

## **1. Title**

**How can international evidence on interventions to manage referral from primary to specialist non-emergency care be applied in a UK context? Development of an inclusive systematic review and logic model.**

## **2. Version/date**

Version 1. 04.10.12

## **3. Project team**

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Dr. Susan Baxter

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## **4. Advisory group**

Prof. Danuta Kasprzyk: Department of Global Health, University of Washington

Prof. Helena Britt: Family Medicine Research Centre, University of Sydney

Ellen Nolte: RAND Corporation Europe/international

Jon Karnon: School of Population Health and Clinical Practice, University of Adelaide

Janet Harris: SchARR

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## **5. Background**

Demand management defines any method used to monitor, direct or regulate patient referrals. This includes the methods by which patients are referred from primary to specialist, non-emergency elective care provided in hospital. As demand outstrips resources in the UK, the volume and appropriateness of referrals from primary care to specialist services has become a key concern within the NHS. As a result of this, several strategies have developed to manage the referral of patients to secondary care, with interventions which target primary care, specialist services, or infrastructure (such as referral management centres).

The proposed work will aim to overcome the limitations of previous reviews in the area by taking a much broader inclusion criteria (to include all study designs and grey literature), and will use this evidence to explore complex relationships between interventions and outcomes. Literature from industries other than health will also be considered as quality improvement knowledge may be able to influence referral pathways. The international literature will be used to construct an evidence-based conceptual (logic) model illustrating pathways from intervention to outcomes which will be revised and further developed with input from key stakeholders (service commissioners, practitioners and patients). This will provide an output which can be meaningfully used to develop practice by providing evidence not only on what works but also its applicability and acceptability within the UK context.

## **6. Objectives and research questions**

What can be learned from the international evidence on interventions to manage referral from primary to specialist care?

How can international evidence on interventions to manage referral from primary to specialist care be applied in a UK context?

What factors affect the applicability of international evidence in the UK?

What are the pathways from interventions to improved outcomes?

## 7. Methods

### 7.1. Inclusion/exclusion criteria

**Participants:** the participants will include all primary care physicians and their patients, as well as the family and carers of patients.

**Interventions:** we will include interventions which aim to influence and/or affect referral from primary care to specialist services by having an impact on the referral practices of the primary physician. We will also consider interventions which aim to improve referral between specialists where they also have the potential to impact on primary care to specialist referrals.

**Comparators:** it is likely that the comparator condition will be the usual method referral practices which is undertaken in the location where the intervention is being implemented. However, alternative comparators will not be excluded. We will also include studies with no concurrent comparator (e.g. non controlled before and after studies).

**Outcomes:** all outcomes relating to appropriateness of referral will be considered and a priori limitations on outcomes will not be set. Relevant outcome measures may include: impact on existing service provision, mortality and morbidity outcomes, length of stay in hospital, safety, effectiveness, patient satisfaction, patient experience, and process measures (such as referral variation and conversion rates).

**Study design:** With the increasing recognition in the literature that a broad range of evidence is needed to inform review findings, no restrictions will be placed on study design. The criteria for inclusion in the review will be that a study is able to answer or inform the research questions. We will however take note of how quality of study design and execution can affect the reliability of the results generated, as discussed below.

### 7.2. Search strategy (incl. Grey literature)

Systematic searches of published and unpublished (grey literature) sources from healthcare and other industries will be undertaken to identify recent, relevant studies. We will take an iterative (i.e. a number of different searches) and emergent approach (i.e. the understanding of the question develops throughout the process), to identify evidence. We will search a broad range of electronic databases in order to be as inclusive in our sources of literature as possible. We will begin our searches in the medical and health literature databases including Medline, Embase, PsycINFO, SCI, CINAHL, The Cochrane Library and selected EPPI Centre databases and go on to search social science sources e.g. ASSIA, Sociological Abstracts, and SSCI. Grey literature will be searched using OpenGrey, Greysource, and Google Scholar electronic databases. Grey literature in the form of published or unpublished

reports will be included as will data published on websites, in government policy documents or in books. We will also search databases which focus on health management literature such as the Health Management Information Consortium and Health Business Elite, and management databases such as Business Source Premier and Emerald Management Reviews.

We will also undertake citation searches of included articles and authors, additional targeted searching on keywords and concepts identified from the identified papers, hand searching of reference lists and contacting key authors to obtain further relevant published and unpublished material. We will also use the “related articles” feature on relevant articles in Medline and Google Scholar (where the article appears in these databases). Relevant reviews articles will also be used to identify studies.

We will also draw on the expert knowledge of our international collaborators, relevant patient representatives and other stakeholders by forming a steering group at the outset of the project. In this way they will be able to influence the search strategies by suggesting terms which may be considered as well as identifying key articles for potential inclusion.

Searches will be limited by date (2000 to present) and work published in English primarily, although we will work with our international collaborators to identify key articles which may need to be translated. Articles generated by our searches which consist of English abstracts only, with full papers published in other languages will also be considered for translation.

All of the literature identified using the above methods will be imported into Reference Manager Version 12 and key worded appropriately. An audit table of the search process will be kept, with date of search, search terms/strategy, database searched, number of hits, keywords and other comments included, in order that searches are transparent, systematic and replicable.

### **7.3. Study selection**

Citations will be uploaded to Reference Manager and title and abstracts (where available) of papers will be independently screened by two reviewers and disputes resolved by consulting other team members. Full papers copies of potentially relevant articles will be retrieved for systematic screening. A data extraction form will be developed using the previous expertise of the review team, trialled using a small number of papers, and refined as necessary. A draft extraction form is given in appendix 2. Extraction data will include: study quality, study

population, comparator, baseline characteristics of the population and service provision, details of the intervention, outcome measures, and study strengths/limitations. Data will be extracted by one reviewer and checked by a second. Our previous research has indicated that extractions for building Logic Models can be carried out using standard forms (encompassing general information about the extraction, study characteristics, participant characteristics, intervention, setting, and outcome/results). On the basis of our previous work we would add reported associations between elements to data extraction for the Logic Model process.

#### **7.4. Quality assessment**

The internal and external validity of studies will be assessed using quality appraisal checklists suitable for the study type. Each paper will be assessed by one reviewer and checked for accuracy by a second. Papers of low quality may not be excluded from the review as they will still be able to inform the model where there is a lack of higher quality evidence. The Logic Model will indicate where greater or lesser weight of evidence exists and the accompanying summary description will comment on the quality of the included studies.

#### **7.5. Synthesis**

Following data extraction, information from each column of the extraction tables will be examined by the research team in order to build a Logic Model column by column underpinned by the evidence. So, for example the first column (the intervention) would be expanded by synthesising elements of interventions described across the set of papers.

The model will set out the international evidence regarding how referral management interventions are understood or intended to produce results. It will present evidence from the literature regarding how mechanisms within the inputs (such as resources, equipment, finance) intervention may be influential on outcomes. Also, how intervention process mechanisms may link to short term or intermediate outcomes, and how these outcomes may then be linked to longer term outcomes and impacts on health. So, for example the first column may examine resourcing underpinning intervention inputs, and describe organisational factors in potential causal pathways, the second column would be expanded by examining and synthesising elements of interventions described across the set of papers and highlight links between these elements and mechanisms of change. Subsequent sections of the model will outline the evidence linking interventions to short term outcomes

and research outlining potential causal pathways from these outcomes to longer term impacts.

Following the development of a prototype model there will be a period of stakeholder consultation to seek feedback and request any further evidence that may be significant in explicating links between elements of the change pathway. This consultation will be carried out via focus groups with practitioners and patient representatives, and by circulating the model to experts in the field. This phase of the work will be important in terms of validating the developed model. The focus groups and expert consultation will be used to seek feedback regarding the hypothesised causal chains and any areas for amendment. The focus groups will be used to explore practitioners' and patients' understanding of the model in order to ascertain the usefulness of the framework as a communication tool.

## **7.6. Research outputs**

The first output will be a critical synthesis of interventions which exist to manage referral from primary care to elective services. This synthesis will be used to underpin the development of a Logic Model providing a conceptual framework of pathways between referral interventions and long term impacts. This model will set out a theory of change by presenting the evidence in the form of a causal chain of links regarding how referral management interventions may lead to improved health outcomes. The work will be based on examination of a wider range of international evidence than conventional systematic reviews enabling the synthesis to encompass a comprehensive range of sources. It will represent the complexity of the interventions and take account of contextual and implementation factors, thus contributing to improving the external validity of the work. Importantly, the development of the logic model will permit areas where research output is limited or where interventions have been shown to be ineffective to be represented in the final output as it allows us to, for example, develop an understanding of why interventions may not have worked. Therefore the potential to inform practice is much greater than would be expected from a standard systematic review.

The evidence synthesis and accompanying Logic Model will provide a strategic perspective on the understanding of how international referral management interventions may be applied in the UK context. It will uncover and evaluate assumptions underpinning how interventions may lead to enhanced outcomes and provide a framework for communication and discussion. The work will thus be directly relevant for informing NHS managers, GP commissioners, and other stakeholders and for developing practice. The synthesis will also

provide an overview of the current state of knowledge in the field and indicate where further research is needed. By examining links between interventions and outcomes, it will provide valuable insights into the outcome measures currently in use and have the potential to inform the future measurement of effectiveness.

The findings will be disseminated through general practice networks and organisations, and NHS management networks. The work will be presented at national and international conferences as well as in articles written for peer reviewed journals. As patient and public involvement is a core aspect of research dissemination, the University Media Centre will provide support for disseminating research findings via the media, both locally and internationally. Data from the research will be available as published studies and via a report accessible from the University website.

## **8. Service users/public involvement**

We have recruited two PPI representatives to our steering group to work with us throughout the research project. We envisage that this will involve: review of proposed PPI plans to mutually agree involvement, developing the scope and protocol for the study, influencing search strategies and suggesting literature sources, interpreting review findings and model development, advising how to disseminate to reach appropriate lay people and organisations, and advising/writing lay summary of key findings.

In addition as part of our proposal the Logic Model built from systematically reviewing the literature will be revised and further developed with input from key stakeholders and this will be a further opportunity to involve other service users further to those involved on the project steering group.

## **9. Dissemination**

The work will be dissemination through submitting abstracts for presentation (oral and/or poster) at national and international conferences. We will also submit the work as at least one peer reviewed journal article. Additional opportunities to present the work will also be sought including seminar series within the university, and within local and national primary care networks.

## **Appendix 1: draft search strategy**

This search strategy will form the basis of the preliminary search to be undertaken and was modelled in the Medline database. The search process will be iterative throughout the project. This search is not designed to be the only attempt to identify evidence for this project, but to provide an initial capture of evidence to address the research questions; therefore it does not contain an exhaustive list of terms.

Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) <1946 to Present>

Search Strategy:

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- 1    \*Primary Health Care/ (31054)
  - 2    (primary care or general practitioner\$ or gp).ti. (37925)
  - 3    \*Family practice/ or \*General practitioners/ (38188)
  - 4    1 or 2 or 3 (83575)
  - 5    (referral or referred or refer).ti. (10259)
  - 6    demand management.ti,ab. (141)
  - 7    \*"Referral and Consultation"/ (17637)
  - 8    Specialization/ (20832)
  - 9    5 or 6 or 7 or 8 (43737)
  - 10   4 and 9 (4318)
  - 11   limit 10 to yr="2000 -Current" (1970)



## Appendix 2: draft extraction form

Study details	Population and setting	Methods	Findings	Associations	Notes
<b>First Author (year):</b> <b>Setting:</b> <b>Study design:</b> <b>Length of follow up:</b> <b>Aim:</b> <b>Recruitment:</b> <b>Funding:</b> <b>Quality:</b>	<b>Number of participants:</b> <b>Age:</b> <b>Gender:</b> <b>Education:</b> <b>Ethnicity:</b> <b>Other inclusion/exclusion criteria:</b> <b>Service setting:</b>	<b>Intervention aims and content if applicable:</b> <b>Control condition if applicable:</b> <b>Data collection methods:</b> <b>Outcome measures:</b> <b>Response and/or attrition rate</b> <b>Data Analysis:</b> <b>Primary data (quotes) available:</b>	<b>Main results relevant to research question (author analysis):</b>	<b>Reported associations between elements for Logic Model:</b>	<b>Strengths/limitations identified by author:</b> <b>Strengths/limitations identified by the reviewer:</b> <b>Evidence gaps/ recommendations for future research:</b> <b>UK applicability:</b>

### **Appendix 3: Management strategy**

Day to day management of the project will be undertaken by the PI (Lindsay Blank) which will be overseen by the SchARR PHEST senior management team (Liddy Goyder and Nick Payne). Co-ordination and booking of meetings will be undertaken by the administrator (Viv Walker).

The SchARR team will formally meet once a fortnight throughout the duration of the project, but also with much greater frequency on an informal basis as and when needed. Martin McShane will attend the formal meetings via telephone conference, and in person once every quarter.

The project steering group will meet formally five times throughout the project as set out in the project timeline. Given the large variation in geographical location of the steering group members, each will be invited to attend the meetings in person or by telephone/video conference. Where this is not possible, agendas and documents will be provided to the individual two weeks ahead of the meeting to allow time for them to provide feedback ahead of the meeting which can then be incorporated into discussion on the day.