and how consistency between coders will be assured. It may be necessary to consider different types of quality appraisal for different study types, as noted in more detail in paragraphs 145–171
75. This section should also include information on how weighting between studies will be ascribed, and how this information will be utilised in the synthesis. More information on weighting is provided in paragraphs 152, 153, 155, 171, 179, 207 and 208.

Data management/synthesis (to include methods of determining headings in synthesis)

76. This section of the protocol should outline how data extracted from the studies will be synthesised in the review. There may be a need for different sections discussing the synthesis of different types of data.
77. A quantitative (statistical) meta-analysis may be used to synthesise numerical data. However, it is likely that many reviews will not contain data that are appropriate for this method. It therefore probable that some narrative synthesis will be necessary. Where data are qualitative, thematic analysis is likely, and some of the headings for this should be considered in advance. It may be necessary to amend these following the protocol submission, once the reviewers are more familiar with the literature. However, it remains important to have some a priori (initial) consideration of what might be useful themes for analysis in any particular topic. More detail on methods of synthesis is provided in paragraphs 175–192.

Interim report

78. In addition to a protocol at one month, we propose (for full reviews) an interim report about a third of the way through the commission.
79. This interim report should report on the search and mapping stage and identify decisions made in a flowchart style, similar to Figure 3.1 of the EPPI report structure (see Appendix 2). When a map has been drafted, a meeting between the SCIE project manager and the commissionees should decide on the best way to take the review forward in the light of the information gathered so far. The descriptive map should always be the starting point for such a meeting. Where no such map has been developed, the meeting will use the findings from the search as the basis for the way forward.
80. Where a stakeholder or advisory group has been established, it is good practice to consult it prior to meeting with SCIE, to enable stakeholder perspectives to be brought to bear on decisions about the next steps.
81. The research review should feed in ideas for ways forward on the practice survey where appropriate. If known at this stage, it would be useful if any such ideas could be included in the interim report and associated discussions.

Detailed review processes

User and stakeholder involvement

82. The involvement of stakeholders in the systematic review process can have a number of objectives. These include:
- ensuring relevance of the review to stakeholders (who may include service users and carers, practitioners, policy makers, researchers)
 - accountability of the project to stakeholder groups
 - empowering service users and carers
 - assisting in steering the project at various decision points
 - identifying additional sources of literature. including user testimony and agency literature not identified through other sources.
83. Different stakeholders in a review may have different needs to help them participate in a review. It should be made explicit and transparent in what capacity different advisers are contributing. SCIE places a high priority on service user and carer involvement and therefore the emphasis in this guidance is on good practice in relation to this group.
84. It is especially important for SCIE reviews that as far as possible service users and carers who are involved in the process have experience of the services that are being evaluated in the review. It is important to avoid the tokenism of simply involving a user or carer without trying to ensure that he or she is an expert through experience of the particular intervention or service under review. Where it is not possible to involve users and carers with this experience, this should be transparently reported. Where possible, the composition of these groups should reflect the ethnic and cultural background of people who use the services, and involvement of people from black and minority ethnic groups is strongly encouraged. The recruitment process for all stakeholders should be transparently reported.
85. The involvement of all stakeholders, particularly service users, carers and practitioners should, as a minimum, assist in determining the scope of a review and the outcomes that are relevant to them. They may also play a key role in assisting the review team to identify sources of literature to include in the review, particularly sources of user testimony. There are ways, however, that all stakeholders can contribute at all stages in the process – time, availability and resources permitting.
86. Many review teams develop advisory or stakeholder groups to contribute to different stages of the process. As a minimum, such groups should have the opportunity to contribute to the protocol, to steering the project at interim report stage, and at draft final report stage.

87. It may also be necessary to involve advisory or reference groups in interpretation or conclusions as review authors may not always have the experience to interpret findings accurately and understand their application. It may help to have a wider group than the review team discuss the draft report and conclusions.
88. The impact of financial payments to service users and carers who participate in projects is the subject of a SCIE report¹⁷. It is strongly recommended that review teams consult this document to inform any payments that are planned for user and carer participants in systematic reviews. Further guidance from on this is available from SCIE.
89. Interim guidance on the involvement of service users and carers in systematic reviews has been developed by SCIE – see Appendix 5.
90. Furthermore, a series of examples of user and carer involvement in systematic reviews has been commissioned, and will be available on SCIE's website from autumn 2006. These are intended as a resource for commissionees and should be consulted for ideas of innovative practice in this area, to add to the existing example by Braye and Preston-Shoot¹⁸. We intend to continue to add to this methodological resource as more examples become available.
91. The contributions made by all those involved in a review should be transparently recorded in the review process section as described in Paragraph 217.

Inclusion/exclusion criteria

92. These criteria should be based on a clear review question, and should articulate precisely on what basis studies will be included or excluded from the review. They should arise from the question and the objectives. For questions that relate to effectiveness or for other questions that relate directly to an intervention, these should normally be based on the following areas:
 - participant or user group (e.g. children in foster care)
 - type of intervention (e.g. individual payments)
 - setting for intervention (e.g. community based only, or community and institutional settings; any rural/urban issues)
 - who provides the service (e.g. are services provided by healthcare providers to be included, or only those provided by social or care workers?)
 - the outcomes to be considered (e.g. independence, placement stability, parenting skills)
 - the types of studies to be reviewed (e.g. empirical evaluations only, or empirical evaluations and user views studies; any exclusions e.g. studies with insufficient data).

93. Where studies are to be excluded due to insufficient data having been reported in those studies, this should be made explicit in the report of the review. If the insufficient data includes lack of detail of study methods it is important that the number of studies in this category is reported, and information presented as to the dimensions of missing information. Where studies have been excluded due to lack of detail of the study methods, this should be made explicit, together with the number of such reviews and the extent of the missing information. Any such information will be used for ongoing SCIE work in relation to reporting quality.
94. Other than where insufficient information is reported to assess quality, studies that otherwise meet the inclusion criteria should not be excluded on quality grounds. Rather this information should be used to weight studies in synthesis as discussed in paragraphs 75, 152, 153, 155, 171, 175, 207 and 208.
95. There should be separate headings to identify criteria for inclusion in the descriptive map, and criteria for inclusion in the in-depth review. Most usually, the main distinction is likely to be in the area of types of studies, where the map is likely to be more inclusive than the review. In many cases, the map may enable some further direction to be obtained in relation to inclusion in the in-depth review.
96. The process of determining these criteria should be recorded and included in the technical review report.

Searching

97. The aim of searching in a systematic review is to find as many potentially relevant items as possible. This section looks at searching on electronic databases and also using internet and other searching to identify all relevant literature such as user testimony.
98. There is usually a trade-off in searching between specificity (very specific searching that may limit the retrieval) and sensitivity (broader searching that may lead to very extensive retrieval which will likely include a higher proportion of irrelevant information). It is also important to bear in mind that not all research or relevant information is published in peer-reviewed journals, so searches of relevant websites, contact with specialist practitioners and researchers, and service users and carers who are experts by experience, are also important. This includes, where it applies, the review's advisory group, and searches of websites that list ongoing research (e.g. National Research Register, CERUK database). All searching should be reported transparently, so that someone else undertaking the same search should be able to obtain the same result.
99. It is strongly recommended that reviewers use a reference management system (e.g. Endnote, Procite, Reference manager) to screen and manage the retrieval of studies. This will make record keeping much easier. It should be possible to upload from electronic databases into such software packages. For review teams using EPPI Reviewer, it is possible to manage references within the one package (see paragraphs 220–221 on software to support the review process).

Search strategies

100. Searching is a specialised skill and review teams are strongly advised to seek advice from information scientists or specialists in refining the search strategy. A little time spent on this will save a great deal of time later.
101. In general, search strategies are devised by developing strings of terms, linked together with BOOLEAN operators (AND/OR/NOT), together with other codes specific to the databases. It is therefore useful to have developed a clear review question and to divide it into sections for the purpose of developing appropriate search strings.
102. For example, to search for items on the topic of day care for children with learning disability you might use the following:
(terms for) children OR (other terms for) children AND (terms for) learning disability OR (other terms for) learning disability AND (terms for) day care OR (other terms for) day care.

103. The search strategy developed to underpin electronic or other searching should be included as an appendix to the eventual technical report. In addition to specifying the terms used, the search strategy should cover any general limitations applied in the search (e.g. English language materials only, or materials from a restricted time period).

104. SCIE encourages reviewers to search for appropriate material in all languages. This is accepted to be the most unbiased approach, taking evidence from the health sector¹⁹. There may however be reasons for particular reviewers to search for English language only (e.g. a particularly UK topic focus, or pragmatic time-constraints). In the interests of transparency a decision to search only in the English language should always be described and explained in both the protocol and the review.

105. The search strategy should contain:

- date the search is conducted (e.g. 1 February 2005)
- date limits set on records to search (e.g. 1999–2006) and rationale
- any language limits set on records to search and rationale
- exact search terms used for each database.

106. In addition to database searches as detailed below, search strategies should be designed to capture user testimony and 'grey' literature (literature which has not been formally published) e.g. King's Fund and Joseph Rowntree Foundation literature. Grey literature can also be found on Social Care Online. The main database for finding grey literature is SIGLE but this has not been updated since 2005. However, despite being slightly out of date at the time of writing, it remains one of the most comprehensive databases for grey literature. Lexis Nexis is also a useful resource and contains public opinion pieces, media releases etc. NB: quality of reporting issues need to be taken into account when searching Lexis Nexis.

107. A further potentially useful source of information about ongoing or completed studies may be proceedings from relevant conferences, locally and internationally. Web searches should help identify relevant websites and contact details.

Bibliographic databases for SCIE systematic knowledge reviews

General tips for database searching

108. Once a draft search strategy has been devised, it is good practice to run that search on one year of one (likely high yield) database (e.g. PsycINFO for a mental health topic), to assess potential fitness for purpose of the strategy. This enables potential refinements to be made at an early stage, and again, may save time later. However, all bibliographic databases are different so there may need to be some repetition of this process for different databases, and development of appropriately different search strategies. All refinement processes should be reported in the review technical report.

109. Another tip when devising search terms is to look at the keywords (terms used to describe entries in a bibliographic database) of a relevant retrieved paper, and add these terms to the search strategy. It is always worth piloting search strategies and revisions to search strategies, to assess what difference is made by using new or different terms, before running the search strategy very widely, as suggested above.
110. It is always important at this stage to remember that terminology alters with time and historic terms will need to be employed when searching databases (e.g. 'elderly' changed to 'older people').

General databases

111. The following databases should always be considered for searching. It is not intended that all reviews will search all databases, but reasons should be given for any exclusions. If access to databases is difficult in some institutions, teams should consult with SCIE.

- Applied Social Sciences Index and Abstracts (ASSIA)
- C2-SPECTR
- C2-RIPE (Register of Interventions and Policy Evaluations produced by the Campbell Collaboration)
- CINAHL
- Cochrane Library (CDSR, CENTRAL)
- DARE (accessed via Centre for Reviews and Dissemination (CRD) website: www.york.ac.uk/inst/crd)
- Dissertation Abstracts
- EMBASE
- Health Management Information Consortium Database (HMIC)
- International Bibliography of the Social Sciences (IBSS)
- Medline
- PsycINFO
- Social Care Online (SCO)
- Social Sciences Citation Index
- Social Services Abstracts
- Social Work Abstracts
- Sociological Abstracts
- System for Information on Grey Literature in Europe (SIGLE)
- Wilson Social Science Abstracts
- ZETOC

Specific databases

112. In addition to those listed above, any databases specific to the topic should be considered, such as ChildData or AgeInfo. Where the review includes interventions that might be either classed as educational or offered in an educational setting (e.g. some interventions aimed at young people such as teenage parents), The British Education Index (BEI) and Educational Resources Information Centre (ERIC) may be useful additional databases.

Additional searches

113. Additional searches of specific journals should be considered (including handsearching and searches of electronic tables of contents/journal hosts), together with the results from following up references in retrieved material (citation tracking) and from personal contacts and personal databases. Recent methodological work shows the importance of author tracing, using personal contacts and other methods to identify studies²⁰. However, clear cut-off times should be given for this in view of the tight timescales for reviews. This should be clearly written up in the technical report.
114. Existing sources on systematic reviews do not offer agreed guidance on handsearching, and a range of criteria and practices is used. Ultimately, criteria for handsearching is for reviewers to decide, but one approach that should be considered is to restrict it to recent issues of key journals, on the basis that there may be delays in their contents reaching the electronic databases. Selecting key journals is again a task for the reviewers, but one technique that should be considered is to use the results from the searches of electronic databases to identify the most frequently sourced journals. An example of this in operation is *SCIE Knowledge Review 6 (pp 61-62)*²¹. It is perfectly legitimate to include material identified through these means, provided that the method of locating the work is clearly described and provided it meets the review inclusion criteria.
115. Some journals are indexed in their entirety on Social Care Online (SCO) (www.scie.org.uk/sco/index.asp). In these cases it is likely to be necessary to handsearch only the last couple of issues to account for a time lag in indexing. A list of these journals (up to date in October 2006) is included as Appendix 6.
116. It is good practice to track citations that appear to refer to relevant studies cited in retrieved material, and where appropriate to include these in the review. This process should be reported in the review.

Duplicate reports of one study

117. Where several reports are retrieved of one study, whether due to a fuller report being available on the internet, or from funders, or different aspects of a study being published separately leading to separate publications, or for some other reason, all reports that meet the inclusion criteria should be included in the review and cross referenced. These should be listed as separate references but as one study, and the study should count once in terms of the number of included studies in the review. Where any difficulty or confusion arises with this aspect, it should be referred to SCIE.

Inclusion of systematic reviews

118. Where searches find previous systematic reviews on related topics, the included studies should be assessed for eligibility for inclusion in the review in hand. We recognise that not all systematic reviews focus on the same exact question, so it is more likely that the included studies will be eligible for inclusion than the reviews themselves. The report of the search should include a heading 'Studies identified from previous systematic reviews' to clarify the origin of these articles.
119. If systematic reviews are found that answer the same or a very similar question to that posed by the current review, there may not be the need for a further review. If this occurs it should be discussed with SCIE as soon as possible.

Recording the flow of information through the review

120. To record the flow of information through the review, it is expected that a flowchart similar to EPPI-Centre Figure 3.1 (Appendix 2) will be included. Ideally, a partial version of this should be available with the map of studies, for discussion at the interim report stage. This flowchart reports the:
- number of items found in searches
 - number of items found by other means (personal contact, stakeholder input, handsearching, citation tracking)
 - inclusion/exclusion of items:
 - number excluded on preliminary screening, and reasons
 - number of full-text items retrieved
 - number excluded on full-text screening, and reasons
 - number included in systematic map
 - number included in the in-depth review.
 - number of useful citations retrieved from each database against total number of hits.
121. An example of a search report from a recent SCIE knowledge review²¹ has been reproduced as Appendix 7. In addition to the information in tables, some text is required to describe the processes at each stage, and the search strategy for each

database should be reproduced in full as an appendix to the technical report. The flowchart described above (in Appendix 7) should be included in the text of the review report, with a brief textual description of the flow of literature.

Screening of studies

122. Reviewers should state in the protocol how studies will be screened for relevance for inclusion in the review. These methods should also be reported in the review report. This is normally a two-stage process, with titles, and abstracts being screened and then full text where possible, screened at the second stage, for those titles thought to be potentially relevant. It is usual for further studies to be excluded at this stage. In our experience, second-stage decisions are often more marginal, in the sense that studies may be harder to determine as definitely included or definitely excluded, and require greater care. Over-inclusion of such marginal studies should be avoided in the interests of time-management. The important consideration is whether or not a study addresses the review question (inclusion and exclusion criteria).
123. Potentially, both human error and bias are introduced when only one reviewer screens data at any stage of a project. Therefore, a proportion of studies screened at the first stage by one reviewer should be checked by another (advise minimum of 20 per cent). As a minimum, the first stage of screening should be undertaken by one reviewer, with a proportion double-checked by another (advise minimum of 20 per cent). Preferably both stages of screening should be undertaken by more than one reviewer, although we recognise that resources may not allow for this. At the second stage, SCIE now requires that all items are screened by more than one reviewer.
124. All screening decisions should be recorded and presented in appendices to the full final report. An example of a flowchart for this purpose is included as part of Appendix 7. Exclusion decisions should be recorded, reasons for exclusion listed, and the numbers excluded for each reason clearly stated. Exclusion reasons should be drawn from the inclusion and exclusion criteria. Protocols should also state whether included studies are to be included in the full review or in the map of research, which should have wider inclusion than the in-depth review.
125. As noted earlier, this process will be much easier where reviewers use reference management software. In particular, there are usually empty fields in these databases. One of these may be used to record initial decisions e.g.: exclude/order full text/got full text, and another to record reasons for exclusion e.g. not about the target population/not about the target intervention/ inappropriate study design etc.
126. SCIE requires that the level of agreement between those involved in screening is recorded and presented in the review. The protocol should state how any differences of opinion will be resolved (e.g. by moderation/by another reviewer/ by consensus etc.).

The mapping stage

Descriptive map

127. The purpose of the descriptive map is to enable a picture to be provided of the field in which the review literature is located. Data included in the map should be keyworded according to the core social care keywording strategy, and topic specific keywords to number no more than 15 additional questions. Ideally, keywording should be managed using a database or spreadsheet to facilitate later output of data. These data should be presented in the project interim report to provide a basis for discussion to steer the ongoing review work.

Keywording process

128. It is important that keywording tools are piloted at an early stage by all team members who will engage in the process. Review specific keywording tools should be established that aim to capture the salient features of the studies in relation to the review question, whilst not aiming to be a comprehensive data extraction. Later reports can be generated from these, so care should be taken in defining them. It is important to pilot the use of the question-specific coding strategy, in order that any difficulties or inconsistencies of use can be ironed out early on. It is important to report in the protocol and the technical report how consistency of application is established between the team members conducting this stage of the review. SCIE can provide further guidance on these methods if needed.

129. Examples of the draft social care keywording tool and of a question-specific keywording tool are available as Appendices 3 and 4 respectively.

Data extraction

130. The purpose of data extraction is to describe the study in general, to extract the findings from each study in a consistent manner to enable later synthesis, and to extract information to enable quality appraisal so that the findings can be interpreted. Ideally this should be undertaken in such a way as to require minimal reference to the original papers at data synthesis stage. Essentially, the data extraction forms for each study provide a bridge between the primary studies and the data to be included in the review. Thus, the data collected on the data extraction forms provide the basis for the quality appraisal, analysis and synthesis of data stages in the review.
131. To minimise human error and bias, and to increase transparency, data should be extracted by a minimum of two reviewers, with a final version for use in the review agreed between the two. A word of warning: data extraction can be time-consuming. Do not underestimate the time this can take, and ensure there is enough time allowed for this process.
132. Having said this, it is good practice not to include too many abbreviations in data extraction to avoid confusion, as it is likely that reviewers will share data extractions at synthesis and writing-up stages.
133. Appendix 8 is a sample data extraction form. This form may be adapted for use in individual reviews as necessary, or forms may be designed for individual reviews. If the latter option is chosen we would not expect that fewer aspects of data are extracted than those contained in the sample form. The form should be designed in a logical way for ease of use. Forms should be piloted by all reviewers likely to be engaging in the data extraction process on at least three of the included studies. Reviewers should also set up internal quality assurance processes within the review team, to ensure consistency of recording of information and interpretation of the different elements of the form.
134. The sample form contains guidance on the kind of information to be included in each section.
135. Data extraction forms can be managed in Microsoft Word, Excel or Access. Access may be extremely useful as it enables exploration of relationships between different domains to be conducted electronically, which may aid synthesis. However, some review teams may choose to use a paper data extraction form, which is entirely acceptable. Where review teams are supported by the EPPI-Centre (as some SCIE teams are), EPPI Reviewer software would be used for all stages of the review including data extraction. (See paragraphs 220–221 on software to support the review process).

136. Data extraction should not be conducted using abstracts alone, as recent methodological demonstrates that abstracts alone are not always reliable sources of information²³.

Reporting of study characteristics in the review

137. In the 'Description of included studies' section of the final review report, a table should be included that briefly describes each study. Some data extraction systems enable this information to be produced automatically from the data extraction database (e.g. EPPI Reviewer). (See paragraphs 220–221 on software to support the review process.)

138. Below is an example of the kind of information required in this table for a review of interventions:

Reference for study	Participants	Intervention	Outcomes measured	Research method	Summary of findings
authors, year, title and publication details	number recruited, ethnicity, age and gender where important, type of population e.g. social work students, children in foster care, adults with schizophrenia	include type of intervention (e.g. day care facility), who delivered by (e.g. counsellors, social care professionals, peers), frequency (e.g. daily, weekly, drop in), intensity (e.g. one hour, two hours)		e.g. single group pre-post test, participant observation, randomised controlled trial (RCT))	

139. A useful example of such a table from a completed review appears as Table 6.1 on pages 175–176 of the text on systematic reviews in social science by Petticrew and Roberts²⁴.

140. One further point is that the data extraction of qualitative studies is as important as that for other kinds of studies. Good qualitative data synthesis (QDS) requires reviewers to get to know a small selection of studies extremely well – much as when researchers analyse qualitative interviews. However, most QDS uses the results of the data extraction to identify common themes, occasionally referring

back to the original studies, rather than working primarily from the original text. This means that good data extraction, following criteria agreed by the review team and validated by checking across the team, will provide the mainstay for the QDS. Where there are electronic versions of published studies, text can be cut and pasted into data extraction forms. SCIE's report on QDS gives examples of data extraction⁴.

141. It is good practice for review teams to decide whether they will report quotations verbatim or whether the reviewers will summarise quotes for the review. Whichever is decided, this should be made explicit in the review and the protocol and done consistently.
142. Data extraction for qualitative studies has an additional component. Quality appraisal should accord greater weight to studies that appropriately support their interpretations with quotations of the views of participants. It is sometimes important to record these quotations in the data extraction forms because they can then be used to capture themes or conceptual categories. In SCIE's report, for example, older people were sometimes reported as saying such things as 'there's no point in making a fuss' or that they understood that nurses had to work according to 'their system'. The recording of the direct quotations sensitises the reviewers to the theme or category (here the issue is how to explain low levels of participation in decision-making) and can then be replayed into the report of the synthesis to lend greater authenticity (see for example, pages 35–36 of SCIE's Report 9)⁴.
143. This process of examining qualitative data extracted from studies can be assisted by using computer-assisted qualitative data analysis software (such as Atlas/ti or NVivo or any other software that allows searching of text extracts). The process involves exporting the textual comments into the software package and using it to assist the identification of themes or categories. Again, SCIE's Report 9 gives a brief example of this process (see pages 32–34 and Appendix D)⁴. For information on computer-assisted qualitative data analysis see the CAQDAS website (caqdas.soc.surrey.ac.uk/) (See paragraphs 220–221 on software to support the review process).
144. Data extraction processes for all study types should be reported transparently in the review report. Software can both support the process of analysis and the transparency of both analysis and reporting (see paragraphs 220–221).

Quality appraisal of included studies

145. This section is intended to outline SCIE requirements for quality appraisal of included studies. Where SCIE commissionees have their own frameworks for quality appraisal for use in systematic reviews, these may well be acceptable, as long as they incorporate the assessment of different study designs. In all cases, this should be discussed and agreed with SCIE at an early stage of project work.
146. The purpose of quality appraisal is to determine the relevance and trustworthiness of the findings of individual included studies^{25,26}. The 'quality' being assessed in this section is the quality of the research, not the quality of the intervention. The reason that this is important is that assessment of research quality has a direct bearing on the strength of the evidence provided by the study within the review. A study conducted in a biased or unethical way will have less trustworthy results than a similar study conducted in an unbiased and ethical way. Similarly, a study that is only partially relevant to the review question will have less weight than one that is more fully relevant. All such studies may be included in a review. The purpose of weighting (paragraphs 75, 152, 153, 155, 171, 179, 207 and 208) is to distinguish between them in the synthesis in terms of their contribution to answering the review question^{31,33}.
147. For qualitative data, there is less consensus in relation to quality assessment than there is for quantitative research^{27,28,29}. A systematic review of 31 different tools for the assessment of quality in qualitative data found a large number of domains of quality³⁰. In a presentation based on the findings of that review, Harden noted – from the 545 domains of quality identified within the different tools – the following examples of distorting factors that might affect the findings of qualitative studies:
- Sampling and sample
 - inappropriate or unjustified selection of cases or participants
 - inadequate description of sample
 - Data collection
 - asking wrong questions
 - failure to keep 'following up'
 - Data analysis
 - failure to search for negative cases
 - selective use of data
 - Products of data analysis
 - lack of variation in theory or explanatory concepts
 - interpretations that do not fit data

148. These domains might help guide review teams in thinking through quality assessment in a review. However, they are drawn from 31 tools developed for different purposes. Tools used should always be fit for purpose in relation to the studies being appraised.
149. For a full discussion of quality appraisal and for further resources in quality appraisal – checklists, received wisdom, good practice – see Chapter 5 (pages 125–163) of Petticrew and Roberts²⁴.
150. The purpose of reporting quality appraisal should always be to enable the reader of the review to make an informed judgement about the value of knowledge gained from different sources. Reviewers should therefore report explicitly and transparently the criteria for their appraisals.
151. Quality appraisal of included studies may differ with different types of knowledge. The TAPUPAS* framework was explicitly developed as part of the review of types of knowledge in social care discussed in Pawson, Boaz et al¹ to address the need for single instrument covering a range of knowledge types. Work is underway to consider how this framework might be developed for general use.
152. It is important that quality appraisal is used in synthesis to weight the findings from different studies so that conclusions can be drawn that reflect the appropriate strength of evidence to be attached to any individual study. Clearly those studies with a greater strength of evidence should carry more weight than others when drawing conclusions or implications in a review.
153. In most cases, quality appraisal should not be used to exclude studies from a review unless insufficient information has been provided to enable the assessment of study quality. A low quality study will simply attract lower weighting than a high quality study.
154. Quality assessment for the purpose of systematic review has different dimensions: quality of study in its own terms and two dimensions of the relevance and appropriateness of the study for answering the review question^{31,33}. The dimension of relevance is important when managing large amounts of potentially includable literature which will have varying levels of relevance to the review question. These issues are outlined in turn below. Relevance to the review topic is dealt with first. Studies that are not eligible for inclusion in a review (see paragraph 122) would not be subject to detailed quality appraisal. In this context, study relevance applies only to included studies.
155. In EPPI-Centre reviews, a distinction is made between the dimensions outlined above that are then combined to provide an overall weight of evidence that the findings of a study have in answering a review question³¹. These dimensions are important for SCIE reviews, although not all SCIE review teams will use EPPI

*TAPUPAS: *Transparency, accuracy, purposivity, utility, propriety, accessibility, specificity*

methods explicitly. To reflect this the term 'strength of evidence' is used in these guidelines where not explicitly referring to the system in place at the EPPI Centre.

156. The dimensions of appropriateness of a study for answering the review question are important because the original primary (included) study may have been undertaken for very different reasons and in very different contexts from those of the review, so however well executed a study its approach may not fit that well with the review question (even if the study has met the inclusion criteria for the review). There are two main aspects of appropriateness. First, the focus (or relevance) of the study, which may be on the general topic addressed by the review question but may not be central to it in terms of sample, context, measure, analysis or any other aspect of the study. Second, the appropriateness of the study design for answering the review question. These issues are outlined in turn below, followed by sections on the quality of a study in its own terms for different study types.

1. Relevance to the review topic (all studies)

157. The following list may assist in assessing levels of relevance:
- Is the focus of the study relevant to this review?
 - Is the conceptual focus of the study relevant to this review?
 - Is the theoretical focus of the study relevant to this review?
 - Is the context of the study relevant to this review?
 - Is the sample or respondents included in the study relevant to this review?
 - Are the outcomes measured relevant to this review?
 - Are the ways of measuring outcomes relevant to this review?

2. Appropriateness of study design for answering the review question (all studies)

158. In some cases the inclusion criteria for a review will specify only one specific form of research design to be included, but in other cases a range of research designs are included. In the latter case, studies, however well executed, may vary in their ability to address the review question. For example, a very well executed large-scale experimental study may not be the strongest design for answering process questions. The relative fitness for purpose of different research designs for answering different questions is a contested issue, which makes it even more important that the bases of such judgements in a review are made clear and explicit in the reporting of all stages of a review (see paragraphs 171–175) ⁴.
159. Some generic criteria are included below, together with minimum criteria for each type of knowledge and references for further consultation about these issues.

3. Quality of study in its own terms

Minimum generic criteria (all empirical studies)

160. Is the study design appropriate to the study's question?

- Did users and carers participate in the design of the study?
- Was consent to participate obtained from study participants?
- Was the purpose of the study explained honestly to the participants?
- If representative sampling was used, was the sampling frame (selection of participants) representative of the population being studied, including different ethnic groups if appropriate to setting, location etc?
- If representative sampling was used, did all eligible participants have an equal chance of being recruited?
- Was sampling random or purposive?
- If purposive sampling was used, is the rationale for this clear?
- Were all people recruited into the study present at the end of the study?
- Is an account given of people who discontinued participation and their reasons?
- Were data collected by persons independent of the service or intervention delivery?
- Were data analysed by persons independent of the intervention delivery?
- Have authors reported on all outcomes defined at the outset of the study?
- Have authors declared any interests they may have in the results of the study (e.g. financial or professional gain from the intervention)?

Minimum (additional) criteria for qualitative data

161. SCIE's worked example concerns the views of older people on hospital discharge and four quality markers were used:

- a. strength of design – whether the studies reported material relevant to the research question
- b. centrality of older people's perspectives – whether the study reported older people's views (or, for example, those of their carers)

- c. quality of reporting and analysis – whether the studies gave enough depth and detail to give confidence in their findings
- d. generalisability – whether the studies assessed the relevance of their findings to the wider population and/or context.

162. It is vital to get quality markers right. It will not be possible to undertake a good synthesis unless the assessment of quality is sufficiently detailed. For example, the synthesis should give greater weight to studies that directly concern the review question and those people affected by the service in question, and to those studies that give greater confidence in their findings by reporting depth and detail and relevance to wider populations and contexts. Reviewers will rely on some studies more than others because they are assessed as having higher quality, and they will find themselves constantly returning to the quality judgements during QDS.

Minimum (additional) criteria for quantitative data

163. Appraisal criteria for different types of quantitative study vary depending on the study design. A tool that is fit for purpose for assessing the quality of a randomised controlled trial (RCT) will not be appropriate for assessing the quality of a survey. It will be necessary when appraising different types of quantitative data to use an appropriate tool. One size does not fit all in this respect.

164. Where quantitative data are to be used in a review, reviewers should identify which appraisal tools are to be used. A selection of examples has been recently drawn together by Petticrew and Roberts and this is the best place to start²⁴. Additional material is available in the NHS Centre for Reviews and Dissemination (CRD) guidance, available on line and in hard copy³². A new version of the CRD guidance will be available in 2007.

165. Critical appraisal should always be discussed with SCIE at protocol and interim report stage, to ensure that appropriate plans are in place and appropriate tools are available.

166. Minimally, quantitative studies should appraise the following in addition to the generic criteria listed above:

- Were enough participants recruited to answer the study question robustly?
- Did all participants have an equal chance of being recruited to the study?
- Are enough data presented for results to be valid (on all variables: dependent/independent/outcomes)?
- Are enough data presented for results to be useful (on all variables: dependent/independent/outcomes)?

- If there is a comparison or control group, are they similar enough to the intervention group to be comparable?
- If there is a comparison or control group, were they treated similarly in the study? If not, was any attempt made to control for this?
- If there was a comparison or control group, how were participants allocated to groups, and by whom?

Quality appraisal of non-empirical studies

167. Quality appraisal is more complex for non-empirical studies as there is much less methodological evidence in relation to which aspects of appraisal reduce bias.
168. It may be important in some SCIE reviews to include non-empirical studies, for example to consider the theoretical context of a new initiative, or understand terminological and conceptual background in an overview of research (e.g. Taylor *et al*²²). Such an overview, where used in a review of effectiveness, should not include findings or outcomes. Clearly, to include any kind of synthesis of non-appraised studies potentially introduces bias. Therefore, it will now be necessary to include quality appraisal of such material in SCIE reviews. Further work is underway to assess the utility of the TAPUPAS framework (see paragraph 151) in the appraisal of non-empirical data and a discussion paper will be available in late 2006. In the meantime, non-empirical studies should utilise the relevance questions in paragraph 156, and the final question from the minimum generic criteria in paragraph 160: Have the authors declared any interests they may have in the results of the study (e.g. financial or professional gain from the intervention)?
169. Where no research studies that capture user views are retrieved in a review, the review may include user testimony from non-research sources. For the purposes of quality appraisal, these data should be treated in the same way as other non-empirical data.
170. As with the quality appraisal of empirical material, a table should be provided listing the non-empirical studies included, together with the quality appraisal results. If this table is too big to be included in the technical report, it may be included in an appendix, but a summary of the information should be reported close enough to the synthesis of these studies for it to inform the reader.

Overall strength of evidence

171. A review must report transparently how judgements on different dimensions of quality combine to provide an overall strength of evidence provided by each study (e.g. high, medium, low). Some review teams might decide to aggregate or average out the judgements made on the different dimensions of quality. However, SCIE encourages teams to report transparently the individual judgements on whatever dimensions are used according to available methodological knowledge in social care. Whatever judgement is made, it should be consistent across studies in any review and be explicitly reported. The EPPI weight of evidence system is acceptable as a framework for SCIE reviews.

Reporting of study quality in the review

172. In the 'Description of included studies' section of the final review report, a table should be included that briefly describes the quality of each study, incorporating the aspects of quality discussed above, as relevant to the particular study. It is also useful to consider the strength of evidence provided by each study as discussed above (e.g. high, medium, low), bearing in mind the assessments made in the different sections above (i.e. relevance and appropriateness combined with quality appraisal).

173. The EPPI-Centre Weight of Evidence system operates as follows. The table

- briefly describes the quality and relevance of each study, incorporating the three dimensions discussed above
- the basis for the judgement on each dimension
- the basis on which judgements on each dimension are combined to provide an overall weight of evidence provided by a study³³.

This system is perfectly acceptable for SCIE reviews.

174. For all SCIE reviews, weighting should inform and contextualise the synthesis, and be presented in the review in such a way as to inform the synthesis section.

Data synthesis

175. Data synthesis is the point in a review where data are brought together in answer to the question. This process should always be reported transparently in the review report, whichever types of synthesis are employed.
176. There are a number of types of data synthesis, and which is appropriate will depend on the type of data in the review. These are the types of synthesis included in this guidance and outlined in this section: research overview (non-empirical studies), statistical meta-analysis, narrative synthesis, qualitative data synthesis, mixed methods synthesis.
177. As research synthesis is a relatively young methodology, the methods reported here have been used in a relatively small number of reviews and by specific review teams. Such innovations tend to occur as part of the process of engaging in systematic review, as new methods are developed to meet challenges that teams experience. It is for this reason that an evaluation of review process (paragraphs 217–219) has been included, to enable review teams to report on developments that arise in their own work.
178. Where the data are available, the synthesis of empirical data (from empirical research studies that have been subject to in-depth quality appraisal) should be complemented by synthesis of user testimony. Where it has not been possible to quality appraise this testimony (if it has not been gathered as part of a formal research study), this should be noted in the text of the review. Such data should inform the interpretation of research evidence, particularly as regards the experience of users of participating in the intervention, and any barriers and facilitators to effectiveness, such as the acceptability and accessibility of the intervention to users. In these cases, the information should be used transparently, to add insight into user views on the question at hand, and to reflect this against other data collected.
179. Synthesis of data should always incorporate an assessment of the strength of evidence contributed by a particular study. Statistical meta-analysis usually accounts for this in the calculations made (by the software). Where synthesis is not statistical, as is likely in most SCIE reviews, reviewers should assess the contribution of studies by combining the level of relevance and the assessed quality of the study, to ascribe a weight (e.g. high, medium or low) to the study within the synthesis.

Research overview (non-empirical studies)

180. There is not consensus in the field regarding the inclusion of non-empirical data and not all review teams will wish to do this. However, where there is a summary of non-empirical studies that are included in the map but excluded from the in-depth review, some review teams will want to include such an overview. Due to

the nature of these studies, and the current state of knowledge in relation to quality appraisal of non-empirical studies, these are usually subjected to less rigorous quality appraisal than empirical studies (qualitative or quantitative).

181. The summary is often of opinions and theories, rather than empirical data. This may be important and relevant knowledge, but should not be termed 'evidence'. Summaries of such data should always be reported separately from the synthesis of evidence from empirical studies, and clearly labelled with an appropriate heading. Information from such summaries should also be separately reported in the results, conclusions and summary sections so that readers are clear what level of data is informing which messages.
182. Only findings/results/outcomes from studies that have been subject to full quality appraisal should be included in synthesis for SCIE reviews. This is because if it is not possible to ascribe weight to a study, its results cannot be included in synthesis, as the level of contribution to the results of the review cannot be presented.

Statistical meta-analysis

183. This method is appropriate where studies measure similar outcomes in a similar numerical way. Few SCIE reviews currently contain data amenable to this method. Where they do, reviewers should consult with the SCIE project manager for appropriate guidance. It is not recommended that review teams without experience of this method embark on it without further training. Some guidance developed for use in other review organisations is useful to consult for reference. See for example, Higgins and Green³⁴ and CRD guidance³².

Narrative synthesis

A general framework for narrative synthesis – from Popay et al: guidance to the conduct of narrative synthesis. Lancaster University, April 2006.

184. Narrative synthesis includes a description of the studies included and of the findings of the synthesis. Recent guidance suggests that narrative synthesis can be employed in any reviews, even where the main synthesis involves other specialist methods, and can include studies that use both qualitative and quantitative methods.
185. Recent guidance on the conduct of narrative synthesis has been produced by a team of researchers based at Lancaster, City, York and Glasgow Universities with funding from the UK Economic and Social Research Council. Popay *et al*³⁵ have identified four main elements to a narrative synthesis process:
- developing a theory of how the intervention works, why and for whom – the aim of which is to inform decisions about the review question, inclusion criteria and interpretation of study findings

- developing a preliminary synthesis of findings of included studies – the aim of which is to organise findings in order to be able to describe pattern across included studies
- exploring relationships in the data – the aim of which is to consider factors that might explain differences across study findings
- assessing the robustness of the synthesis – the aim of which is to assess the strength of the evidence included in the review.

186. As the authors of the guidance note, narrative synthesis should proceed in a linear fashion with these four elements being undertaken sequentially. In practice, reviewers will move in an iterative manner among the activities making up these four elements. Subsequent sections of the currently unpublished narrative synthesis guidance focus in turn on each of these elements in order to explain the aims in more detail and provide brief descriptions of tools and/or techniques that may be utilised in the conduct of a narrative synthesis. The guidance includes two demonstration syntheses – one a synthesis of evidence on effectiveness, the other focusing on evidence on implementation – which demonstrate the practical application of the narrative synthesis framework and the specific tools and techniques. A full copy of the guidance is available from j.popay@lancaster.ac.uk

Qualitative data synthesis (QDS)

187. Qualitative data synthesis (QDS) involves identifying common themes across primarily qualitative studies and might at first sight resemble a literature review. However, it is much more than this: it generates 'a greater degree of insight and conceptual development than is likely to be achieved in a narrative literature review'³⁶ and represents 'a conceptual development that constitutes a fresh contribution to the literature'³⁷.

188. One way of doing this conceptual synthesis is to see it in terms of three stages, identifying

- a. the findings from the primary studies, such as the meanings reported to researchers (sometimes called first-order interpretations)
- b. the constructs and interpretations that primary researchers place on these findings (*second-order*)
- c. explanations and hypotheses developed by reviewers arising from second-order interpretations (*third-order*).

For example, SCIE's Report 9 shows (in Table 8)

- a. a first-order finding that older people perceive doctors and nurses as having more expertise in health and illness
- b. a second-order interpretation that this creates dependency on staff for information (a researcher construct)
- c. a third-order interpretation that trust is undermined when people perceived as

experts do not agree and that anxiety increases when access to medical expertise is reduced (a construct arising from synthesis).

189. Once these stages have been undertaken and the key concepts are identified, a 'line of argument' is developed, or a reasoned case linking the concepts in a way that provides 'a coherent account of the field of study addressed by the synthesis' holds the synthesis together⁴.

190. The process of working through these three stages is as follows:

- The reviewers use the material provided by data extraction forms to identify findings and concepts: it is sometimes helpful to use software (such as Atlas/ti) to assist analysis. This process resembles a method of analysis known as grounded theory, in that it involves identifying conceptual categories and the studies (or extracts from studies) that support them.
- Core findings and concepts are compared across studies (sometimes this process is called 'translation' or 'reciprocal translational analysis'); a grounded theory approach is again relevant, in that the process resembles that of seeking similarities and differences between findings and concept. The process can also involve noting where expected similarities are not found and trying to explain why (sometimes called 'deviant case analysis' in grounded theory, akin to 'refutational analysis' in QDS).
- In this way, initial broad coding categories (e.g. participation of older people) are identified and tested until it is clear they are central.
- The reviewers should maintain an audit trail, linking synthesis statements to supporting studies or extracts and should cite the supporting studies or extracts in the account.
- The synthesis and the line of argument that links findings and concepts should then be written up in such a way as to make the process of analysis as transparent as possible; in the worked example provided by SCIE *Report 9*, the synthesis is tabulated in three columns showing the first-, second- and third-order stages (see pages 44-46)⁴.

Mixed methods synthesis

191. The EPPI-Centre has developed a mixed methods approach to data synthesis. In this method, two parallel reviews are conducted – one a traditional systematic review synthesising data from methodologically sound evaluation studies, the other a synthesis of qualitative studies that evaluate the views of service users about the intervention. A third process synthesises the two previous syntheses, enabling better understanding of the meaning of the findings from the quantitative synthesis. Illuminating findings in this way can enable clearer identification of directions for practice development^{8,39,40}. This is an advanced method of synthesis and is more resource- and time-intensive than conducting one single review. This approach should only be considered in consultation with SCIE.

General comments

192. Where different types of data are synthesised in one review, which is likely to be the case in most SCIE reviews (e.g. meta-analysis of numerical data and/or narrative synthesis of numerical and/or qualitative data) there should be separate subheadings for each in the data synthesis section of the report. A separate section should highlight any interaction between the different types of synthesis.

Relationship with practice survey

193. The practice survey is subject to separate guidance. Here the focus is how to relate the research review and the practice survey.
194. Occasionally, the practice survey may uncover written materials that have not been identified through database searching: they should then be assessed for inclusion in the review as described above and recorded as accessed through the practice survey. However, the main purpose of the practice survey is to allow access to practices and to tacit knowledge that may not appear in written material.
195. Essentially, in a knowledge review, what is required is a dialogue between the research review and the practice survey to explore whether:
- the practice survey reveals concerns that have not been subject to research investigation; in some cases, practice concerns may require a search to be refined in order to test whether relevant research is available
 - the research review reveals issues which have not been addressed or incorporated into practice
 - the practice survey indicates barriers to or facilitators of practice improvement, or implementation of good practice, that could then be incorporated into the recommendations for the development of a practice guide.
196. The practice survey should always enable examination of where practice is congruent with messages from research, not just where practice is inconsistent.
197. The research review should feed in ideas for ways forward on the practice survey where appropriate. If known at this stage, it would be useful if any such ideas could be included in the interim report and associated discussions.
198. In some cases, the timing may not permit a full dialogue between the research review and the practice survey. In such cases, the analytic report, produced as a separate summary of both elements together, would compensate for the shortfall.

Review findings

199. Care should always be taken when reporting review findings. As already noted, information from any synthesis of background or contextual literature that has not been fully quality assessed should always be reported separately and labelled clearly.
200. Findings from studies that answer the review question directly and which have been subjected to full data extraction and quality assessment (the in-depth review) should be reported under a heading 'Findings from the in-depth review'. These findings constitute the evidence for the review and should comprise the synthesised messages from the synthesis phase of the review.
201. It would be helpful if these findings are reported in a manner consistent with the objectives of the review as listed in the protocol, under appropriate headings. Other themes that have emerged from the literature should be clearly labelled. The process whereby these themes were identified should have been reported transparently in the data synthesis section.
202. It is important that the findings section is confined to evidence that is contained in the data synthesis and derives in a transparent way from the studies included in the in-depth review that meet the review's inclusion and exclusion criteria. This is not the place for extrapolations and hypotheses.

Discussion

203. Discussion of the findings of a review is essentially a question of interpretation of their meaning in the context of different needs and priorities, although this should always be strongly linked to the data in the review rather than focusing on interpretive discussion.
204. As noted earlier, it may be necessary to involve advisory or stakeholder groups in interpretation/conclusions, as review authors may not always have the experience to interpret findings and their application accurately. It may help to have a wider group than the review team discuss the draft report and conclusions.
205. A helpful starting point is to clarify any limitations in the methods of the review or of the studies included in the review, although in relation to the included studies this should at most be a summary of the quality appraisal data presented elsewhere in the review³⁴.
206. It is perfectly acceptable to utilise themes emerging from the literature, as long as this process can be made transparent. In doing so, reviewers need to be mindful of clarity of question and product, and the question that underpins the review. Where review teams wish to take account of the map of literature, and any thematic overview of these studies, this should be reported under a separate heading.

207. Experience in healthcare reviews from the Cochrane Collaboration suggests four dimensions that should be taken into account in the discussion of results:
- the strength of the evidence
 - the applicability of the results
 - other information, such as considerations of costs and current practice, that might be relevant to someone making a decision
 - clarification of any important trade-offs between the expected benefits, harms and costs of the intervention³⁴.
208. The strength of evidence should draw on the studies synthesised in the in-depth review. In particular, this should comprise the size and direction of any positive or negative results, the views of stakeholders about the problems and the intervention and, of course, the quality appraisal of the included studies and their weighting.
209. The applicability of the results may depend on issues of culture or context, or perhaps the relevance of the findings from studies conducted outside the UK to those conducted more locally. In particular, if there are populations not described in the included studies, this may represent a limitation to generalisability. The relevant populations to be considered in this regard will vary from review to review but may include black and minority ethnic groups, older people, rural populations, or a gender group (e.g. fathers may not be included in studies of 'parenting' interventions; differing demographic patterns in different ethnic groups may not be considered in relation to planning service provision for an 'ageing population').
210. Where such data are available, economic considerations are of course important, together with issues of current practice in the sector and the practicality of implementing any suggested new interventions.
211. Where applicable, any trade-off between benefit and harm should of course be included in the discussion. Information about the accessibility or acceptability of interventions to service users generally, and to black and minority ethnic groups in particular, might also be appropriately raised here.
212. If there are clear gaps in the evidence base they should be referred to here, although there is a specific section for this later.

Limitations of the review

213. This section should highlight any limitations of the review. This may include:
- limitations of the review team's representativeness
 - limitations to the search
 - limitations due to gaps in the evidence base for the topic (e.g. gender or ethnicity of participants in included studies; lack of evidence on any possible harm associated with the intervention).

Implications of the review

214. This section should draw directly from the findings and discussion section of the review, and should be relatively brief. It can be helpful for implications to be separated into sections as relevant to different stakeholders, although sections should only be employed where relevant to the findings of a particular review. The following subheadings may be useful:

- implications for users
- implications for carers
- implications for practice
- implications for policy
- implications for research

215. Systematic maps and reviews constitute a primary source of intelligence about gaps in the research base for the particular topic. They can also identify the huge variation in the quality of reporting that can make it difficult to identify the relevance of work and then to extract the required data.

216. Subheadings 'Gaps in the evidence base' and 'Quality of study reporting' should be included in all reviews so that gaps in research can be easily identified and any comment review teams have to make regarding the quality of the reporting in the field made explicit. Gaps in research concerning the availability of a user-led research base should also be highlighted in this section. Sufficient detail should be provided to enable such gaps to be addressed in future research planning. In the reporting quality section it would be useful if teams list the number of studies that they were unable to include due to insufficient data being provided in the study report.

Evaluation of review processes

Nature and impact of user and carer involvement

217. As noted elsewhere in this guidance and in Appendix 5, this area is under-researched, and therefore there are currently limited good practice examples to inform review methods. Whilst service user and carer involvement may be important in particular reviews, this aspect is not usually written up in review reports. SCIE is seeking to redress this balance by asking that this aspect of review method is written up in all new reviews. Possible headings within this section include:

- Recruitment of users and carers to participate in review
- Methods of involvement (e.g. via stakeholder or advisory groups; face to face, email or both)
- Dimensions of review that users and carers contributed to
- Impact of this on the review
- User and carer views about the process
- Any feedback to users and carers about the impact of their contribution on the review.

Evaluation of other review processes

218. In order to contribute to methodological development, review teams might also like to consider including any comment they have on other processes of the review. Possible examples include:

- reflections on quality appraisal of included studies
- reflections on synthesis of studies
- reflections on other processes (should be clearly defined).

219. Review teams may be invited to discuss these elements with SCIE separately, with a view to building on any new methodological developments or understanding through contributing additional written work, presentation at methods discussion forums and so on.

Software to assist the management of the review process

220. A systematic review is a major piece of research in its own right and requires careful planning, management and consideration of all the issues discussed in these guidelines. Software can be used to assist the different stages of a review and the transparency of that process. Software can be used to support, for example:

- bibliographic capture and management: bibliographic software such as Endnote, Reference Manager, Procite. These packages are powerful at managing bibliographic data but tend to have relatively few fields or much functionality for coding and management of other data in the review process.
- data extraction and data management: any relational database
- quantitative analysis and synthesis: statistical software such as Stata
- qualitative synthesis: software for thematic analysis such as Nudist, Nvivo, Atlas/ti or any other software that allows searching of text extracts. The process involves exporting the textual comments into the software package and using it to assist the identification of themes or categories. SCIE's Report 9 gives an example of this process (see pages 32–34 and Appendix D)⁴. For information on computer-assisted qualitative data analysis see the CAQDAS website (caqdas.soc.surrey.ac.uk/).

221. In addition, there are some web-based specialist software packages to support the process of conducting reviews. These include:

- EPPI-Reviewer (from the EPPI-Centre): for bibliographic capture, screening, data coding, quantitative and qualitative synthesis, review reporting and searchable databases of studies
- Review Manager (RevMan) (from the Cochrane Collaboration): for organising and managing Cochrane style reviews; statistical meta-analysis is included in this package
- SUMMARI (from the Joanna Briggs Institute): a suite of modules (some still in development) for supporting the stages of the review process including different types of analysis and synthesis
- Systematic Reviews SRS (from TrialStat): for screening and coding of studies.

Of the above list, RevMan is available free of charge and can be downloaded via the Cochrane Collaboration's website. The other packages are available on request and in most cases for some cost from the relevant organisations.

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Appendix 1

Draft SCIE systematic research review technical report structure 2006

Each section should be completed

Executive summary (final report stage only)
(subheadings to be specified so summary is structured)

Acknowledgements (final report stage only)

List of abbreviations

Potential conflicts of interest

Background

Objectives

Criteria for inclusion of studies in review

Search strategy

- Bibliographic sources
- Web based sources
- Regulatory/statutory sources
- Sources arising from practice survey
- User identified sources
- Studies identified from previous systematic reviews
- Personal communication
- Author tracing
- Other sources

Methods of the review

- User involvement
- Screening of studies
- Keywording strategy
- Application of keywording
- Descriptive map
- Data extraction
- Quality appraisal of included studies
- Data synthesis

From here on for final report only

Description of studies (map)

Thematic overview of studies included in map (where applicable)

Description of studies (in depth review)

Quality appraisal of included studies (in-depth review)

Data synthesis

Review findings

Discussion

Conclusions/implications

- Implications for different review user groups (as applicable)
- Gaps in research
- Quality of reporting of included studies

Process evaluation

- Nature and impact of user involvement (mandatory)
- Reflections on QA of research studies (optional)
- Reflections on synthesis of studies (optional)
- Reflections on other processes (should be clearly defined) (optional)

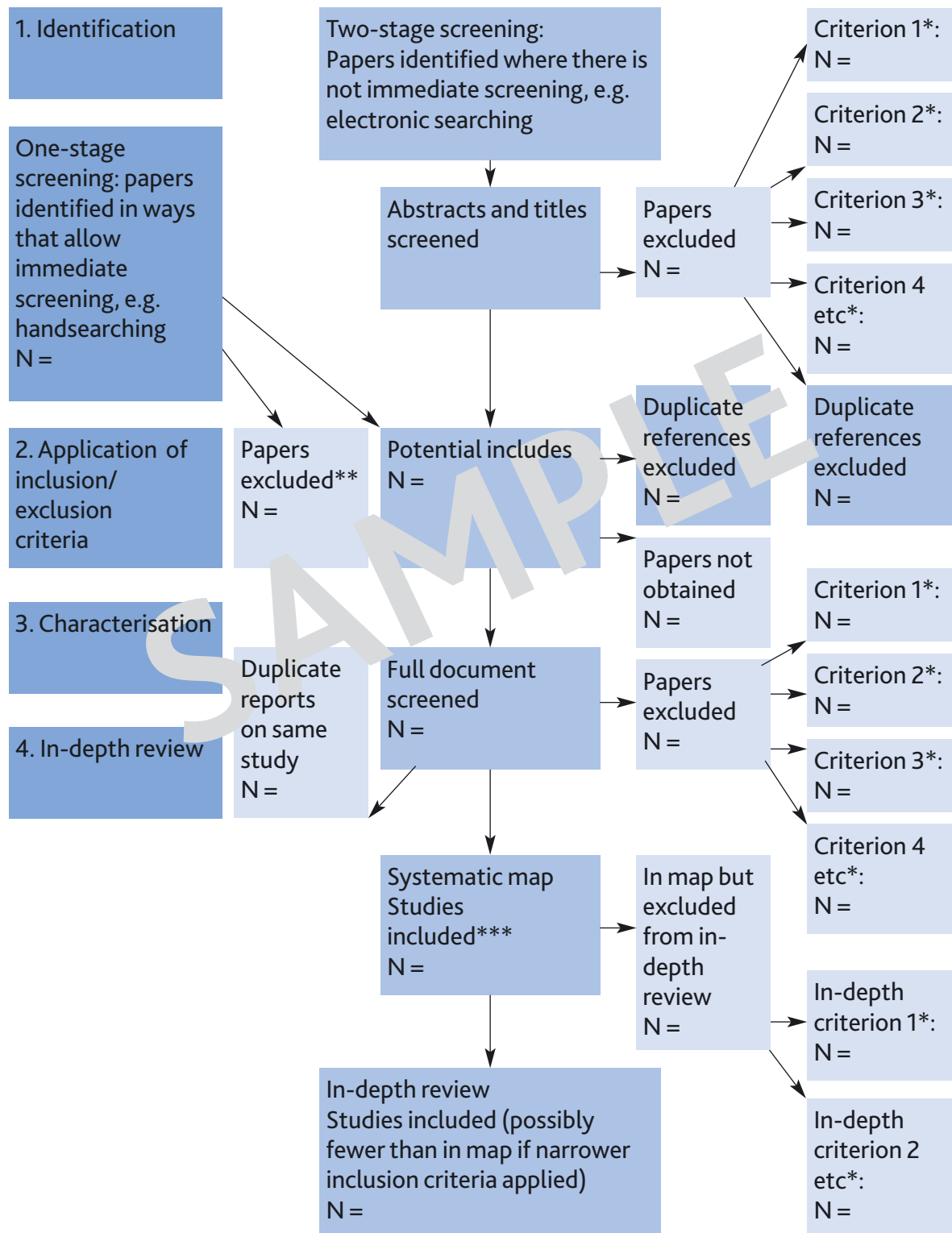
References

Appendices

Sources consulted: Cochrane Review structure; EPPI-Centre Review Structure

Appendix 2

Figure 3.1: Filtering of papers from searching to map to synthesis 2006



'Structure for a Review Report'. EPPI-Centre, Social Science Research Unit, Institute of Education, University of London. London 2004

Appendix 3

Social care keywording strategy

SCIE/EPPI-Centre	
Section A: Core keywords	
A.1 What kind of printed material does it concern?	A.1.1 book A.1.2 journal article A.1.3 other
A.2 What is the status of the report?	A.2.1 published A.2.2 in press A.2.3 unpublished (including ongoing project, communication from author etc) A.2.4 conference presentation
A.3 Which language is the study in?	English Other (add free text)
A.4 How were the keywords allocated?	A.4.1 title A.4.2 abstract A.4.3 full report
A.5 What type of study does this report describe? <i>You have to make a JUDGEMENT for yourself. Do NOT rely on what the authors indicate, but make a judgement by using the following definitions.</i>	currently being circulated for comments
Does this study report the 'views' of service users or carers? (ADD definition of views) (These may be present across the range of study designs)	YES NO (detail box)
A6 . In what country/countries was the study undertaken? (For a review or systematic review which includes studies from more than one country, code on the basis of which country lead reviewer was based in).	USA UK Republic of Ireland Canada Australia New Zealand Europe other (add to text box) Scandinavia (add to text box) Africa (add to text box) Asia South America

<p>A7. In what type of location was the study undertaken?</p>	<p>A.7.1 Urban A.7.2 Rural A.7.3 Urban and rural A.7.4 Not reported</p>
<p>A.8 Focus of the report</p>	<p>A.8.1 children A.8.2 families and parenting A.8.3 older people A.8.4 physical disabilities A.8.5 learning disabilities A.8.6 mental health A.8.7 criminal and youth justice A.8.8 social care education A.8.9 social care workforce A.8.10 inter-professional working A.8.11 stakeholder participation A.8.12 substance misuse A.8.13 abuse (physical, emotional, sexual, neglect) A.8.14 education A.8.15 suicide A.8.16 inequalities A.8.17 health promotion A.8.18 medical care</p>
<p>A.9 Characteristics of the study population</p> <p>Use however many apply.</p>	<p>A.9.1 general population A.9.2 infants A.9.3 children A.9.4 children and families A.9.5 adults A.9.6 older people A.9.7 adolescents A.9.8 BME (Black or minority ethnic group) (add free text description using author's words) A.9.9 SES (social and economic status) (add free text description using author's words) A.9.10 asylum seeker/refugee A.9.11 young carers A.9.12 physical disability A.9.13 learning disability A.9.14 mental health</p>

A.10 Cost indication of intervention	A.10.1 cost indication A.10.2 no cost indication
A.11 Person(s) providing the intervention	<p>qualified provider of mental health or emotional support (e.g. psychologist, psychiatrist, counsellor, nurse, psychotherapist, occupational therapist etc)</p> <p>qualified providers of all other health support (other than mental and emotional health)</p> <p>qualified social worker</p> <p>other social care provider (qualified or unqualified)</p> <p>educator (teacher, teaching assistants, social work practice teacher, any person providing training to carers and service users).</p> <p>community or youth worker</p> <p>residential worker</p> <p>researcher</p> <p>family provider (parent, sibling, grandparent)</p> <p>peer</p> <p>volunteer</p> <p>trained lay provider</p> <p>criminal justice system</p> <p>intervention provider unspecified</p> <p>day care</p>
A.12 Types of intervention	<p>counselling/psychotherapy/family therapy</p> <p>education /skill development/ training</p> <p>environmental modification</p> <p>CBT (Cognitive Behavioural Therapy)</p> <p>parenting classes/programmes</p> <p>legislation/guidance/informed practice</p> <p>physical activity</p> <p>rehabilitation (physical, cognitive, substance misuse)</p> <p>preventative intervention (screening/risk)</p> <p>multiple interventions (list)</p> <p>Residential care</p> <p>service access and resources</p> <p>social support (peer/mentor)</p> <p>intervention type unspecified</p> <p>other</p>

Appendix 4

Example of a topic-specific keywording strategy

Families with a parent who has a mental illness	
Section A: Generic – study design	
A.1 Is this paper a theoretical or conceptual piece of work?	A.1.1 Yes A.1.2 No A.1.3 Unclear
Section B: Generic – population terms	
B.1 What are the characteristics of the population?	B.1.1 BME (Black or minority ethnic group) B.1.2 (SES) Social and economic status B.1.3 young carers B.1.4 asylum seeker or refugee B.1.5 babies <i>0–23 months</i> B.1.6 pre-school <i>24 months–5 years in B.</i> B.1.7 children in need <i>Looked-after children, foster children, children on child protection register</i> B.1.8 physical disability B.1.9 learning disability B.1.10 other (please describe) B.1.11 single parent B.1.12 one-child family B.1.13 two- or more child family (add details) B.1.14 not applicable
Section C: Generic – type of intervention	
C.1 What type of intervention does the paper describe?	C.1.1 nursing C.1.2 mediation C.1.3 hospitalisation C.1.4 housing C.1.5 financial advice C.1.6 employment advice C.1.7 group work (describe) C.1.8 clinical intervention C.1.9 other C.1.10 not applicable

Section D: Potential review topics	
D.1 Does this study describe the detection of Parental Mental Health Problems (PMHP)	D.1.1 yes D.1.2 no D.1.3 unclear
D.2 Does the study describe the extent of PMHP?	D.2.1 yes D.2.2 no D.2.3 unclear
D.3 Does the study describe the impact of PMHP?	D.3.1 yes D.3.2 no D.3.3 unclear
D.4 Does this study describe the effectiveness of interventions or services for PMHP?	D.4.1 yes D.4.2 no D.4.3 unclear D.4.4 not applicable
D.5 Does this study describe the acceptability of interventions or services for PMHP?	D.5.1 yes D.5.2 no D.5.3 unclear D.5.4 not applicable
D.6 Does this study describe the accessibility of services for PMHP ?	D.6.1 yes D.6.2 no D.6.3 unclear D.6.4 not applicable
	D.7.1 domestic violence D.7.2 dual diagnosis D.7.3 substance misuse <i>Alcohol, prescription or non-prescription drug abuse</i> D.7.4 language problems D.7.5 literacy problems D.7.6 stigma <i>Individual is affected by negative perceptions of PMHP</i> D.7.7 discrimination <i>Individual or family are actively and unfairly denied opportunities available to others, or subject to verbal or physical abuse.</i> D.7.8 criminal justice system involvement D.7.9 supportive network (family, friends, community etc) D.7.10 isolation D.7.11 other D.7.12 not applicable

Appendix 5

Interim guidelines for service user and/or carer participation in systematic reviews

Introduction

SCIE is politically committed to service user and/or carer participation in all aspects of its organisation and work. Therefore, as part of SCIE's role in knowledge production for social care, innovative participative approaches to systematic reviewing are being resourced and encouraged.

By undertaking and recording service user and carer participation in the systematic review element of SCIE knowledge reviews, commissionees can make a valuable contribution to developing new, inclusive methodologies in secondary research.

Principles and practice

Systematic reviewing is a comparatively new practice within social care research. Service user and carer participation in this particular research activity are not common and the conceptual and practical issues involved remain relatively under-explored. However, SCIE's view is that systematic reviews will be improved by participation by users, carers and practitioners, as well as researchers.

The evidence about involving service users and carers is still emerging, therefore these guidelines are at an interim stage pending the availability of more evidence of good practice. They are designed to help commissionees think about some of the issues and options concerning service user and carer participation in systematic reviewing. SCIE is also commissioning reports of user participation in reviews as examples of possible good practice models. These should be available by December of 2006.

While there are fundamental principles for participation in general that must be adhered to¹ current knowledge suggests that there is no single, failsafe solution to service user and/or carer participation in the systematic review process².

Nonetheless, there is a clear principle that 'participation needs to be appropriate to its context and to take account of the issues involved, the objectives sought and the... [service users and/or carers] who make up the target group'³. This would include the option for a systematic review to be carried out entirely by service user researchers in a user-controlled project team⁴.

Diversity

1. SCIE aims to become a leading organisation in the promotion of equality and diversity and to contribute to social justice through its work. Therefore SCIE's products and services seek to address and integrate knowledge of equality and diversity and be inclusive of the perspectives of people from black and minority ethnic communities and members of other minority groups.
2. Review teams will therefore be expected to provide evidence that they have incorporated the perspectives of people from black and minority ethnic communities. This is especially important when the review topic is considered particularly pertinent to people from these communities. Where possible, there should be representation from people from black and minority ethnic communities within the review team or advisory groups.
3. Service users and carers may come from marginalised, under-represented or stigmatised groups. It is therefore important to bear this in mind in planning these elements of a review and that steps are taken to facilitate their involvement. It is also essential to bear in mind when recruiting service users and carers for systematic reviews that the process can sometimes favour some service users and carers over others. Attempts should always be made to ensure that selection incorporates representative perspectives.
4. Attempts should be made to incorporate the perspectives of user and carer groups and people from black and minority ethnic communities into the review. There may not be available research literature that covers these views on the specific topic. It is therefore expected that searches include grey literature as well as user testimony to capture these perspectives. Furthermore, an important dimension of quality assessment of included studies is the section that considers user involvement in design of primary research.

Developing systematic review methodology

Traditional methods of systematic reviewing can function as inflexible scientific procedures that are potentially exclusionary and alienating, both in terms of participation and the type of research included. Having a more open and creative approach to systematic review techniques, without compromising academic rigour, will allow for greater degrees of empowering practice. There are potential opportunities for participation at each of the standard stages of a systematic review at which key decisions are made:

- selection of topic (interventions, populations)
- setting the research question and conceptual framework and developing the protocol (including outcome measures)
- defining relevant studies (inclusion/exclusion criteria)

- searching exhaustively (search strategy)
- describing the key features of studies (data extraction form)
- assessing their quality (quality appraisal criteria)
- synthesising findings across studies (e.g. themes to dominate analysis)
- drawing conclusions
- communication and engagement⁵

It is up to the project team to empower service user and/or carer team members or project participants to make fully informed choices about levels of involvement in the review process. While it may be more likely for service users and/or carers to want to be involved in question setting, protocol development, analysis and drawing conclusions, people should have the opportunity to choose. Being transparent is vital.

This key principle on choice identified for children and young people is relevant for the participation of any service users and/or carers:

It is important to keep in mind that children may not want to be involved at this stage of the research. They may think that secondary research is boring ... The important thing is not that children do what you want them to do but that they are able to make an informed decision about what is and is not of interest to them. Once you have this information, it is much easier to work with them to explore options and make a plan for their involvement⁶.

Illustrative examples

Although there are very few worked examples of service user and/or carer participation in the systematic review process, particularly as regards older people, the following give an idea of how three different approaches have worked.

Cases for change⁷

Cases for change is a narrative review of adult mental health services, published by the National Institute for Mental Health England (NIMHE) in January 2003. A researcher with lived experience of using mental health services was employed as part of the core project team and was also a member of the project 'expert panel'.

Drawing on their direct experience, the project team members recorded some key messages about user involvement in secondary research.

- Having a service user as a core part of the research team ensures a user perspective is included in every aspect of the research.
- There is no single 'right answer' – rather a series of different stakeholders with different views about how best to reform mental health services. This makes it all the more important that a user perspective is included in these debates.
- Researching alongside service users can challenge the assumptions, language and attitudes of other research team members – as health and social care professionals,

two out of three of the main researchers in this study have worked in agencies that have contributed (directly or indirectly) to the negative experiences of the third team member.

- User involvement can support service users to return to work, develop new skills and boost confidence and self-esteem.
- Do not employ a single service user as a researcher – having more than one user on the team gives greater scope for peer support and helps spread the workload.
- Ensure that everyone involved in the study is aware of the importance of user involvement and is committed to it. This includes members of the expert panel as well as support services such as pay roll and human resources.
- Seek financial/welfare rights advice before starting so that payments to user researchers do not damage the benefits they may be receiving.
- Above all, keep talking and keep trying – user involvement is difficult and we do not always get it right, but the benefits far outweigh the limitations and meaningful involvement in research is something worth striving for.

Review of consumers' perspectives on electro convulsive therapy (ECT)⁸

This systematic review was carried out by two user researchers and two clinicians in a user-controlled project team based within the Service User Research Enterprise (SURE) at the Institute of Psychiatry. The project also had a reference group comprised of user representatives of organisations with an interest in ECT, some of who had experienced this particular treatment.

Teaching, learning and assessment of law in social work education⁹

This SCIE-commissioned knowledge review included a systematic review in which both service users and carers participated. The project team's approach was to use mixed stakeholder conferences with workshops informed by group work theory.

The two conferences [served] different purposes at key stages of the research. The initial conference would have two objectives: first, to seek views on the content and process of the study, finalising the research questions and concluding the protocol; second, to consider participants' perspectives on law in social work education, and on law in social work practice. The second conference would also have two objectives: first, to evaluate the data obtained from the systematic literature review and practice survey, reviewing emerging findings and making recommendations for the final report; second, to consider the broader implications for education, practice and subsequent research. Participants became an influential reference group to which the researchers presented their plans and later their findings for review. Participants also actively contributed their perspectives on the relationship between law and social work, how they saw social workers practising within the legal framework, and what this means for student learning¹⁰.

Service users and carers were actively recruited from user-led organisations and were the majority stakeholder group at the events. Participants also had the option to submit their contributions in other ways. The project team was careful 'not to exclude people through inflexible adherence to [a] particular format for involvement'¹¹. The creation of a culture of feedback and transparency was seen as vital.

Sarah Carr 05/07/05

References

- 1 Levin, E. (2004) *SCIE resource guide 2: Involving service users and carers in social work education*, London: Social Care Institute for Excellence, available from www.scie.org.uk/publications/resourceguides/rg02.pdf [title in italics as presume available in printed form as well - whereas ref below is online only?] - YES
- 2 Save the Children (2004) 'So you want to involve children in research? A toolkit supporting children's meaningful and ethical participation in research relating to violence against children', Stockholm: Save the Children, available from www1.rb.se/Shop/Archive/Documents/2958%20Want_to_Involve_Children_in_Research.pdf
- 3 Treseder, P. (1996) *Empowering children and young people: a training manual*, London: Children's Rights Office/Save the Children.
- 4 Rose, D., Fleischmann, P., Wykes, T. and Bindman, J. (2002) *Review of consumers' perspectives on electro convulsive therapy*, London: Institute of Psychiatry.
- 5 Based on EPPI-Centre (2005) Standard stages of a systematic review in EPPI-Centre (2005) EPPI-Centre Systematic Research Synthesis Workshop Manual p 12.
- 6 Save the Children (2004) p 21.
- 7 Clark, M., Glasby, J. and Lester, H. (2004) 'Cases for change: user involvement on mental health services and research', *Research policy and planning* vol 22 pp 31–38. www.scie-socialcareonline.org.uk/repository/fulltext/96255.pdf
- 8 Rose, D., Fleischmann, P., Wykes, T. and Bindman, J. (2002) *Review of consumers' perspectives on electro convulsive therapy*, London: Institute of Psychiatry.
- 9 Braye, S. and Preston-Shoot, M. (2005) 'Emerging from out of the shadows? Service user and carer involvement in systematic reviews', *Evidence and Policy* vol 1, pp 173–193
- 10 Braye and Preston-Shoot (2005) p 180
- 11 Braye and Preston-Shoot. (2005) p 181

Appendix 6

Journals that are listed in their entirety on Social Care Online

A life in the day
Administration in social work
Adoption and fostering
Adoption quarterly
Affilia: journal of women and social work
Asia pacific journal of social work and development
Australian social work
British journal of social work
Canadian social work review
Child abuse and neglect
Child abuse review
Child and adolescent social work journal
Child and family social work
Child and youth care forum
Child care in practice
Child maltreatment
Child welfare
Children and schools (former title: Social work in education)
Children and society
Children and youth services review
Clinical social work journal
Clinical supervisor, the
Cognitive behavioural social work review, the
Community care
Dementia: the international journal of social research and practice
European journal of social work
Groupwork
Health and social care in the community
Health and social work
Housing, care and support
Indian journal of social work
International journal of social welfare
(former title: Scandinavian journal of social welfare)
International social work
Irish social worker
Issues in social work education
Journal of adult protection
Journal of applied research in intellectual disabilities
(JARID) (former title: Mental handicap research)
Journal of ethnic and cultural diversity in social work) (former title: Journal of multicultural social work)

Journal of evidence based social work
Journal of family social work
Journal of gay and lesbian social services
Journal of gerontological social work
Journal of HIV/AIDS and social services
Journal of human behavior in the social environment
Journal of immigrant and refugee services
Journal of integrated care) (former titles: MCC: Building knowledge for integrated care)
Journal of religion and spirituality in social work: social thought)
(former title: Social thought)
Journal of social policy and social work
Journal of social service research
Journal of social work
Journal of social work education
Journal of social work in disability and rehabilitation
Journal of social work in long term care
Journal of social work practice
Journal of social work practice in the addictions
Journal of teaching in social work
Journal of technology in human services) (former title: Computers in human services)
Ljetopis studijskog centra socijalnog rada (Annual of Department of Social Work)
Maatskaplike werk (Social work)
Mental health review
Mental health today
New technology in the human services
Nordisk sosialt arbeid
Practice: a journal of the British Association of Social Workers
Probation journal
Professional social work
Psychoanalytic social work
Qualitative social work
Research matters
Research on social work practice
Research policy and planning
Revija za socijalnu politiku (Journal of social policy)
Scandinavian journal of social welfare
(continued as: International journal of social welfare)
Scottish journal of residential child care
Smith college studies in social work
Social policy and society: a journal of the Social Policy Association
Social policy journal, the
Social service review
Social work
Social work and social sciences review
Social work education

Social work in Europe (merged with European journal of social work)
Social work in health care
Social work in mental health
Social work now: the practice journal of child, youth and family
Social work research (former title: Social work research and abstracts)
Social work with groups
Therapeutic communities
Working with older people
Youth justice: journal of National Association For Youth Justice

Appendix 7²²

Sample report of search strategy

Databases

The choice of databases to search was determined by SCIE's guidance on systematic reviewing. The databases included in the search were:

Database	Database name in full
ASSIA	Applied Social Sciences Index and Abstracts
BEI	British Education Index
Care Data	
CINAHL	Cumulative Index to Nursing & Allied Health Literature
Cochrane	
C2-SPECTR	Campbell Collaboration Social, Psychological, Educational and Criminological Trials Register
Dissertation Abstracts	
ERIC	Educational Resources Information Center
HMIC: DHZZ	Health Management Information Consortium
HMIC: KFND	
IBSS	International Bibliography of the Social Sciences
Medline	
PsycINFO	
SIGLE	System for Information on Grey Literature in Europe
Social Services Abstracts	
Social Work Abstracts	
Sociological Abstracts	
SSCI	Social Sciences Citations Index

ZETOC and Wilson Social Science Abstracts were not searched as initial investigation suggested that the amount of useful material they would provide would not justify the time taken to search them. It was also decided to use the Social Science Citations Index rather than Social Sci Search, as suggested in the guidance, as it has similar coverage and was felt to be more useful. An attempt was made to search C2-SPECTR, but initial trialling revealed no relevant material, so the full search strategy was not used.

Handsearching

The Journal of Social Work Education and the British Journal of Social Work were handsearched.

Website searching

The following websites were searched in the course of the review:

www.sosig.ac.uk/social_welfare/

brs.leeds.ac.uk/~beiwwww/beirc.htm

sumsearch.uthscsa.edu/cgi-bin/

www.jisc.ac.uk/index.cfm?name=rg_social_main

edina.ac.uk/

www.policyhub.gov.uk/

No relevant documentation in addition to that which had been obtained by the other methods was discovered through this approach.

Results

The table below shows the number of citations obtained by the search strategies reported above: before any screening took place, after initial screening took place, and when the inclusion criteria were further refined leading to more citations being screened out:

Database	Total citations retrieved by search strategy*	Total citations included after initial screening*	Total citations included after refining inclusion criteria
ASSIA	248	90	42
BEI	9	0	0
CareData	402	38	27
CINAHL	862	95	68
Cochrane	9	0	0
Dissertation Abstracts	77	4	4
ERIC	101	10	2
HMIC: DHZZ	89	19	14
HMIC: KFND	20	12	9
IBSS	100	5	3
Medline	177	85	46
PsycINFO	228	62	23
SIGLE	94	16	14
Social Services Abstracts	792	138	63
Social Work Abstracts	348	19	10
Sociological Abstracts	94	5	3
SSCI	1004	40	20
Handsearching	-	-	4
Identified from bibliographies	-	-	33
Website searching	-	-	0

* Because of the numbers involved, these figures have not been filtered to take duplicates into account.

The table below shows the breakdown of the total citations into unique and duplicate records selected on the basis of abstracts, once the screening and refinement of inclusion criteria had taken place. Note that the first row of total figures gives the sum of the citations found across all the databases, and therefore counts duplicate citations each time they appear. The row below gives the number of actual citations found, filtering out duplicate entries.

Database	Total citations	Duplicates	Unique citations
ASSIA	42	33	9
BEI	0	0	0
CareData	27	21	6
CINAHL	68	24	44
Cochrane	0	0	0
Dissertation Abstracts	4	0	4
ERIC	2	0	2
HMIC: DHZZ	14	8	6
HMIC: KFND	9	5	4
IBSS	3	2	1
Medline	46	21	23
PsycInfo	23	18	5
SIGLE	14	3	11
Social Services Abstracts	63	40	23
Social Work Abstracts	10	9	1
Sociological Abstracts	3	3	0
SSCI	20	13	7
Total	348	200	146
Total when each duplicate is counted only once	260	114	146

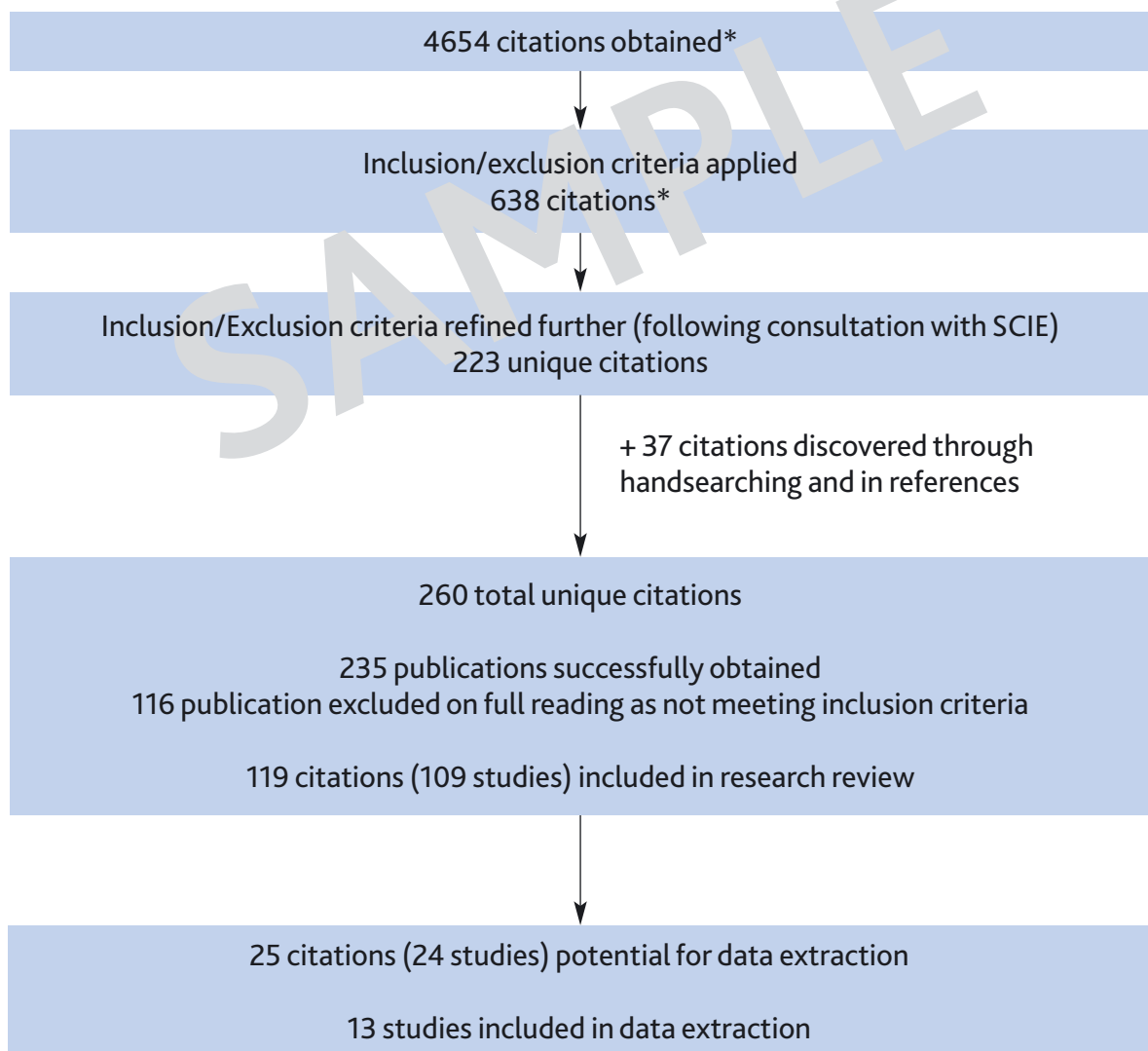
The final figures for references which we obtained or sought to obtain are as follows:

Outcomes for identified references	Number
Included in research review (keyworded)	119
Excluded	116
Unable to obtain	25
Total	260
Data extracted	125

Flowchart of research review process

Databases searched:

ASSIA	CareData	Cochrane	CINAHL	ERIC	
HMIC	Medline	PsycInfo	SIGLE	SSCI	
Sociological Abstracts	Social Services Abstracts	C2-SPECTR	IBSS	Dissertation Abstracts	Social Work Abstracts



Appendix 8

Sample data extraction form (empirical papers)

Title of review

Publication details (use those from mapping exercise)

Author(s)

Year

Title of paper

Title of publication
(e.g. book, journal, report)

Vol., Issue, Pages

Reference number

Publication details (use those from mapping exercise)

Sector area e.g. adults
with learning disability,
children in foster care,
social work education...

Sub-sector area
(where applicable)

Nature of the study

Aims of the study

Any further research questions addressed

Country in which the study was done

User/carer stakeholder involvement in design/conduct of the study

Study site(s): describe setting (e.g. rural/urban), context and details of key characteristics (e.g. of organisation)

Target population (e.g. adults with learning disability, children in foster care, social work students)

Sampling/recruitment procedures (any info re: age, ethnicity, gender)

Number of participants

Details of any theory referred to or conceptual models used

Characteristics of participants (e.g. practitioners, types of job roles, age, sex, gender, ethnicity, type of policy makers)

Study type and design

Study date and duration

Methods of data collection and who collected by (e.g. researcher/practitioner)

Any research tools used

Analysis used

Nature of intervention (where applicable)

Aim of intervention

Country

Location/setting

Target population (any info re: age, ethnicity, gender)

Intervention process 1

Who provided the intervention (e.g. social worker, volunteer)?

Intervention process 2

How was intervention/ service delivered (e.g. group work, home visits, teaching module)?

How and why was intervention developed (e.g. reasons for development, any 'needs assessment' or involvement of target population)

Any theoretical framework drawn on to develop the intervention

Outcomes + results

Outcome measures used	
Details of outcomes/findings	
Any details of strengths/limitations of the study (including diversity of sample)	
Author's conclusions	

The conduct of systematic research reviews for SCIE knowledge reviews

SCIE has a commitment to producing rigorous, high quality knowledge products.

Central in this process is the knowledge review, which combines research knowledge gathered in a research review and practice knowledge assembled through a practice survey, set against the background of the organisational and policy context. Other products such as practice guides are developed from knowledge reviews.

This guidance updates and clarifies SCIE's expectations, providing a comprehensive guide to the conduct of SCIE research reviews.