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Effects of a demand led knowledge translation service on the uptake and use of research evidence by NHS commissioners compared with lower intensity untargeted alternatives

Protocol Final Version

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Glossary

EBS	Evidence Briefing Service
CCG	Clinical Commissioning Group
NIHR	National Institute for Healthcare Research
QIPP	Quality, Innovation, Productivity and Prevention
TRiP-LaB	Translating Research into Practice in Leeds and Bradford

Introduction

The NHS is facing severe funding constraints both now and in the medium term. The forecast reduction in resources will place considerable pressures on its organisations and staff. In challenging times, it has been proposed that the greatest potential savings may be found by increasing efficiency and reducing variations in clinical practices (Ham, 2009). To do this well, NHS managers and clinicians need to be fully aware of the strength of the underlying evidence for interventions or ways of working that promise to deliver more value from the finite resources available (Appleby, 2010). A need reflected in the Health and Social Care Act 2012, which states that the National Commissioning Board (NCB; now NHS England) and local Clinical Commissioning Groups (CCGs) must promote 'the use of evidence obtained from research'.

NIHR has invested significantly in the production of research evidence on the effectiveness and cost effectiveness of interventions to inform decisions and choices (NIHR 2011). However, full uptake of this knowledge to increase efficiency, reduce practice variations and to ensure best use of finite resources within the NHS has yet to be realised (Cooksey 2006). NHS managers and clinical leads in CCGs can play a key role in developing absorptive capacity (Cohen 1990; Lane 2006) by improving uptake and use of knowledge to inform commissioning and decommissioning of services. However, their ability to recognise and understand valuable research based knowledge is often lacking (Walshe 2001).

An initiative aiming to address this gap has been developed as part of the NIHR CLAHRC (Collaboration for Leadership in Applied Health Research and Care) for Leeds, York and Bradford: a service that works with local NHS commissioners and senior managers in provider Trusts to provide research based answers to questions they raise (see http://ow.ly/akGxw). The service is aimed at commissioning and service delivery and organisation decisions and summarises and translates existing sources of synthesised, quality-assessed evidence (primarily systematic reviews and economic evaluations) to the local context. Topics have included evidence to inform service reorganisation for adolescents with eating disorders (Chambers 2012), evidence to support nurse/ doctor role substitution and the introduction of integrated care pathways in mental health settings.

Our approach is consultative (Jacobson 2005) and responsive based on a methodological framework that involves clarifying the problem and framing the question to be addressed. The evidence briefings summarise the quality and the strength of existing systematic reviews and economic evaluations, but go beyond effectiveness and cost effectiveness to consider local applicability, implications relating to service delivery, resource use, implementation and equity. The service has involved building relations and having regular contact (face to face and email) between researchers and a range of clinicians, commissioners and NHS mangers to discuss and formulate questions that require a more considered response and to then produce briefings and discuss their implications. Although feedback has been uniformly positive to date, this service is developmental and has yet to be formally evaluated.

Based on the findings of previous research, interactions between researchers and NHS managers might be expected to facilitate the ongoing use of research knowledge in decision making (Elliott and Popay 2000; Innvaer et al. 2002; Lavis 2003). How best to do this (Mitton 2007) and the time and resource costs required for both sides, is less clear. What is clear is that the benefit of interactions between managers and researchers is theoretically grounded. Specifically, research shows that ongoing, positive intergroup contact (Turner 2007), is effective at generating positive relations between members of two parties where there is institutional support, where there is equal status between those involved, and where there is cooperation in order to achieve a common goal (Pettigrew and Tropp 2006). Contact has most benefit if those involved identify both with their own group (e.g., researchers or managers) and the overarching organisation to which they both belong (Gaertner 1993).

Given the resource-intensive nature of the knowledge translation service, we need to establish how much value is added by additional support from researchers over alternative or more basic dissemination approaches. A recent Milbank review described resources aimed at making the results of systematic reviews more accessible to healthcare decision makers (Chambers 2011). A variety of resources were identified but few were evaluated, giving little insight into their impact on decision making. The proposed research will evaluate a consultative knowledge translation service provided by researchers in response to real-life uncertainties identified by NHS commissioners and involving interaction between managers and researchers. As such, the study clearly proposes research to improve knowledge transfer and innovation in healthcare delivery and organisation. The study will also offer the chance to test methods of costing enhanced review services and to estimate the financial value of such interventions.

This research is timely because of the current and future need to use research evidence effectively to ensure optimum use of resources by the NHS, both in accelerating innovation and in stopping the use of less effective practices and models of service delivery. The statutory requirement for CCGs promote the use of research evidence supports the need for a formal evaluation of a service intended to help them to do this. If the interaction and synthesis elements of the model prove to be of value, there is potential for offering a standardised service on a more expanded basis. This has the potential to benefit patients and the healthcare system by reducing duplication of effort, promoting transparent decision-making and the optimum use of available resources.

Research Questions

Primary research question

- Does access to a demand led knowledge translation service improve uptake and use of research evidence by NHS commissioners compared with less intensive and less targeted alternatives?

Secondary research questions

- Do evidence briefings (summaries of synthesised research evidence with additional contextual information and implications for decision-making) tailored to specific local contexts inform decision making in other jurisdictions?

- Does contact between researchers and NHS commissioners increase use of research evidence?

Methods

Ethical Issues

No ethical issues are anticipated as a result of this study. This study has been granted ethical permission by the Department of Health Sciences, The University of York research ethics board. Appropriate research governance approval will be sought for the study

Setting and Participants

Setting: CCGs in the North East of England will be assigned to one of the three interventions aimed at supporting the use of research evidence in decision-making. The governing boards of all CCGs will be approached and invited to participate in the study. We anticipate each intervention arm will include 2-4 CCGs.

Participants: Within each participating CCG, we seek involvement of all those involved in commissioning decision making processes. This will include governing board members, Exec team members, clinical leads and managers.

Overview

This is a mixed method controlled before-and-after study design with three phases.

- Pre-intervention Phase: collection of baseline outcome and process evaluation data

- Intervention Phase: delivery of study interventions

- Post-intervention Phase: collection of outcome measures and process evaluation data

Phases 1 (pre-intervention) and 3 (post-intervention)

There are two outcome measures. The first measures organisational capacity to use research evidence (CHSRF, 2005). This tool was developed and validated in Canadian healthcare organisations (Kothari, 2009, Catallo and Sidani, 2013). The second measures individual governing body members' intention to use research evidence using a tool based on the Theory of Planned behaviour (Azjen, 2009). In addition, three process evaluation measures assess changes in quality and frequency of interaction between researchers and decision-makers, documentary evidence of the use of research in decision-making and perceptions of the relationship between CCGs and researchers during the study.

Three components will be used to collect these five measures:

(1) A questionnaire based survey of individuals within the participating case sites. This will collect data for the two outcome measures (perceived organisational capacity to use research evidence and individual intention to use research evidence) at baseline (January 2014), and repeated post-intervention (February 2015). This questionnaire will be distributed to governing body and executive members of each participating CCG and will collect three sets of information: the primary outcome measure, is a validated questionnaire-based tool devised by the Canadian Health Services Research Foundation (CHSRF 2005, Kothari 2009), and modified by the Support Collaboration (Oxman 2009) – that assesses the organisations' ability to acquire, assess, adapt and apply research evidence to support decision-making. Individual members of each governing body will complete the survey, enabling exploration of variation within sites, and mean scores of all responses will be used to represent each participating CCG.

The second outcome measure (based on the theory of planned behaviour (TPB)) will measure the intentions of individual governing body members and managers to use research evidence in decision making, as well as the perceived behavioural control, social norms and attitudes towards doing so (Boyko 2011; Lavis 2011; Wilson, 2011). Thirdly, to evaluate the changes to nature of the (proposed) interactions, both within the participating sites and between commissioners and researchers, participants will be asked about their experiences with, and attitude towards researchers. Participants will be asked how much contact they have had with researchers in their job (quantity), and the success of the interaction (quality), using measures developed by Hewstone and colleagues (e.g., Hewstone, Judd, & Sharp, 2011). This section will also include questions regarding the extent to which the interactions were perceived as friendly and cooperative, as helping to achieve the goals of both managers *and* researchers. The extent to which those involved in the interaction are perceived as being on an equal footing, without either group dominating, and the extent to which the contact is perceived as being supported by the CCGs, and the NHS more generally, will also be examined. Participants will also be asked to indicate the extent to which their status as a CCG lead is important to them (ingroup identification), and to what extent they see themselves and researchers as part of one overarching group committed to achieving the same things (superordinate identification). In addition, we will include measures of perceptions of researchers in general (e.g., to what extent do you perceive them as

positive – negative, friendly – hostile, effective - ineffective; Wright, 1997's generalised intergroup attitude scale). Finally, limited information on individual characteristics (for example, previous experience of doing research and self-reported uptake of new ideas) will be collected to help us to understand variation in responses.

To maximise response rates, each participant will receive a personalised questionnaire together with a prepaid return envelope (Edwards et al, 2001) and the questionnaire will also be distributed online. Individuals who have not responded will be sent two reminders by email that will include a second copy of the questionnaire (Edwards, et al 2001). In order to compare baseline responses with those given at the end of the study, participants will be allocated a unique identification number.

(2) Collection of documents for evidence of the use of research in CCG decision-making. In this component we will collect documents including CCG Minutes and associated papers to support agenda items in meetings in which decision-making takes place. This component aims to capture reported actual use of research evidence in decision making whilst our primary outcome measures focus on *intention* to do so (intention has been shown to be a valid predictor of a significant proportion of eventual behaviour. This will also allow us to identify any additional local activity aimed at increasing the use of research evidence in decision-making that we need to take into account during analysis of impact. National level activity to increase the use of research evidence in decision-making will be controlled for by the national CHSRF survey. Documents will be collected from the participating NHS organisations during the 12 month intervention period. To minimise bias, an initial sample of all documents produced by the governing body teams during a one month period will be considered by the research team.

(3) In-depth qualitative interviews with governing and executive body members in participating case sites. These will explore perceptions of the use of research evidence locally, their experiences of the process of the evidence briefing service and study processes as well as any unanticipated consequences of the work. This will add richness and depth to our quantitative measures and help us to understand the study results. The purposive sampling criteria will include contact with the intervention. This component will take place at the end of the intervention period (January to March 2015).

In addition, a second questionnaire based survey will collect data from all English CCGs. This will include only the first outcome measure and this will be delivered at baseline (January 2014) and then again post-intervention (February 2015). CCGs are new and evolving entities, and as such we need to be able to determine if any changes viewed from baseline are linked to the intervention(s) and are not just a consequence of the development of the CCG(s) over the course of the study. To guard against this maturation bias , and to test the generalizability of findings, we will administer the CHSRF instrument to all English CCGs to assess their organisational ability to acquire, assess, adapt and apply research evidence to support decision-making. The most senior manager (Chief Officer or Chief Clinical Officer) of each CCG will be asked to complete the CHSRF instrument on behalf of their organisation.

Phase 2 (Intervention)

Participating CCGs will receive one of three interventions aimed at supporting the use of research evidence in their decision-making: 1) consulting plus responsive "push" of tailored evidence; 2) consulting plus an unsolicited push of non tailored evidence; or 3) 'service-as-usual' arm.

Intervention 1:
Consulting plus responsive "push" of tailored evidence – One local health economy will receive access to a demand led knowledge translation service provided by CRD (see: www.york.ac.uk/inst/crd/projects/knowledge_translation_service.html).

After initial relationship building, the intervention team will offer training (at least 2 sessions) on how to acquire, assess, adapt and apply synthesised existing evidence. Sessions will be based on the methodological approach developed by the CRD KT service (Chambers 2012) and will draw upon the *Tools for Policymakers* developed by the Support Collaboration (see www.health-policy-systems.com/). Training to be provided will depend on the needs on the CCG participants but is likely to cover:

- Sources of synthesised research evidence
- Question formulation
- Different types of systematic review
- Critical appraisal of systematic reviews
- Assessing uncertainty and generalisability
- NHS EED and economic evaluations

The CRD intervention team will also provide regular advice and support on how to seek solutions from existing evidence resources, question framing and prioritisation. Advice and support will be both reactive and proactive and will be delivered via telephone, email and face to face. Contact initiated by the CRD team will be made on at least a monthly basis and is expected to include:

- Regular phone calls/e-mails and face to face meetings to discuss progress on ongoing topics, identify further evidence needs and discuss any issues around use of evidence
- Alerting to new systematic reviews and other synthesised evidence relevant to CCG priorities

In conjunction with our CCG partner(s) we will develop a priority setting process that incorporates the key recommendations of the SUPPORT Collaboration: agreed timelines; explicit criteria for determining priorities; and an explicit process for determining priorities. This will include the CCG's own internal priority setting process if applicable, with additional criteria to assess the likelihood that the question can be assessed using the available sources of existing synthesised evidence.

In response to prioritised uncertainties from the CCG (Lavis 2009), CRD will synthesise existing evidence together with relevant contextual data, producing evidence briefings tailored to both the local context and their specified decisions. Based on developmental work undertaken as part of the NIHR CLAHRC for Leeds, York and Bradford, we have resourced the project so that we can respond to 6-8 key issues during the intervention phase. To date, and depending on the topic and the quantity and quality of evidence to be synthesised, CLAHRC evidence briefings have taken between 10 and 30 working days to produce.

Intervention 2:
CCGs in a second health economy will receive the same active and reactive contact, training, advice and support from CRD as those in intervention 1. However, rather than receiving the demand led tailored service, CRD will not produce evidence briefings tailored to the local CCGs context and their specified decisions but will instead simply disseminate evidence briefings generated for the intervention 1 site (with area-specific contextual information removed) and any other non-tailored briefings produced by CRD over the intervention period; thus an intervention comprising consulting plus an unsolicited push of non tailored evidence.

Intervention 3:
The third intervention constitutes a 'service-as-usual' control arm. In this, CRD will disseminate the evidence briefings generated in intervention 1 (with area-specific contextual information removed) and any other non-tailored briefings produced by CRD over the intervention period; thus, an unsolicited push of non tailored evidence.

These CCGs will receive only CRD's routine promotional activity around the value and use of evidence. CCGs allocated to this 'service-as-usual' site, will be offered the same contact, training and support from CRD as those in intervention 1 and 2 after final follow-up is complete.

Analysis

We will use ANOVAs to examine whether participants in the intervention conditions perceive themselves as experiencing more positive contact experiences and more positive attitude towards researchers over time in the intervention conditions compared to the control condition.

The primary analysis will measure the impact of study interventions on two main outcomes at two times points. The key dependent variable will be the perceived organisational capacity to use research evidence but we will also measure the impact of interventions upon our second outcome of reported research use. These will be treated as continuous variables and for each we will calculate the overall mean score, any sub scale means and related standard deviations at two time points (pre and post intervention) and within four case sites. Secondary analysis will assess interactions between the intervention received and three further continuous independent variables measuring individual demographic characteristics and the quality and frequency of contact, upon the two outcome measures.

For each of these variables, we will conduct two way repeated measures ANOVA with two within subject factors (case site [as a proxy for the model of evidence briefing service received] and time period [pre and post intervention]). SPSS version 21 "GLM" analysis procedure will be used. Case site will be included as a covariant.

Outcome measure	**Tool**	**Items in tool**
Perceived organisational capacity to use research evidence	CHRSF (Kothari, 2009)	40 items in 4 sub scales: *Acquire*: can the organisation find and obtain the research findings it needs? *Assess*: can the organisation assess research findings to ensure they are reliable, relevant and applicable? *Adapt*: can the organisation present the research to decision makers in a useful way? *Apply*: do skills, structures, processes, and culture in the organisation promote and use research findings in decision-making?
Reported research use	Theory of Planned Behaviour	15 items in 4 sub scales: Intention (3 items) social norms (4 items) self efficacy (4 items) attitudes and values (4 items)
Quality of interaction	-	25 items each on a 7 item Likert scale
Frequency of interaction between decision makers and researchers	-	2 items each on a 6 point Likert scale
Demographic information	-	Research experience Responsibility for research Education level Job role Medical qualifications Individual approach to new ideas

If data subsequently warrants more complex multivariate analysis we will explore the possibilities with a departmental statistician and the scientific advisory group. Where measures are non-normal we will transform the data (logarithmically) where necessary and possible. Analysis will be undertaken using SPSS (version 20) and STATA statistical packages.

In addition to the conventional cut offs used for statistical significance (i.e. $p<0.05$) we will use guidance on interpreting effect sizes in before after studies to examine the "importance" (clinical/policy significance) of any changes (Kazis 1989). This is calculated by taking the difference between the means at before intervention (baseline) and after intervention and dividing it by the standard deviation of the same measure before intervention. Mathematically: ES = (m1 - m2)/s1, where m, is the pre intervention mean, m2 the post intervention mean, and s1, the pre intervention standard deviation.

Analysis will be led by the Department of Health Sciences, University of York; CRD study team members delivering the intervention components will be blinded from data and analysis. Statistical support will be provided by the Department of Health Science's statistics group.

Qualitative Evaluation Process measures

Documentary evidence of the use of research in decision-making
We aim to identify and understand the ways in which research evidence is employed by each organisation and how the evidence briefings service is integrated into decision-making processes through analysis of decision-making records. Selection of relevant documents will be conducted through review of a snapshot (one calendar month) of all documents produced by each CCG relating to commissioning decision-making bodies. The evaluation team will identify relevant documents to include over the course of the study.

The precise nature of the analysis will be led by the content of the documents available. This will firstly explore how research evidence in general is used by each organisation and how this changes over time. Over the intervention period decision-making documents will be analysed each month to capture the frequency of references made to research evidence.

In the second stage, to understand how the evidence briefings service has been integrated into decision-making processes a case study approach will be adopted. We will identify comparable case study topics within each site by focusing on one topic that is common to all sites and collecting all documentation relating to this topic. Using a thematic approach that focuses on the process of decision-making (Swan et al, 2011), these documents will be analysed in depth to identify when and how research evidence, including the evidence briefings service itself, has been employed. Using a thematic approach and NVivo software (NVivo qualitative data analysis software; QSR International Pty Ltd. Version 10, 2012), documents will be thematically coded to capture the ways in which research evidence has been used in the decision-making process.

Qualitative interviews
The framework approach to analysis will again be applied to interview data. Deductive and inductive themes will be generated and interpreted using Atlas-TI (www.atlasti.com) to organise and manage the data. Member validation will be employed with all participating CCGs in each of the local health economies. In particular, it is anticipated that themes relating to the following areas will be explored:

- Knowledge of and perceptions of the aims and expectations of the EBS received by the case site

- Expectations of and perceived impact of the EBS delivered in the CCG

- Attitudes to researcher evidence and how these relate to the EBS received.

- Perceptions of the use of research evidence locally

Data integration
This is a mixed methods study using a sequential explanatory strategy (Creswell, 2009). The primary point of data integration will be the analysis stage in which themes generated by qualitative analysis will be used to help us to understand variation in quantitative outcomes in each site. During this process data will be integrated in three ways.

- Interviews will be categorised according to the intervention received and differences in the themes generated by each interview will be compared and contrasted across case sites

- Individual interviews will also be categorised according to the participant's survey responses to questions about relationships with researchers

- Themes generated by interviews on the subject of the case study topics will be compared with those arising from documentary evidence to identify any conflict or consistency between local perceptions of the use of evidence and recorded use of evidence

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