The impact of Cochrane Reviews: an evaluation of the outputs of Cochrane review groups funded by the NIHR

Study Protocol

1. Summary of Research

A mixed methods approach is proposed informed by theories about research use and guided by a framework for evaluating research impact. The work will be undertaken by experienced researchers, with well established links to the Cochrane Collaboration and The National Institute for Health and Clinical Excellence (NICE), and expertise in systematic reviews, guideline development, and the evaluation of research impact. The overall aim is to identify the impacts and likely impacts, both actual and potential, on health care, patient outcomes and value for money, of Cochrane reviews published by NIHR funded Cochrane review groups (CRGs) over the past five years.

Research Plan

There are three work packages, with work packages 1 and 2 being conducted in parallel. The work packages are:

Work package 1 (general overview of impact):

- Questionnaire survey of key staff at 20 NIHR funded CRG editorial bases
- Analysis of existing sources relating to Cochrane Review impact
- Semi-structured telephone interviews with guidelines developers at NICE

Work package 2 (analysis of impact of representative sample of reviews):

- Selection of representative sample of 40 reviews (two per CRG)
- In-depth analysis of impact of representative sample of 40 reviews (including questionnaire survey of first authors and bibliometrics and documentary review)

Work package 3:

- Synthesis of findings from work packages 1 & 2
- Consensus meeting to discuss and agree findings
- Write up and dissemination

Work package 1 (WP1)

A questionnaire will be sent to all managing editors at NIHR funded editorial bases. The purpose of the questionnaire is to obtain a general overview of the impact of the CRG outputs published in the last five years. CRGs will also be asked to nominate reviews that they consider to have had the greatest impact. This information will be used to help inform our selection of reviews for further in-depth analysis in work package 2. We will also undertake secondary analysis of existing

documents and resources on the impact of Cochrane reviews, (e.g. work done by Alderson and Tan on the frequency of citations of Cochrane reviews in NICE guidance, and statistics compiled by Wiley on the impact of Cochrane reviews). In addition, in order to gain further insight into how Cochrane reviews have contributed to the development and preparation of guidance, we propose to undertake semi-structured interviews with a purposive sample of guidelines developers at the National Institute for Health and Clinical Excellence (NICE).

Work package 2 (WP2)

A representative sample of 40 Cochrane reviews published between 2007-2011 will be selected for further in-depth analysis. Two reviews will be picked from each group, with one chosen randomly (stratified by group) and one chosen from those identified by the CRGs as likely to have had impact. In order to identify impacts and likely impacts of this sample of reviews we propose to send a questionnaire to first authors of reviews and undertake bibliometric and documentary analysis. This will allow us to trace and assess the impact of reviews, including whether they have been included in guidelines.

Work package 3 (WP3)

In work package 3 we will synthesise findings from work package 1 & 2 to describe the actual and potential impacts of Cochrane reviews published by NIHR funded CRGs in the last five years. As there are challenges associated with conceptualising and identifying impact, and because individuals may inflate the impact of their own work, findings will be confirmed using a process of consensus. This will involve the project team and members of our advisory and public involvement in research groups. Discussions will be guided by our framework (knowledge production, research targeting, informing policy development, and impact on practice/services) and informed by ideas about type of impact (e.g. instrumental/conceptual or symbolic).

2. Background and Rationale

In recent years there has been a growing interest in the way in which research is used with researchers increasingly expected to consider the wider impacts of their work (HEFC, 2009). This may include the contributions research makes to health, society, culture, the economy, quality of life and public policy. A variety of terms have been used to describe the impact of research on policy and practice, including: research impact, influence, outcomes, benefit, payback, translation, transfer, uptake and utilisation (Boaz, 2008, Carden, 2004). Research can be used either directly in decision-making related to policy or practice, or more indirectly by mobilising support or contributing to the formulation of values, knowledge and debate (Amara et al., 2004, Huberman, 1992, Nutley, 2003b, Weiss, 1976). Indeed, 'research impact forms a continuum, from raising awareness of findings, through knowledge and understanding of their implications, to changes in behaviour' (Nutley, 2003a).

Systematic reviews have several advantages over other types of research that have led to them being regarded as particularly important tools for decision makers. For example, systematic reviews take precedence over other types of research in many hierarchies of evidence as it inherently makes sense for decisions to be based on the totality of evidence rather than a single study (Black, 2001, Sheldon, 2005). Moreover, they can generally be conducted more quickly than new primary research and, as a result, may be attractive to policy makers required to make a rapid response to a new policy issue (Pawson, 2002). Cochrane systematic reviews should be uniquely placed to influence policy, practice and research as they provide a comprehensive critical summary of what is known about effectiveness on a given topic, the rigour of their methods are widely acknowledged, and they are periodically updated in light of new evidence. Moreover, promoting access is one of the key

principles on which the collaboration is based, and there is increasing interest in the dissemination and impact of Cochrane review findings (The Cochrane Library Oversight Committee, 2012).

Yet, it has long been recognised that the relationship between research and policy or practice is a complex one (Weiss, 1976); and that research may not always have the impact that researchers desire (Lomas, 2000). One reason for this is that research evidence is only one factor in shaping policy and practice. Decision makers are subject to many different influences including political imperatives, the media, non research evidence and powerful lobbying groups such as industry (Black, 2001, Campbell, 2007). Moreover, there are significant challenges associated with conceptualising 'impact' and identifying the extent to which systematic reviews are used (Armstrong et al., 2012).

This study will increase knowledge about the extent to which NIHR supported Cochrane reviews influence healthcare policy and practice, and whether they influence the conduct of new primary research studies. It will identify actual and potential impacts of reviews published in the last five years and has the potential to inform existing approaches to impact evaluation and review dissemination.

3. Why this research is needed

The NIHR systematic review programme currently supports the UK Cochrane Centre and the Cochrane Review Groups that have their editorial bases in the UK. It is important that this funding represents value for money and that reviews are useful for practitioners, policy makers, service users and members of the public. One way in which their value might be judged is by the impact that the reviews produced by NIHR funded Cochrane Review Groups have, or potentially have, on policy and practice, and on future research. However, whilst it is acknowledged that Cochrane review groups produce high quality systematic reviews (Moseley et al., 2009, Olsen et al., 2001) there is at present a lack of information about the impacts of Cochrane reviews.

It is widely acknowledged that research use is complex (Lomas, 2000) and it is important to understand how reviews are currently used in order to develop appropriate strategies for knowledge transfer and exchange. The proposed research will add to our understanding of how Cochrane Reviews impact on policy and practice, will inform the development of methods for evaluating the impact of systematic reviews and will inform future strategies for dissemination and knowledge transfer. This study builds on existing work on research impact (Bunn and Kendall, 2011) and the impact of systematic reviews (Alderson and Tan, 2011, Bunn, 2010a, Bunn, 2010b, Bunn and Sworn, 2011) carried out by the project team.

4. Aims & Objectives

The overall aim is to identify the impacts and likely impacts, both actual and potential, on health care, patient outcomes and value for money, of Cochrane reviews published by NIHR funded Cochrane review groups (CRGs) over the past five years.

The research objectives are to identify and describe the impacts of Cochrane reviews in terms of evidence of direct effect on clinical practice; their inclusion in, or use for, the preparation of national or international clinical guidance, such as guidance published by the National Institute for Health and Clinical Excellence (NICE); their likely influence on clinical practice directly (ie without or before, incorporation into national clinical guidance); and their identification of important gaps in knowledge and possible influence on the conduct of new primary research studies. The research questions are:

1. Have systematic reviews produced by NIHR funded CRGs during 2007-11 had a direct effect on clinical practice?

2. Have systematic reviews produced by NIHR funded CRGs during 2007-11 had a direct effect on NHS organisation and delivery?

3. To what extent have reviews, produced by NIHR funded CRGs during 2007-11, been included in clinical guidance, such as that produced by the National Institute of Health and Clinical Excellence (NICE)?

4. To what extent are reviews produced by NIHR funded CRGs used in the preparation of NICE guidance?

5. What evidence is there that systematic reviews produced by NIHR funded CRGs during 2007-11 are likely to change future clinical practice?

6. What influence have systematic reviews, produced by NIHR funded CRGs during 2007-11, had on the conduct on new primary research studies?

7. What are the barriers and facilitators to Cochrane systematic reviews impacting on policy, practice and future primary research?

5. Methods

5.1 Design and conceptual framework

A mixed method approach is proposed informed by theories about research impact and guided by a framework for evaluating research impact that draws on previous work in this area (Buxton and Hanney, 1996, Kuruvilla et al., 2006).

Many different terms have been used to define research impact. However, there is a general consensus of opinion that several types of research impact exist (Estabrooks, 1999, Huberman, 1992, Nutley, 2003a, Weiss, 1976) , including instrumental or direct impact, conceptual impact and symbolic impact. The definitions of each type of impact are as follows:

- Instrumental or direct impact – research findings drive practice decisions or policy-making
- Conceptual impact – where research influences the concepts and language of policy and practice deliberations
- Symbolic impact – research is used to legitimate and sustain predetermined positions

Although health benefits and broader economic benefits may be viewed as the 'real' payback from health research these are hard to measure as it is difficult to attribute particular health gains to specific pieces of research (Hanney et al., 2004a) . Therefore, although we may be able to make inferences about health and economic benefits, these are largely beyond the remit of this evaluation. Instead we will focus on impacts that are more easily assessed, such as clinical practice, service delivery, quality of patient care, policy and the targeting of future research. Our main focus will be on instrumental or direct impact but we will also consider examples of more indirect influence (e.g. conceptual or symbolic), and will include both actual and potential impact. Examples of instrumental use of research might include direct impact on the behaviour of clinicians or the use of evidence to develop or update educational material, policy and guidelines. Likely, or potential, impact will include examples where there is some evidence to suggest the review has had an impact but this is, at present, difficult to substantiate

(for example, when reviews might have impacted on policy and practice deliberations); or where the review is judged to have produced findings that clearly have the potential to impact on policy, service delivery or patient outcomes but there has been insufficient time since publication for impact to have occurred.

5.1.1 Measuring research impact

There is no single standard approach to measuring impact and a variety of evaluative methods exist including bibliometrics, documentary analysis, semi-structured interviews, case studies, panel review, surveys and network analysis (Boaz, 2008, Hanney, 2007). The methods most frequently suggested for analysing the impact of research are bibliometrics, documentary review and interviews (Boaz, 2008, Hanney et al., 2004b). As there are advantages and disadvantages of each method it is generally recommended that a variety of sources to identify research impact are used (Hanney et al., 2004a, Lavis et al., 2003). In light of these considerations we propose to use a mixture of bibliometrics, documentary analysis, questionnaire survey and interviews. These methods are chosen because they are appropriate for determining and comparing the impact of reviews published by 20 CRGs on a variety of topics and over a five year period. They will also enable richer data to be gathered and allow for triangulation. Moreover, these methods will enable us to track backwards from policy documents (WP1) and track forward from specific systematic reviews (WP2). These methods are discussed in greater detail below.

Questionnaires and interviews

Obtaining the 'insider account' has been recommended when evaluating research impact (Hanney, 2007) and it is envisaged that staff at editorial bases and review authors will be important sources of information about review impact. Therefore, we propose to send questionnaires to CRG editorial staff (WP1) and review authors (WP2) in order to obtain their views on the impacts, and likely impacts, of Cochrane reviews included in our analyses. Furthermore, we propose to undertake semi-structured interviews with guidelines developers to gain further insight into how Cochrane reviews have contributed to the development and preparation of guidance.

Documentary analysis

Documentary analysis allows for the 'exploration and interpretation of existing documents and can elicit quantitative or qualitative findings' (Boaz, 2008). This might include identifying key citing papers and relevant clinical guidelines (Hanney et al., 2004b), or policy statements, articles in professional journals or website resources. Benefits of this technique are that it can be applied to a range of sources, provides contextual understanding and is cost-effective (Boaz, 2008).

Bibliometrics

A common method for analysing research impact is to employ bibliometric methods which employ quantitative analyses to measure patterns of scientific publication and citation. One of the most important of these is citation analysis. This technique, which essentially involves counting the number of times a research paper is cited, works on the assumption that influential researchers and important works will be cited more frequently than others (Meho, 2007). Advantages of using this technique is that citation rates are seen as an objective quantitative indicator for scientific success (Bornmann et al., 2008), they are robust and transparent and are relatively simple and cost-effective to perform. However, citation analyses have been criticised as they measure the number of research outputs rather than research outcomes (Boaz, 2008). In order to overcome this

criticism we will use the citation analyses in work package 2 to trace the flow of knowledge and look for any evidence that the reviews have impacted on the research, practice and policy communities. For example, in line with objective two, we will check citations to see if reviews have been cited in guidelines or policy documents.

Traditionally the Thomson Scientific ISI citation databases have been the main tool for citation analyses. However, previous work (Bunn, 2010b, The Cochrane Library, 2008) suggests that citation counts for Cochrane reviews are artificially low in these databases because citing authors have incorrectly referenced Cochrane reviews. Therefore, citation analysis in Web of Science will be supplemented with citation counts from Google Scholar which may more accurately reflect the impact of Cochrane reviews (Bunn, 2010b).

5.1.2 Framework

The use of a framework for structuring assessments of impact has been recommended as it can help organise inquiry (Ostrom, 2007) and allow for more easy comparison across reviews (Wooding et al., 2004). We propose to structure our data collection and analysis using a framework that combines elements from two existing frameworks, the HERG framework for assessing health research payback (Buxton and Hanney, 1996, Buxton and Hanney, 1997, Hanney et al., 2000) and The Research Impact Framework developed by Kuruvilla and colleagues (Kuruvilla et al., 2006). The HERG framework consists of a multidimensional categorization of the benefits, or payback, from health research (Hanney et al., 2000), and includes five main categories: knowledge production, research targeting, capacity building and absorption, informing policy and product development, health benefits and broader economic benefits. The rationale for using this framework is that it is the most commonly used framework in the evaluation of health research impact (Hanney, 2007), is well described in the literature and there are a number of publications detailing suggested methods for conducting evaluations. In addition, although it was not developed specifically for systematic reviews, it has been used to assess their impact (Soper and Hanney, 2007).

As previously stated health benefits and broader economic benefits of research are hard to measure and are largely beyond the remit of this evaluation (Hanney et al., 2004a). Therefore, we propose to use a framework that combines elements of the HERG framework (knowledge production, research targeting, informing policy and product development) with elements (impact on practice/services) from The Research Impact Framework developed by Kuruvilla and colleagues. The latter is a conceptual framework that uses a standardised way of describing a wide range of potential areas of health research impact and is designed to be used by researchers without any specific training in research impact assessment. The framework we propose to use for this evaluation includes the following categories:

1. Knowledge production
    - Impact within research community (e.g. number of times review is cited)
    - Other methods of dissemination (e.g. press coverage, number of mentions in media)
2. Research targeting
    - Influence on other research (e.g. identification of gaps in knowledge, follow-on research)
3. Informing policy development (includes actual & potential)
    - Impact on national or government policy
    - Impact on international policy
    - Policies agreed at national or local level in the form of clinical or local guidelines

- Policies developed by those responsible for training and education

4. Impact on practice/services (includes actual & potential)
    - Quality of care
    - Services management and organisation
    - Cost containment and effectiveness
    - Evidence based practice

5.2 Research Plan

There are three clearly defined work packages, with work packages 1 and 2 conducted in parallel. A diagrammatic summary of the study can be seen in Figure 1.

In work package 1 we will seek to gain a general overview of the impact of the twenty NIHR funded Cochrane Review Groups (CRGs). We will:

- Analyse data on outputs and impact of reviews compiled by CRGs as part of their annual reports to NIHR
- Send a questionnaire survey to key staff at 20 NIHR funded CRG editorial bases to identify examples of impact, and likely impact, on practice, policy and research targeting and to help prioritise reviews for further analysis
- Undertake further analysis of existing sources relating to Cochrane review impact. E.g.:
    - data compiled by Alderson on frequency of citation of Cochrane reviews in NICE guidance
    - data compiled by the UK Cochrane Centre on the use of Cochrane Reviews in NICE & SIGN guidelines
    - data compiled by the publishers of the Cochrane Library (Wiley) on the impact of Cochrane reviews
    - Contact Research Networks to see if able to provide any evidence of impact
- Undertake semi-structured interviews with key personnel at NICE involved in the development of guidelines (focus on impact, potential impact, and use in preparation of guidelines)

In work package 2 we will explore the impacts of a representative sample of Cochrane reviews. We will:

- Identify a representative sample of 40 reviews (two per CRG)
- Send a questionnaire survey to first authors to identify examples of impact or likely impact
- Undertake documentary and bibliometric analysis to identify impact or likely impact

In work package 3 we will synthesise findings from work packages 1 and 2, hold a consensus meeting to discuss and agree findings, write the final report and begin dissemination of the findings.

5.3 Work package 1.

5.3.1 Questionnaire survey of CRG editorial bases

CRGs currently compile data on outputs and review impact as part of the annual reports that they submit to NIHR. However, although data on outputs is available for the whole five year period data on review impact is only available for 2009 onwards. We will, therefore, supplement this existing data with a questionnaire survey to CRG editorial bases. This will help us get an

idea of the range and type of likely impact and an indication of which reviews might have had the greatest impact. In addition, this process will allow us to prioritise reviews for further analysis.

Sample and data collection

We will send a questionnaire survey to the managing editor (n=20) at each NIHR funded CRG. This will be done using Bristol Online Surveys (UH holds a licence). The survey will include questions about general impact (both actual and potential) of the CRG output from the past five years. However, CRGs will be informed that they do not need to provide information already included in the annual reports they submit to NIHR. Questions will be guided by our evaluation framework and will cover knowledge production, contribution to research training and further research and possible impact of the review on health policy and practice. Respondents will be asked to focus on reviews first published, or substantially updated in the five year period between 2007-11 (with a particular emphasis on 2007-9 as this data is not already available) and will be asked, where possible, to provide supporting evidence of impact. Evidence of impact might include inclusion in clinical guidelines, impact on practice (for example changes to clinicians behaviour, changes to service organisation and delivery), or influence on future primary research. CRGs will be asked to identify two reviews published (or updated) in the last five years that they consider to have had the most impact on policy and practice. These reviews will be used to inform the selection process in work package 2. Non responders will be followed up by repeat emails and/or telephone.

Analysis

Data will be imported into excel for analysis. Researchers will scrutinise the responses and extract any examples of actual or potential impact from the information provided by the CRGs. As there is a danger that CRGs may inflate the impact of their work the research team will critically assess information provided and, where possible, seek evidence to verify it. This information will then be organised using our framework (as outlined in 5.1.2) and stratified by CRG.

5.3.2 Documentary analysis and analysis of existing sources

We will undertake analysis of existing material relating to the impact of Cochrane reviews. This would include analysis of data provided by CRGs as part of their annual reports to NIHR, and data on the use of Cochrane reviews in NICE and SIGN guidance (Alderson and Tan, 2011) compiled by NICE and the UK Cochrane Centre. We will re-analyse the data to focus on citations involving reviews published between 2007-11 by NIHR funded CRGs. In addition, we will draw on data from the publishers of The Cochrane Library (Wiley) on the impact of Cochrane reviews. This includes data on: the number of downloads of reviews (abstract only or full text), impact factors for individual Cochrane CRGs, and the number of media mentions for Cochrane reviews. Discussions with Gavin Stewart (associate editor the Cochrane Library) and David Tovey (Editor in Chief Cochrane Library) have confirmed that we would be able to access this data. Our analyses would focus on reviews published (or updated) by NIHR funded CRGs during the period of 2007-11.

Analysis

We will provide tabular and graphical summaries of review outputs structured to reflect the domains of the framework. This will include: knowledge production (citations and other outputs such as media mentions), research targeting (such as any follow on studies), policy impact (e.g. inclusion in guidelines or use for the development of guidelines and impact on practice/services (e.g. impact on clinical behaviour).

5.3.3 Semi-structured interviews with key guideline developers

Although the proposed citation analyses and documentary review will enable us to ascertain if Cochrane reviews have been cited in national or international guidance it will not necessarily tell us the role Cochrane reviews play in the development of guidance, for example whether they are just used as supporting evidence or if they were instrumental in informing guidance. Therefore, we propose to undertake semi-structured telephone interviews with key informants at NICE in order to understand the role that Cochrane reviews play in the development of NICE guidance.

Sample and data collection

We would undertake telephone interviews with a purposive sample of NICE/National Collaborating Centre staff involved in the development of guidelines. Potential participants will initially be indentified by one of the applicants (Alderson) with further snowballing if required. Our sample will attempt to capture a range of experiences (both positive and negative) of using Cochrane reviews in guideline development. Our approach will be iterative and the sample size will be dependent on the themes emerging from the data. However, preliminary discussions suggest that a sample of between five and ten will be sufficient to reach data saturation. The focus of the data collection is to identify the way Cochrane reviews are used in the development of guidance and to identify barriers and facilitators to their use. We will use a semi-structured interview schedule which will be guided by our evaluation framework and by previous literature on barriers to review impact (Bunn and Sworn, 2011). Interviews will be taped and transcribed, and, in order in order to minimise the burden on interviewees, will be kept to 30 minutes only.

Analysis

Qualitative data analysis will be undertaken with the aid of a computer software package designed specifically for qualitative data (NVivo) and will incorporate the principles of the FRAMEWORK approach (Ritchie and Spencer, 1994). This uses five steps: detailed familiarization with the data, identifying key themes to form a coding frame, indexing the material according to the coding framework, and mapping and interpreting the findings in the context of other research in the area and policy and practice considerations (Silverman, 1993). To guarantee a degree of inter-rater reliability and transparency two researchers will independently scrutinize transcripts and emerging themes will be labelled with codes. They will then compare codes with discrepancies resolved by discussion (Barbour, 2001). Emerging themes will be discussed with our guideline development expert (Alderson). As well as this inductive analysis we will also use deductive methods with our coding frame (step 2 of the framework analysis) being guided by our overriding framework (5.1.2).

5.4 Work package 2

In work package two we propose to undertake further analysis on a representative sample of Cochrane reviews published in the last five years. This will enable us to look in greater detail at the impacts, and potential impacts, of our selected reviews.

5.4.1 Identification of representative sample of Cochrane reviews

Selection criteria

We will select a total of 40 systematic reviews, two from each CRG. Twenty reviews will be chosen randomly (stratified by group) and twenty from those identified by the CRGs as likely to have had an impact. This should ensure we have a

representative sample of reviews. The rationale for choosing 40 reviews is that this is judged to be feasible in the time available and will allow us to include two reviews from each CRG. For the purpose of an impact evaluation there generally needs to be sufficient time since the research was completed for change to have occurred. Therefore, we will weight our sample towards those reviews published between 2007-2010. In order to avoid a conflict of interest or bias the applicants will exclude any reviews on which they are an author.

5.4.2 Questionnaire survey with systematic review authors

Sample and data collection

We propose to undertake a questionnaire survey with first authors of all 40 reviews. This will be done using Bristol Online Surveys. Questions will be guided by our evaluation framework and will cover knowledge production (e.g. media mentions), contribution to research training and possible impact of the review on health policy and practice. Authors will also be asked if they think their review identified important gaps in knowledge and/or if it had any influence on the conduct of new primary research. As in WP1 the research team will seek supporting evidence to substantiate claims of impact. For non responders this will be followed by a second mailing and by additional emails and phone calls where necessary. This may include emails to other review authors if the first author does not respond.

Analysis

Data will be imported into excel for analysis. Researchers will scrutinise the responses and extract any examples of actual or potential impact from the information provided by the CRGs. As there is a danger that authors may inflate the impact of their work the research team will critically assess information provided and, where possible, seek evidence to verify it. This information will then be organised using our framework (as outlined in 5.1.2) and stratified by CRG.

5.4.3 Documentary and bibliometric analysis

In order to search for impacts and likely impacts of our selected reviews we would undertake the following bibliometric and documentary analysis:

a) citation analysis in Web of Science and Google Scholar to find out how often the reviews have been cited (knowledge targeting)
b) Screening of references identified in the citation analysis to trace the flow of knowledge to see whether the reviews have been cited in any policy or practice documents (influence on policy and practice)

The citation analyses described above will be supplemented by searches of Google, Google Scholar, NHS Evidence and TRIP using review author and title keywords. Previous studies (Armstrong et al., 2012, Bunn, 2010b) suggest that the most relevant records in searches of Google and Google Scholar will be in the first five pages, and therefore we will screen only the first five pages of records for each review.

Analysis

We will provide tabular and graphical summaries of review outputs structured to reflect the domains of the framework. This will include: knowledge production (citations and other outputs such as reports in press), research targeting (such as any follow

on studies), policy impact (e.g. inclusion in guidelines or use for the development of guidelines, and impact on practice/service (e.g. impact on clinical behaviour).

5.5 Work package 3

In work package 3 we will synthesise findings from work package 1 & 2 to describe the actual and potential impacts of Cochrane reviews published by NIHR funded CRGs in the last five years. Synthesis will be guided by our overarching framework (5.1.2) (knowledge production, research targeting, informing policy development, and impact on practice/services), the results of our framework analysis (5.5.3.) and will take into consideration ideas relating to types of impact (e.g. instrumental/conceptual/symbolic). The findings will be discussed at a consensus meeting involving the research team and members of the advisory and public involvement in research groups. This process will be important in order that we make appropriate judgements about potential or likely impacts and that we ensure that impact is not overstated.

6. Dissemination and projected outputs

Expected outputs from the research will include a full report for the HTA, a shorter summary aimed at members of The Cochrane Collaboration, guidelines developers, practitioners and policy makers; a peer reviewed publication and a possible editorial for the Cochrane Library. Project findings will also be disseminated via professional and research networks and members of the PIRG will assist in the development of a lay summary. It is anticipated that the study will be of interest to those involved in preparing and disseminating Cochrane reviews. Therefore, the findings will be presented at Cochrane meetings (such as the Cochrane Colloquium), and disseminated to CRGs, The UK Cochrane Centre, and to those involved in editing and producing the Cochrane Library. Findings will also be presented at NICE.

7. Plan of investigation and timetable

Further details of the research plan are provided in a gantt chart (see Figure 1). The duration of the study is five months; start date 1st April – end date 1st September 2013.

- Pre-grant: Design draft questionnaire and submit ethics application
- April 2013: Design questionnaire and send to CRGs, begin documentary analyses of existing sources, identify reviews published by each CRG in last five years and choose random sample of one review per group
- May 2013: Send reminders to CRGs who have not responded to the questionnaire, begin semi-structured interviews with guideline developers, select purposive sample of one review per group, begin analysis of email survey to CRGs, send out surveys to review authors
- June 2013: send reminders to non-responders of author questionnaire, begin analysis of author survey
- July 2013: continue with analysis of surveys and documents, hold consensus meeting
- August 2013: synthesise work packages 1 & 2 and prepare final report
- Post grant: write paper/s and disseminate findings

8. Project management

This is a complex project that has to be delivered to a short time frame and to tight deadlines. Dr Bunn is CI and will act as project manager (20% FTE). We propose to employ two full time research assistants at UH. Dr Bunn and Dr Trivedi (10%

FTE) will be responsible for supervising the research assistants at UH. Either Dr Bunn or Dr Trivedi will meet weekly with the RAs employed at UH and the whole project team will meet every two months (either face to face or via teleconference).

Investigations of research impact are often carried out by those with a vested interest in proving the value of research and are, therefore susceptible to bias (Hanney, 2007). All the applicants are involved in the Cochrane Collaboration (all are authors on Cochrane reviews and Bunn and Trivedi are editors with the Cochrane Injuries Group) and may be supposed to have a vested interest in proving the value of Cochrane reviews. They will make every effort to avoid bias but in addition the project will be overseen by an advisory group that involves members without direct links to the Cochrane Collaboration. As well as members of the project team the advisory group will include two members of the Public Involvement in Research Group, a clinician with an interest in quality improvement and the development of clinical guidelines (Dr Linda Patterson Clinical Vice President of the Royal College of Physicians) and clinicians/policy makers with an interest in the use of research (TBA). The group will meet twice during the course of the study and its purpose will be to guide the research, monitor its progress and comment on emerging findings.

9. Approval by ethics committees

Ethical approval will be needed for the questionnaire surveys and interviews with staff at NICE. Although NICE is currently part of the NHS (in April 2013 it will become a non-departmental public body) NHS REC approval is no longer required for interviews with NHS staff. Therefore, we will not need to apply to an NHS REC committee but will obtain any necessary ethical approval via the Nursing, Midwifery and Social Work Ethics Committee at the University of Hertfordshire. The nature of this study means that we do not anticipate any difficulties obtaining ethical approval, and the committee is able to fast track applications if necessary.

10. Patient and public involvement

A Public Involvement in Research Group (PIRG) at the University of Hertfordshire has a broad membership of service users and carers. The group has a well-developed support and training programme for members of the public and service users across a range of projects. The group is supported by a dedicated coordinator. Four members of this group have provided feedback on the research proposal and two members will be invited to join the project advisory group. As members of the advisory group they will have the opportunity to comment on research methods and project outputs. In addition, we will invite members of the PIRG to the consensus meeting in work package 3 where they will be involved in interpreting the study findings.

11. Expertise and justification of support requested

The project includes a team of researchers and clinicians, with links to the Cochrane Collaboration and the National Institute for Health and Clinical Excellence, who bring to the project expertise in evidence synthesis, systematic reviews, the development of clinical guidance and the evaluation of research impact.

Bunn (20% FTE) is a senior research fellow in Evidence Based Practice with experience in evidence syntheses and systematic reviews and in methods for evaluating research impact. She has recent experience of conducting qualitative interviews and analysis. She is an editor of the Cochrane Injuries Group and was formerly a managing editor with the Cochrane Collaboration. She is currently CI on an NIHR HS&DR study (11/1017/07) looking at ways to improve service organisation

and delivery for people with dementia and comorbid health conditions. She will lead and have overall responsibility for the day to day management of the study. She will undertake interviews with guideline developers and will supervise the research assistants working on the study.

Trivedi (10% FTE) is a senior research fellow in Evidence Based Practice with experience in qualitative and quantitative systematic reviews, methods in evidence syntheses and epidemiology, including cross-sectional studies. DT is an editor of the Cochrane Injuries Group and a member of the Cochrane Nursing Care Network. She has led and conducted a systematic evidence synthesis commissioned by NICE, an NIHR funded integrated review on the nursing contribution to chronic diseases, and a systematic review on the effectiveness of interprofessional working for older people funded by the NIHR SDO. DT has recently been awarded funding from the NIHR RfPB for an evidence synthesis on managing Behavioural and Psychological Symptoms in Dementia. She will help oversee research assistants, conduct telephone interviews and provide review and survey expertise.

Alderson (2%) is Associate Director in the Centre for Clinical Practice at NICE, where he leads on guideline development methods. He was formerly associate director in the UK Cochrane Centre and has expertise in systematic review methods as well as guideline development. He is currently a co-applicant on NIHR HS&DR project 10/2003/27 looking at developing better guidelines for patients with multimorbidity. He will provide academic expertise, advice on the aspects of the study relating to the development of clinical guidance and will facilitate recruitment for the interviews.

Iliffe (2%) is Professor of Primary Care for Older People at University College London, he has experience of conducting Cochrane Reviews (Hospital at home, Screening for vision loss in asymptomatic older people, Fear of falling), and is a clinical researcher engaged in evaluating complex interventions, with a particular interest in the translation of research findings into practice. He will provide academic and clinical expertise and provide advice on the interpretation of findings.

We have applied for funding for Bunn to project manage, have overall responsibility for the study, undertake interviews with guideline developers, and write the final report; Trivedi to provide additional expertise, advise on survey design and analysis, assist in supervising the RAs and undertake interviews; Alderson to provide expertise on the impact of reviews on guideline development and facilitate recruitment for interviews and Iliffe to provide additional clinical and academic expertise. All applicants will critically review the final report. The research team are well connected to engage the participation of members of the Cochrane Collaboration and guideline developers at NICE in this research. It is envisaged that the team's strong links with the Collaboration will facilitate the participation of CRGs and review authors in the study and will aid dissemination of findings. In addition, applicants will be involved in recruitment and will lead the interviews with guideline developers.

In addition to the project team we have requested funding for two research assistants (100% FTE) who will assist in all aspects of data collection and analysis including questionnaires, documentary review and citation analyses, and undertake general project support. We believe that the scope and anticipated timeline of the study means that two research assistants are required. However, as there will be appropriate support from FB & DT, we have minimised costs by costing these posts on the UH post-grad scale. We envisaged that one RA will be primarily responsible for work package 1 and the other RA for work package 2. However, both RAs would work on any aspect of the study considered necessary by the PI in order to complete the project to time.

Costs for user involvement have been calculated according to the University of Hertfordshire Public Involvement in Research costings (drawn from INVOLVE). These include support for the infrastructure of the PIRG, advisory group and consensus

meeting attendance, review of study documentation, and travel. Other costs include funds for two laptops for the RAs, fees for transcription of the semi-structured interviews, travel and subsistence for the project team and advisory group, and dissemination costs (open access fee and attendance at Cochrane Colloquium).

12. References

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