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Methods of disseminating and translating research findings to health care professionals and other stakeholders

National University of Ireland, Galway

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Structured PhD

A thesis submitted to the College of Medicine, Nursing and Health Sciences, National
University of Ireland, Galway in fulfilment of the requirements for the degree of
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LIST OF ABBREVIATIONS

AB	Áine Binchy
AC	Aislinn Conway
CEBIS	Clinical Evidence Based Information Service
CIHR	Canadian Institutes of Health Research
CREC	Clinical Research Ethics Committee
D & I	Dissemination and implementation
DCC	Delayed cord clamping
DD	Declan Devane
DECIDE	Developing and Evaluating Communication Strategies to Support Informed Decisions and Practice Based on Evidence
DN	Deirdre Naughton
EBM	Evidence-based medicine
EOGBS	Early-onset group B streptococcus
EPG	Evidence in Practice Group
EPOC	Effective Practice and Organisation of Care
FTE	Full-time equivalent
GA	Gestational age
GBS	Group B streptococcus
GRADE	Grading of Recommendations Assessment, Development and Evaluation
GRADEproGDT	Grading of Recommendations Assessment, Development and Evaluation Professional Guideline Development Tool
GRC	Graduate Research Committee
HCP	Health care professional
HRB-TMRN	Health Research Board Trials Methodology Research Network
HS	Holger Schünemann
HSE	Health Service Executive
IAP	Intrapartum antibiotic prophylaxis
ICU	Intensive care unit
iSoF	Interactive ‘Summary of findings’
JG	Jane Grosvenor
JJ	Jean James
KT	Knowledge translation
KTPC	Knowledge Translation Professional Certificate
LM	Lisa Maguire
MC	Mike Clarke

Mgt C	Margaret Coohill
MD	Maura Dowling
MECIR	Methodological Expectations of Cochrane Intervention
Reviews	
NCHD	Non-consultant hospital doctor
NHS	National Health Service
NICU	Neonatal intensive care unit
NMPDU	Nursing Midwifery Planning and Development Unit
NS	Nancy Santesso
NUI Galway	National University of Ireland, Galway
OHRI	Ottawa Hospital Research Institute
PhD	Doctor of Philosophy
PKT	Practicing Knowledge Translation
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
RCOG	Royal College of Obstetricians and Gynaecologists
RM	Rebecca Morgan
SoF	'Summary of findings'
SOP	Standard operating procedure
ST	Shaun Treweek
TDF	Theoretical Domains Framework
TIDieR	Template for intervention description and replication
UHG	University Hospital Galway
UHCW	University Hospitals Coventry and Warwickshire
UK	United Kingdom

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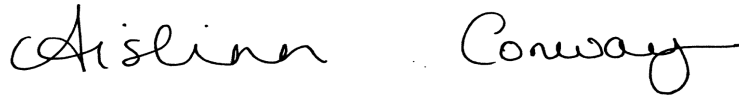
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DECLARATION

I, Aislinn Conway certify that this work is submitted to fulfil the requirement of the degree of Doctor of Philosophy, at the National University of Ireland, Galway. I have not obtained a degree from the National University of Ireland, Galway, or elsewhere, on the basis of the work described in this thesis. Apart from the contributions listed in the [Contributions to Research](#) section, this thesis is my own work.

Signed:  Date: 30/04 /2019
Aislinn Conway

Ethical approval in the study described in Chapter 4 (paper 3) was granted approval by the Galway University Hospitals Clinical Research Ethics Committee (CREC) on the 2nd of June, 2016, Ref: C.A. 1505.

DEDICATION

I would like to dedicate this thesis to my mother, Maura and grandmothers Margaret and Catherine.

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CONTRIBUTIONS TO RESEARCH

This thesis consists of 3 papers of which two have been published and one has been submitted for publication. The first paper, presented in Chapter 2, is a systematic review focusing on a summarisation product. AC coordinated the review, designed the search strategy, undertook the searches and organised the retrieval of full-text papers. DD and AC independently screened search results against eligibility criteria and assessed risk of bias. AC and DD appraised the quality of papers and the certainty of the evidence. AC and DD independently extracted the data from papers. AC entered data into RevMan and wrote to authors of papers for additional information. ST, NS and RM were consulted in relation to the eligibility of one paper. ST was later consulted in relation to the eligibility for another paper. NS advised on the presentation of narrative information in the review's 'Summary of findings' tables. AC analysed and interpreted the data, and wrote and sent an initial draft to DD to review. MC, ST, NS, HS, RM, and LM reviewed the subsequent draft. The second paper, presented in Chapter 3, is a multiple methods study reporting the implementation of a multicomponent strategy. AC and DD devised the study. AC wrote and sent an initial draft. MD, AB, JG, MC, DN and JJ reviewed the draft and AB, JG, MC, DN and JJ acquired and provided follow up data. The third paper, presented in Chapter 4, is a qualitative study reporting the findings of focus groups and interviews. AC developed the interview guide and sent to DD for approval. AC developed a list of *a priori* codes. AC and MD independently reviewed the transcripts and listened to the audio recordings. AC and MD identified emergent codes. AC uploaded the transcripts to NVivo and assigned codes. AC wrote the draft. DD and MD reviewed the draft.

LIST OF THESIS OUTPUTS

Peer-reviewed papers published or in-press

1. Conway A, Clarke MJ, Treweek S, Schünemann H, Santesso N, Morgan RL, Darragh M, Maguire LK, Devane D. Summary of findings tables for communicating key findings of systematic reviews. *Cochrane Database of Systematic Reviews* 2017, Issue 2. Art. No.: MR000044. [DOI: 10.1002/14651858.MR000044].
2. Conway A, Clarke MJ, Treweek S, Schünemann H, Santesso N, Morgan RL, Darragh M, Maguire LK, Devane D. Summary of findings tables for communicating key findings of systematic reviews. *Cochrane Database of Systematic Reviews*, Issue Art. No. (in press, publication date, volume and issue to be confirmed).
3. Conway A, Dowling M, Binchy Á, Grosvenor J, Coohill M, Naughton D, James J, Devane D. Implementing an initiative to promote evidence-informed practice: part 1 — a description of the Evidence Rounds program. *BMC Medical Education*, 2019; 19(1):74. [DOI : 10.1186/s12909-019-1489-y]
4. Conway A, Dowling M, Devane D. Implementing an initiative promote evidence-informed practice: part 2—healthcare professionals' perspectives of the Evidence Rounds programme. *BMC Medical Education*, 2019;19(1):75. [DOI : 10.1186/s12909-019-1488-z]

Conference poster and oral presentations

1. Conway A. (2018). The 5 best tips I've learned to tackle the gap between evidence and practice. Health Research Board Trials Methodology Research Network. 4th Clinical Trials Methodology Symposium, Galway, Ireland
2. Conway A, Dowling M, Devane D. (2017). Promoting evidence informed practice an initiative for health care professionals. Health Research Board Trials Methodology Research Network 3rd Clinical Trials Methodology Symposium, Dublin, Ireland
3. Conway A, Dowling M, Devane D. (2017). Evidence Rounds: a targeted initiative to disseminate research evidence to health care professionals (HCPs). Evidence Live, Oxford, UK

4. Conway A. (2016). Acupuncture for tension-type headache. Cochrane UK and Ireland Symposium, Birmingham, UK (Poster)
5. Conway A, Devane D. (2016). Implementation of an initiative to disseminate research evidence to health care professionals: a protocol. Health Research Board Trials Methodology Research Network. 2nd Clinical Trials Methodology Symposium, Cork, Ireland (Poster)
6. Conway A, Dowling M, Devane D. (2015). Methods of disseminating systematic review findings to health care professionals. 1st annual Health Research Board Trials Methodology Research Network Clinical Trials Methodology Symposium, Dublin, Ireland.

Non-conference poster and oral presentations

1. Conway A. (2018). A multi-component initiative for health care professionals to disseminate key research findings and promote evidence-informed practice. CIHR Ottawa, Canada
2. Conway A. (2018). Practicing Knowledge Translation Course. Toronto, Canada
3. Conway A. (2015). Disseminating key findings of systematic reviews to health care professionals. Medical Research Council Hub for Trials Methodology Research Student Symposium. Glasgow, UK
4. Binchy Á, Crichton H, Murphy M, Conway A. (2016). Evidence Rounds 1: Premedications for Non-emergency Intubation in Neonates. University Hospital Galway, Galway, Ireland
5. Naughton D, Ciociou I, Dempsey M, Conway A. (2016). Evidence Rounds 2: Timing of umbilical cord clamping. University Hospital Galway, Galway, Ireland
6. James J, Grosvenor J, Nasr A, Conway A. (2016). Evidence Rounds 3: Medical Treatment of Preterm Infants with Patent Ductus Arteriosus (PDA). University Hospital Galway, Galway, Ireland
7. Coohill M, O' Toole F, Naveed M, Conway A. (2016). Evidence Rounds 4: Antenatal Screening for Group B Streptococcus. University Hospital Galway, Galway, Ireland
8. Hynes S, Binchy Á, Helps Ä, Perusko Matasic N, Conway A. (2016). Evidence Rounds 5: Antenatal corticosteroid use for preterm deliveries less than 37 weeks. University Hospital Galway, Galway, Ireland
9. Reidy AM, Hakem E, Devane D, Conway A. (2017). Evidence Rounds 6: Fetal blood sampling. University Hospital Galway, Galway, Ireland
10. Conway A. (2016). Knowledge Translation Plan: Evidence Rounds. Knowledge Translation Professional Certificate. Peter Gilgan Centre for Research and Learning, Toronto, Canada

11. Conway A, Dowling M, Devane D. (2016). Evidence Rounds: a targeted initiative to disseminate evidence to health care professionals. College of Medicine Nursing and Health Sciences Postgraduate Research Day. National University of Ireland, Galway, Galway, Ireland (Poster).

Online resources

- Conway A. Evidence Rounds (website). (2016). www.evidencerounds.com

Awards

- Infographic Cochrane UK and Ireland Symposium Birmingham, UK 2016 - student winner (joint)

Certificates

- Knowledge Translation Professional Certificate accredited by the University of Toronto - 2016
- Practicing Knowledge Translation Certificate accredited by the University of Toronto - 2018
- Leadership Skills accredited by Quality and Qualifications Ireland (QQI) - 2015

Additional publications and collaborations during PhD

1. Wuytack F, Meskell P, Conway A, McDaid F, Santesso N, Hickey FG, *et al.* The effectiveness of physiologically based early warning or track and trigger systems after triage in adult patients presenting to emergency departments: a systematic review. *BMC Emergency Medicine* 2017;17:38. [DOI:10.1186/s12873-017-0148-z]
2. Houghton C, Dowling M, Meskell P, Hunter A, Gardner H, Conway A, *et al.* Factors that impact on recruitment to randomised trials in health care: a qualitative evidence synthesis. *Cochrane Database of Systematic Reviews* 2017, Issue 5. Art. No.: MR000045. [DOI: 10.1002/14651858.MR000045]. (Protocol)

3. Conway A. Medical students in the United States reveal their ideal expectations to help planners of a new library. *Evidence Based Library and Information Practice* 2017;12(3): 168-171.
4. Casey D, Lynch U, Murphy K, Cooney A, Gannon M, Houghton C, Hunter A, Jordan F, Smyth S, Conway A, Kenny F, Devane D, Meskell P. Therapeutic lying and approaches to dementia care in Ireland: North and South. (2016). The Institute of Public Health in Ireland. (Report)
5. Conway A. Medical school librarians need more training to support their involvement in evidence based medicine curricula. *Evidence Based Library and Information Practice* 2016;11(2):201-203.
6. Conway A. One-Shot Library Instruction Sessions May Not Increase Student Use of Academic Journals or Diversity of Sources. *Evidence Based Library and Information Practice* 2015;10(4):238-240.

ABSTRACT

There are many barriers to the uptake of research findings including information overload, a lack of health literacy skills, a lack of access to research resources. Knowledge translation and dissemination and implementation research attempt to address the gap between evidence and decision-making, policy-making or practice. Derivative summarisation products and multi-component programmes can be used as tools in the knowledge translation process.

My objectives were to:

- assess studies of the effects of ‘Summary of findings’ (SoF) tables for communicating key findings of systematic reviews;
- plan, design and implement an evidence-informed, theory-driven initiative for health care professionals, called Evidence Rounds, which disseminates evidence, and promotes implementation and evidence-informed practice;
- describe the processes, mechanisms and contextual factors involved in the implementation of Evidence Rounds;
- report follow up data regarding the impact of Evidence Rounds on clinical practice and local guidance; and
- explore the perspectives of the key stakeholder group (HCPs) who attended or participated in Evidence Rounds, and identify their preferences to inform the development of future initiatives.

Paper one is a Cochrane systematic review assessing studies of the effects of ‘Summary of findings’ tables on communicating key findings of systematic reviews of healthcare interventions to any potential user e.g. patients and their families or carers, health care professionals, policy makers, health systems managers, systematic review authors or other stakeholders.

This is followed by a two-part series presenting the original research findings from the Evidence Rounds study conducted in collaboration with staff at University Hospital Galway. Paper two describes the complex process of planning, designing and implementing Evidence Rounds. I identify core components and adaptations

undertaken throughout the duration of implementation. I report attendance figures at group sessions and web analytics from the dedicated website as well as follow up data regarding implementation of evidence. Collaboration was a key feature of the initiative and this paper is co-authored by five HCPs who were members of the implementation team. I used the Template for Intervention Description and Replication (TIDieR) checklist to describe the initiative. I detail the implementation process by applying Lavis's (2003) organising framework for knowledge transfer. In Paper three, I report the findings of focus groups and interviews with HCPs who attended or presented at Evidence Rounds. I ask them to identify barriers and facilitators to attending and presenting at the initiative, the usefulness of modes of delivery used in our implementation strategy, and how the initiative could be improved and made more sustainable. I employed the framework approach by Ritchie and Spencer (1994) to analyse the data.

This PhD research indicates that single and multi-component knowledge translation innovations have potential to improve evidence use and uptake by clinicians and other stakeholders as methods and tools to summarise and synthesise findings. This thesis contributes to the field of knowledge translation by presenting the first systematic review assessing studies of the effectiveness of 'Summary of findings' tables. Paper 2 introduces and describes the implementation process of a novel and complex initiative that led to changes in clinical guidance and practice. The findings reported in Paper 3 contribute to the understanding of individual and organisational-level contextual factors relating to multicomponent knowledge translation strategies experienced by health care professionals. This thesis strengthens the need for future research to further explore both approaches, particularly around the issues of design, development and tailoring to target audiences, to increase the likelihood of adoption and evidence use.

CHAPTER 1: INTRODUCTION

SUMMARY OF INTRODUCTION

The topic of this PhD thesis is methods of disseminating and translating research findings to health care professionals and other stakeholders. In this chapter, I discuss the concepts of diffusion, dissemination and implementation, knowledge translation, the evidence to practice gap, context and complexity, and potential barriers and facilitators to evidence use in greater detail. I present a rationale for the methods used to approach the research, the research aims and objectives, and finish with an overview of the structure of the upcoming chapters.

BACKGROUND

Evidence plays a vital role in a wide range of processes relating to the delivery of care to patients including: educating and training health care professionals (HCPs); informing patients and enabling them to make well-informed healthcare decisions; planning treatments; and developing and updating policies, procedures, protocols and clinical guidelines. Yet, as has been reported widely (Dopson 2009; Handley 2016; Kitson 2013), a translation gap exists between research evidence and its implementation. Bridging this gap to achieve access to high quality health services is a societal concern not limited to those working in the field of health care or research, current patients, or policymakers; but also future patients, families and carers, patient advocacy groups, professional bodies, charity organisations, research funders and politicians for example.

Within the literature discussing or describing efforts to move knowledge into action, many terms have been used. These include knowledge translation (Straus 2013), dissemination and implementation (Brownson 2018), knowledge transfer (Lavis 2003), knowledge mobilisation (Ferlie 2012), knowledge brokering (Dobbins 2009), knowledge exchange (Contandriopoulos 2010), and knowledge utilisation (Estabrooks 2004). Several terms are used synonymously and some overlap “interrelated concepts and practices” (Wilson 2010: p 1). This chapter will introduce and discuss three terms central to this research that exist on a continuum; diffusion, dissemination and implementation; although a more detailed examination of each of

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these concepts individually is beyond the scope of this thesis and the underlying programme of research.

Lomas (1993) presents diffusion, dissemination and implementation as processes where information flows from a source with increasing levels of proactivity from the person seeking to communicate the message:

- *diffusion* is a passive process for the person communicating the message and it is generally the receiver who actively seeks the information;
- *dissemination* is a more active process where the flow of information from the source is tailored to the target audience to increase the likelihood of awareness; and
- *implementation* is a more active process than dissemination. The message is tailored and targeted, and additionally, implications of the message, barriers to the uptake of evidence and related solutions are identified and addressed.

Diffusion

Diffusion is “. . . the passive, untargeted, unplanned and uncontrolled spread of new interventions” (Rabin 2018, p.22). Nilsen (2015) categorised Everett Rogers’ model of diffusion of innovations as a classic theory in implementation research. A systematic review of 235 studies evaluating guideline dissemination and implementation, found only 53 (22.5%) of studies used theories to inform their research (Davies 2010). My PhD research is underpinned by Rogers’ theory, in particular the elements he identifies as having an influence on adoption of an innovation by a population, and his categorisation of people based on how receptive they are to adopting an innovation. Rogers highlights four elements that can influence the spread of new innovations: the innovation itself; communication channels; time; and the social system that can include individuals, groups or organisations (Rogers 2003). These elements guided the systematic review reported in Chapter 2 in which I compare studies of an innovation (which is itself a communication channel) to different formats of the innovation and other innovations. I assess how the characteristics of the innovation itself influenced a number of outcome measures including the time taken to read and extract information. I was interested in how any social system might influence their

Chapter 1: Introduction

effectiveness so I did not exclude studies based on the types of participants. In Chapter 3, I detail the characteristics and implementation of a different innovation with multiple communication channels that took place over a specified time in a complex hospital-based social system. In the study reported in Chapter 4, I collected and reported perceptions of individuals within that social system using focus groups and one-to-one interviews.

Rogers categorised the players within the social system into five separate groups according to how receptive they were to a new innovation: innovators; early adopters; early majority; late majority and laggards. See Figure 1.1 for his estimation of their distribution within a given population. In line with this, for the innovation reported in Chapters 3 and 4, I expected my target audience to consist of individuals who might adopt the initiative, at different time points and for different reasons. Therefore, I planned the initiative using a strategy to engage multiple types of adopters. Firstly, I communicated with and disseminated information to the target audience using multiple modes of delivery (communication channels) to accommodate people's preferences. Secondly, I acknowledged the importance of the social system by fostering stakeholder engagement, and collaborating, partnering and developing positive relationships with the target audience. With this in mind, I recruited an implementation team of champions, opinion leaders and enthusiastic individuals (see chapter 3). I communicated with the target audience both directly and through my implementation team for those who might place a high value on recommendations from colleagues. I also gained buy in from opinion leaders and champions who were influencers within the organisation. I designed a user-centred initiative, which I developed and adapted in response to continual feedback from the target audience. I took this approach to inform my follow up strategy to gather data on whether the evidence communicated contributed to changes in practice or local clinical guidance. I followed up with our implementation team three times after the end of the initiative to allow adequate time for individuals within the social system to work together to implement the evidence or take other actions where indicated. After the first 3 months, the evidence included in the

initiative had resulted in some changes and by 16 and 21 months longer-term outcomes and impact on the health system were evident.

Figure 1.1 Adaptation of Everett Rogers' Adopter Categorisation on the Basis of Innovativeness has been removed due to Copyright restrictions

Dissemination

Dissemination has been defined as “. . . the active approach of spreading evidence-based interventions to the target audience via determined channels using planned strategies” (Rabin 2018, p. 22). Scullion (2002) identified four key features of dissemination; the source, the message, the medium and target users. The source of the information is important because even the most relevant information can be disregarded if the source or messenger is not seen as credible. Scullion suggests that forming multidisciplinary steering groups or research teams from the start may enhance credibility of individuals by promoting collegial relationships. Blachman-Demner (2017) has also recommended that partnerships play a fundamental role in dissemination and implementation research. According to Scullion, a message being disseminated is more likely to be positively received by the target audience if the intervention is shown to be effective and they are provided with information on how to apply it to their own practice. The medium (this is referred to as mode of delivery in this thesis) is more effective when used in combination with other mediums (Scullion 2002). Lastly, he believes that target users should be involved from early in the dissemination strategy to enhance engagement and increase the likelihood of evidence utilisation.

According to McCormack (2013), dissemination is a necessary process, but additional factors may be required before adoption and implementation can occur. For this

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reason, he identifies three broad goals for dissemination activities and these have been instrumental to my PhD research. The first goal was to increase the reach of the evidence to multiple types of users. In the systematic review reported in chapter 2, I assessed the effects of our chosen intervention (a dissemination tool) on all potential types of user. For the initiative that disseminated evidence to HCPs (the focus of chapters 3 and 4), I invited multiple disciplines and professions to participate.

The second goal identified by McCormack and used in my PhD research was to increase the motivation to use and apply the evidence. In chapter 2, “User satisfaction/ preferences/attitudes” is assessed as an outcome with the goal of gaining an understanding of what might make users more likely to adopt this innovation. The intention was to design and adapt initiative components that would act as a driving force for target audience utilisation.

The third goal recommended by McCormack is to increase the ability to use and apply the evidence. In chapter 2, I was interested in identifying characteristics of the intervention that might increase user understanding and accessibility of key findings. In the multicomponent strategy, my role as knowledge translation specialist involved disseminating evidence to HCPs and adapting the strategy in accordance with their needs to increase their ability to use and apply the evidence. All of McCormack’s (2013) three goals were the subject of questions asked during our focus groups and interviews (reported in chapter 4).

Green and colleagues portray dissemination as part of a process moving towards user implementation. The user judges whether the evidence being disseminated is useful and whether it will be adopted. This is why the user and the potential for implementation should be factored in at the planning stage of dissemination strategies (Green 2009).

Implementation

Implementation has been defined as “. . . the process of putting to use or integrating evidence-based interventions within a setting” (Rabin 2018, p. 22).

The distinction between dissemination and implementation science versus practice is of importance to my research. Straus and colleagues (2018) define and

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conceptualise these terms in [Figure 1.2](#) below. In chapter 2, the systematic review could be categorised as research into dissemination because it assesses how a variable (summarisation product) influences outcomes relevant to the spread of knowledge (key findings from systematic reviews). The initiative reported in chapters 3 and 4 involved the practice of disseminating evidence to a target audience and the practice of implementing the evidence when it was judged appropriate. I systematically reported the processes and methods used to disseminate and promote the implementation of evidence using TIDieR (Hoffman 2014) and the organising framework for knowledge transfer (Lavis 2003).

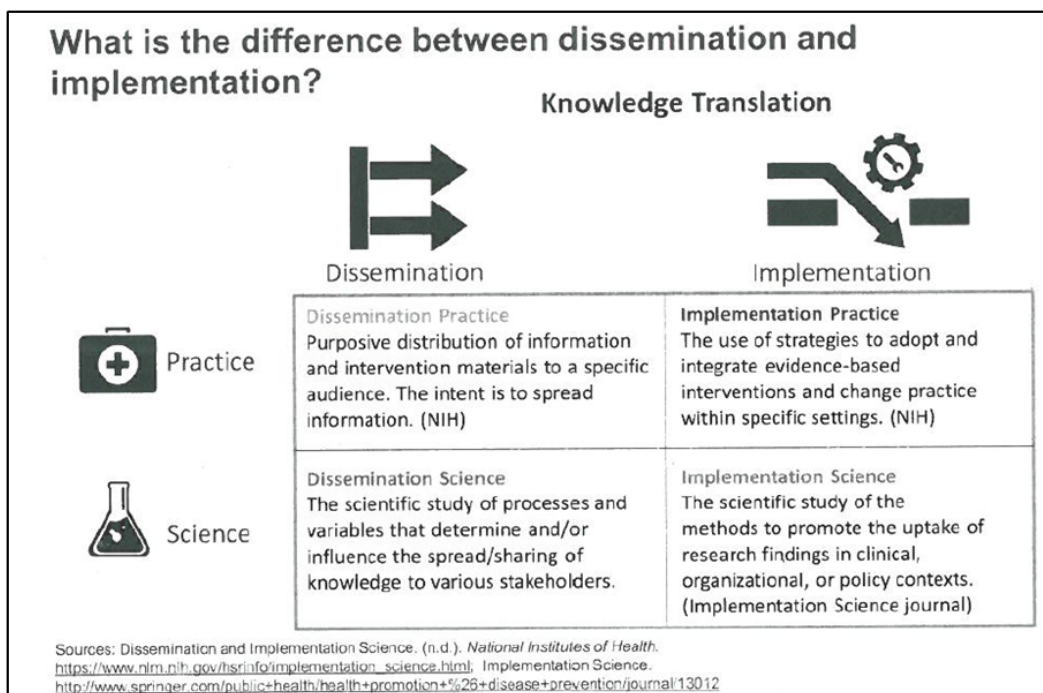


Figure 1.2 Dissemination and implementation practice and science (Source: Straus 2018, p. 77)

The National Institutes of Health National Cancer Institute describes implementation science as “young, evolving and complex” (National Institutes of Health National Cancer Institute 2018, p. 4). They recognise challenges for researchers in this field associated with interventions, processes and contexts and their impact on outcomes. To address these challenges, in chapter 3, I report the components and adaptations used in the initiative and the implementation process. In chapter 4, I

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report data from focus groups and interviews to provide contextual information sourced from our target audience about our implementation strategy.

My decision to use the organising framework for knowledge transfer by Lavis (2003) in chapter 3 was driven by Tabak's (2013) 3-model categorisation to describe theories, models and frameworks in dissemination and implementation research (see [Figure 1.3](#)). The first category relates to construct flexibility. Tabak and colleagues identified a 5-point scale on which the constructs of the research could range from broad to allow for greater flexibility to a narrower, more operational approach. Our multi-component initiative could be categorised as level 2 on the construct flexibility scale, featuring some core components yet prioritising flexibility and adaptation to meet user needs. The second category assigned research according to the level of focus on dissemination and implementation. During the planning phase, our initiative was categorised as having a greater focus on dissemination and a lesser focus on implementation ($D > I$). This approach safeguarded the initiative from failing to achieve its objectives if contextual (rather than innovation) factors led to the failure of evidence implementation where appropriate. However, I promoted implementation at every opportunity. The third and final category looked at the socio-ecological framework in which the research takes place. The initiative was hospital-based and so it can be categorised as being within the organisational level on the socio-ecological framework.

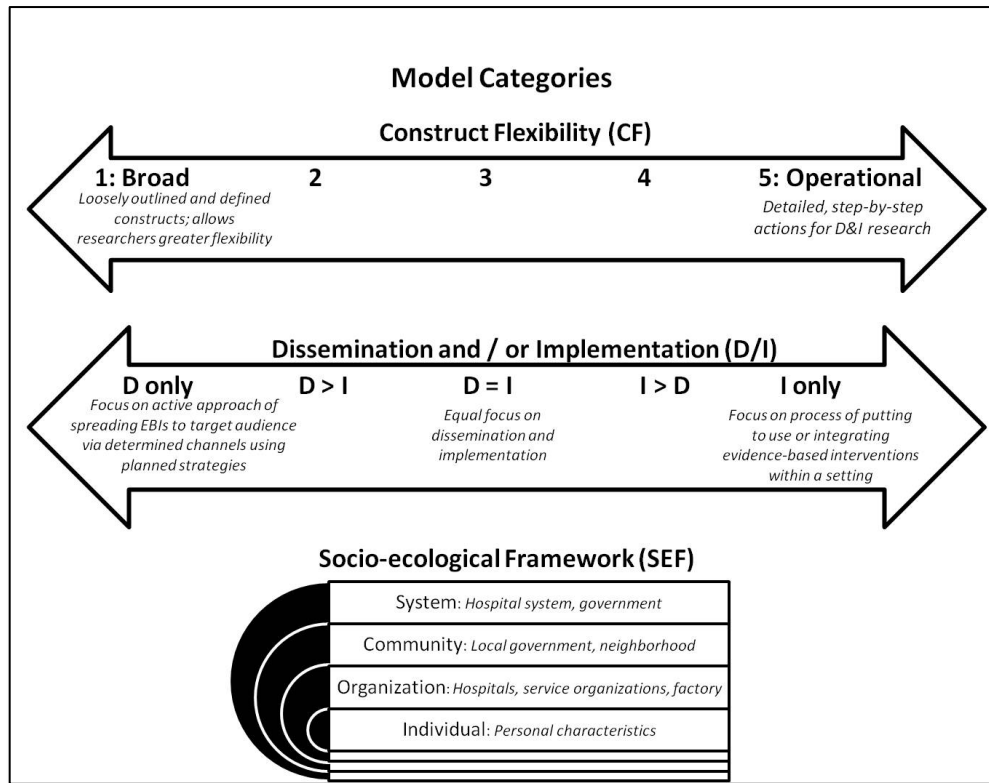


Figure 1.3 Three-factor construct definition and taxonomy (Source: Tabak 2013, p.5)

Knowledge translation: the connection to dissemination and implementation

Knowledge Translation (KT) can be described as encompassing both dissemination and implementation. It has been defined by the Canadian Institutes of Health Research (CIHR) as “. . . a dynamic and iterative process that includes the synthesis, dissemination, exchange and ethically sound application of knowledge to improve health, provide more effective health services and products and strengthen the health care system” (2016). Straus (2009) acknowledges the synonymous use of the term dissemination and implementation in the United States and knowledge translation in Canada. Knowledge translation occurs almost exclusively within complex systems. Greenhalgh criticises the knowledge translation metaphor, describing it as an “oversimplification” (2018, p. 14) based on assumptions that do not account for the complex relationships between:

- a) the researcher and the research – even knowledge from systematic reviews and randomised trials that people think of as methodologically robust, can be influenced or biased by the researcher or research team;
- b) scientific facts and practice - Greenhalgh does not believe that knowledge and practice are easy to separate from each other so a perceived “gap” between knowledge and practice is problematic; and
- c) practice and decision-making - decisions are not always based on logical reasoning and evidence.

For each of these assumptions, contextual dependencies can have an impact on the translation of knowledge so an intervention that succeeds in one setting may fail in another. For example, in policy-making both timing and contextual factors can converge into an opportune policy window. The resulting policy will reflect the circumstances in which it was made yet those issues may not be important in other settings, or at other times (Greenhalgh 2018).

Bowen and Graham (2013) highlight two main paradigms that can influence strategies designed to address the knowledge to action gap. The first paradigm is the problem of knowledge transfer, which posits that there is a sub-optimal or a lack of dissemination of knowledge to target users. Therefore, the goal is to improve

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communication and dissemination of evidence so that research is more available to those who need it. This flow of research towards users is unidirectional and efforts are made to enable the target audience to use the results. The knowledge transfer problem is a fundamental assumption of the diffusion of innovations theory (Rogers 2003) and is addressed by the research presented in this thesis. The second problem is of knowledge production where the knowledge being produced fails to meet the needs and priorities of the target users. Therefore, the flow of information is bidirectional between the researcher and the user, and its goal is to improve the use of evidence (Bowen 2013). Integrated KT differs from KT because it features both paradigms and involves collaboration and partnership between researchers and knowledge users from conceptualisation of the research to the implementation of the evidence (Gagliardi 2017). The program described in chapters 3 and 4 of this thesis are centred on an KT strategy and can be categorised as “end of project” or “end of grant” KT and relates to dissemination.

A multicentre, randomised trial compared three knowledge translation strategies; providing users with access to an online registry of research evidence; tailored messaging; and knowledge brokering services (Dobbins 2009) in health departments. It found that only tailored messaging was successful and that this was the case in the public health sector alone.

In a systematic review and thematic analysis by Bornbaum (2015), knowledge brokers were found to carry out many tasks relating to KT. However, of the two studies included in an analysis of their effectiveness, only one demonstrated a positive effect. See chapter 3 for additional evidence relating to KT strategies.

A recent systematic review of research implementation strategies for policy making and healthcare management decisions included a thematic analysis of 16 studies (Sarkies 2017). Six factors were associated with positive outcomes; 1) prioritising practice change, 2) forging stakeholder relationships, 3) sharing a vision for the strategy, 4) making change possible, 5) effective communication and 6) having adequate resources to support change.

STATEMENT OF THE PROBLEM

The evidence to practice gap

In 1990, Gordon Guyatt first coined the term evidence-based medicine (EBM) to describe a residency program that was being offered at McMaster University (Guyatt 1992). A 2007 poll amongst British Medical Journal (BMJ) readers reported that EBM is considered one of the top ten most important medical milestones since 1840 (BMJ 2007). Many improvements in the provision of health care to patients have been attributed to EBM. The charity Sense about Science and the Academy for Medical Royal Colleges published a booklet containing 15 examples of how EBM had led to improved care for patients (Sense about Science 2013). Examples include: reduced mortality in premature infants; the safer delivery of breech infants; HIV becoming a treatable rather than a terminal disease; and improved surgical techniques to reduce bowel cancer deaths. However, evidence-based approaches have received criticism for the prioritisation of evidence from randomised trials (Sur 2011), their lack of ability to address patient multi-morbidity (Greenhalgh 2014) and other factors. Yet, others argue that the problem is not with evidence-based approaches but with the design approach of the primary evidence that is its basis. Trials are often designed poorly and, for example, often exclude patients with multimorbidity, which is common in routine practice (Man 2016; Watt 2017). Evidence-informed approaches promote a greater appreciation for other types of evidence, such as that coming from qualitative and mixed methods studies (Woodbury 2014). Both evidence-based and evidence-informed approaches acknowledge that decisions should not only focus on research evidence but also, clinician experience and patient values and preferences (Sackett, 1996; Rabin 2018). However, the latter focuses more on contextual factors such as organisational influences, resource availability and applying treatment while factoring in co-existing medical conditions of individual patients. Due to this inherent flexibility, “evidence-informed” is the preferred term used in this thesis.

The evidence to practice gap can be considered in terms of delays or failures in the adoption of an innovation that has been shown to be effective in research. By way of

illustration, Green and colleagues present the “leaky pipeline” continuum (see [Figure 1.4](#) below) depicting their view of the “successive constrictions of the flow of knowledge and an ‘evidence-based guideline’ product at the practitioner end of the pipeline that has a poor fit with practice circumstances such as funding, time constraints and patient demands” (Green 2008, p. i21). This diagram is frequently mentioned in the dissemination and implementation literature because of its relevance and depiction of factors that have been found to have an influence on this field.

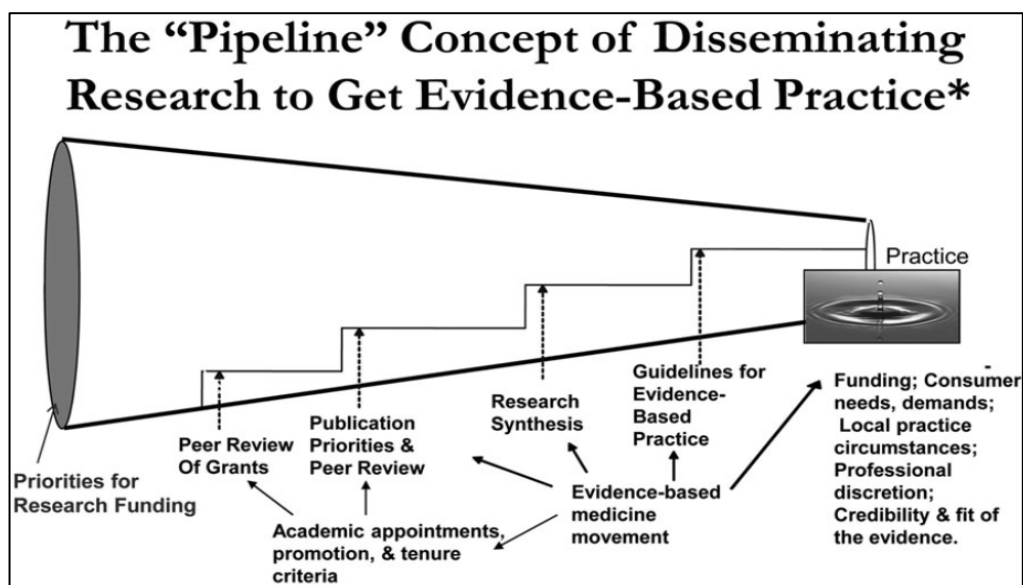


Figure 1.4 The leaky pipeline (Source: Green 2008, p. i21).

Context and complexity in health services research

In the Matching Michigan patient safety study, Dixon-Woods and colleagues (2013) interviewed staff from 17 intensive care units (ICUs) about an improvement programme they had implemented. In six ICUs, positive changes to practice and culture were evident but the other 11 ICUs made negligible changes. Data revealed that contextual factors had a large influence on the effect of the program. Actions towards moving evidence to practice were more likely to happen if implementation individuals or teams placed value in the program, forged transdisciplinary relationships, were credible messengers, welcomed discussion and were firm in their responses, and employed multicomponent strategies “ . . . including role modelling,

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persuasion, sanctioning, reminders, and constant feedback . . .” (Dixon-Woods 2013, p. 9).

Complexity can influence the adoption and implementation of evidence-informed practices on three levels. Firstly, dissemination and implementation strategies used to promote evidence-informed practices can be complex particularly when they have multiple components. Secondly, in some cases the evidence-informed practices which HCPs are being asked to do can be complex. Thirdly, complexity can exist within contextual dependencies which can include individual, organisational and intervention level factors. In addition, health services or systems are dynamic environments that change from site to site and over time. According to May (2016), not only do contextual dynamics matter, but frequently they have the most significant impact on an intervention.

In chapter 3, I present a logic model that was developed iteratively and demonstrates the complex process and relationship of elements throughout the implementation of our initiative.

Potential barriers to the use of evidence

Existing literature recognises the significant role of barriers to the uptake and use of evidence. Although stakeholder-specific barriers exist, many are shared by HCPs, patients, carers, members of the public, policy-makers and other stakeholders.

Information overload is a widely-reported barrier. Fraser and Dunstan (2010) calculated that it would take a newly qualified professional in diagnostic imaging in cardiology more than 40 years to get up to date with the literature in their field, before even embarking on reading manuscripts published that day. I further discuss information overload in chapter 2. Another barrier to evidence use that impacts on information overload, is time constraints. In a study by Weng (2013), questionnaire responses from 5,038 HCPs revealed that 60% felt that lack of time was a barrier to evidence-based practice (EBP). In Heiwe’s (2011) exploratory study of HCPs evidence-based practices within a hospital setting, the largest barrier to EBP was the lack of time. Related to the issue of time is busy workplaces with competing priorities. In a qualitative study of nurses, Thompson (2008) explored how a “busyness” culture impacts on research use. Their findings suggest that being busy

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leaves staff with minimal time to find and use research, because of the need to prioritise activities of direct patient care.

Other barriers relate to the ability to use and apply evidence such as low health information literacy including a limited ability to access resources (Burkiewicz 2005; Lai 2010; Malik 2016), a lack of critical appraisal training and skills, (Weng 2013; Salbach 2007), a lack of understanding of statistical information (Salbach 2007; Sherriff 2007), and underdeveloped literature searching skills (Weng 2013; Salbach 2007).

In a systematic review to identify barriers to the use of evidence from systematic reviews, the authors divided results into 3 categories:

- knowledge barriers such as a lack of awareness or familiarity with the evidence;
- attitudinal barriers such as a lack of motivation or perceived usefulness of the evidence; and
- behavioural barriers such as a lack of access to resources or a lack of training (Wallace 2012b).

Certain factors such as attitudes and beliefs about the value of research or evidence in practice (Salbach 2007; Lai 2010; Sherriff 2007) can be either barriers or facilitators to the uptake of evidence.

Potential facilitators to the use of evidence

Facilitators that may improve evidence use include strengthening collaborations between those who carry out the research and policymakers, and improved relationships and skills (Oliver 2014). Malik (2016) used a survey to capture the perceptions of nurse educators, clinical coaches and nurse specialists regarding evidence-based practices. There were 135 respondents to the survey. Staff ranked organisational-level factors such as support from their fellow nursing staff and management as the two most important facilitators to adopting EBP.

Systematic reviews are important tools for evidence-informed practice as they contain high-quality evidence regarding healthcare interventions. In a systematic review, Wallace and colleagues identified 54 facilitators to the uptake of evidence from systematic reviews including: the perceived usefulness of the evidence; content

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showing benefits, costs and other information; a 1:3:25 graded format; training on its use and peer support (Wallace 2012a). A Cochrane review of 8 studies investigating the effects of interventions to improve the uptake of systematic review findings found that mailing a printed bulletin may improve uptake of the evidence summarised from a systematic review (Murthy 2012). Summarisation products derived from systematic reviews have the potential to be effective at disseminating and translating evidence while reducing the time required to read a systematic review, which often feature large volumes of information. Summarisation products can be developed to feature the most important content in formats that are accessible and tailored for the target audience. [Table 1.01](#) lists some types of summaries derived from systematic reviews.

Table 1.01 Derivative products that summarise systematic review findings

Summary	Information format
'Summary of findings' table	Tabulated text
Evidence profile	Tabulated text (SoF table + additional information)
Podcast	Audio
Infographic	Graphics and text
Blogshot	Images optimised for social media, containing minimal text and graphics
Plain language summary	Text that is understandable to a non-clinical, non-research audience
Video summary	Audio-visual, sometimes animated

I decided to explore two separate innovations varying in their complexity for disseminating and translating research evidence and attempt to gain an understanding of their potential to reduce evidence translation gaps. Both innovations address the recognised KT challenges of information overload and time limitations of the target audience discussed earlier in this chapter. Firstly, I chose 'Summary of findings' tables because they are a single-component innovation that

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are used widely and recommended as a derivative systematic review summarisation product; yet I was not aware of evidence confirming their effectiveness. Next, I chose a more complex innovation featuring a KT strategy with multiple components. As part of my PhD, funding was granted for the purpose of rolling out educational sessions for healthcare professionals to bridge the gap between research and practice. From previous experience of working in this area, I had found that a similar target audience reported gaining more from a multi-component strategy when compared to more traditional educational approaches such as journal clubs. This innovation additionally addresses KT barriers linked to health information literacy such as under-developed statistical analysis and critical appraisal skills.

‘Summary of findings’ tables

‘Summary of findings’ tables are derivative products designed to disseminate and translate systematic review findings into a clear and concise package for users. They are recommended widely for inclusion in systematic reviews (Higgins 2011; Higgins 2016). They aim to present only the most pertinent information from the systematic review to users, in a tabulated format. ‘Summary of findings’ tables include the following:

- patient/population/problem
- intervention and comparison
- outcomes
- number of studies and participants
- effects of the intervention or methods
- level of certainty of the evidence using the grading of recommendations assessment, development and evaluation (GRADE) approach.

Chapter 2 features a systematic review assessing studies of the effects of ‘Summary of findings’ tables at communicating key findings of systematic reviews (see [Appendix 2.1](#) for our published protocol). The Cochrane Knowledge Translation Strategy prioritises the improvement of dissemination products focusing on aspects such as user needs, relevancy, formatting and accessibility (Cochrane 2017). These and other aspects are key to chapter 2 which also includes a more detailed explanation and examples of ‘Summary of findings’ tables.

Multicomponent strategies

While ‘Summary of findings’ tables are potentially effective methods of disseminating and translating evidence from systematic reviews, multicomponent or multifaceted dissemination and translation strategies offer a greater level of opportunity for exploration at the levels of the individual, the organisation and the intervention. To date, there has been little agreement on whether strategies with multiple components are any more effective than those with a single component (Grimshaw 2012; Squires 2014; McCormack 2013; Van der Wees 2008). This issue is discussed further in Chapter 3.

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Strategies featuring multiple components have the potential to lead to improvements in patient care when compared to single component strategies. However, it is not possible to definitively predict the combination of strategies that will work in a given setting (Hulsher 2009). These types of strategies can be complex themselves and take place within complex settings where contextual dependencies influence their effectiveness. Several researchers in the dissemination and implementation field have highlighted the importance of context in implementation research. According to Mittman (2018), it is necessary to gain an understanding of the processes and mechanisms used in implementation strategies, and to investigate the circumstances that increase their effectiveness.

For this PhD research, I decided to plan, design and implement an original multicomponent strategy, aimed at disseminating and translating evidence to health care professionals. The name Evidence Rounds was chosen to align with other multidisciplinary meetings aimed at hospital employees such as Grand Rounds and Schwartz Rounds (Health Service Executive Quality Improvement Division, 2018). The Evidence Rounds initiative took place in the Women and Children's division at University Hospital Galway, part of the Galway University Hospitals Group and the Saolta University Health Care Group West. This is an urban hospital with approximately 3,481 full-time equivalent (FTE) employees (Saolta University Health Care Group, 2018). The target audience and study population was Health Service Executive (HSE) employees working in the neonatal and obstetrics departments (for topics covered see [Figure 1.5](#)).

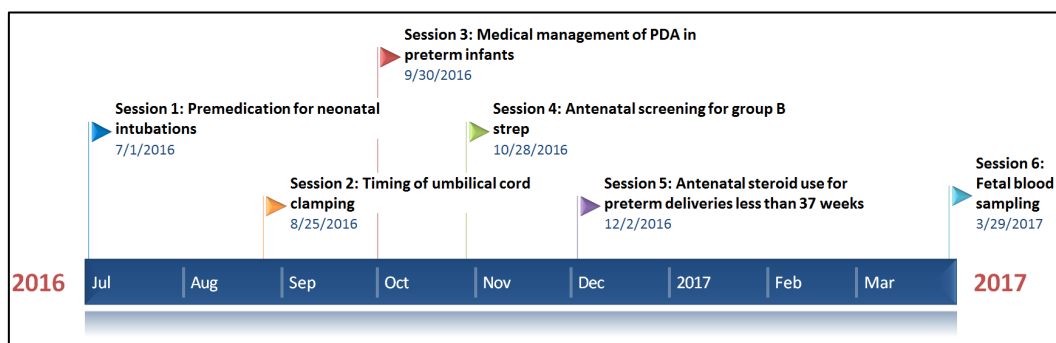


Figure 1.5: Schedule and topics of Evidence Rounds group sessions

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Evidence Rounds was inspired by the Evidence in Practice Group (EPG) model shown in [Figure 1.6](#) (Cox 2010). I adapted several important features for the design and implementation. For example, evidence is presented by an Information Specialist in the EPG sessions and by a team of 3 HCPs in Evidence Rounds group sessions.

Figure 1.6 Evidence in Practice Group model (Source: Cox 2010) has been removed due to Copyright restrictions

During the implementation of Evidence Rounds, I adhered to a number of core components but used a flexible approach, by carrying out adaptations where indicated. See Chapter 3 for a more comprehensive description of the core components, modes of delivery and adaptations used in the strategy.

The initiative was developed iteratively using the logic model template by the W. K. Kellogg Foundation (see [Figure 1.7](#))

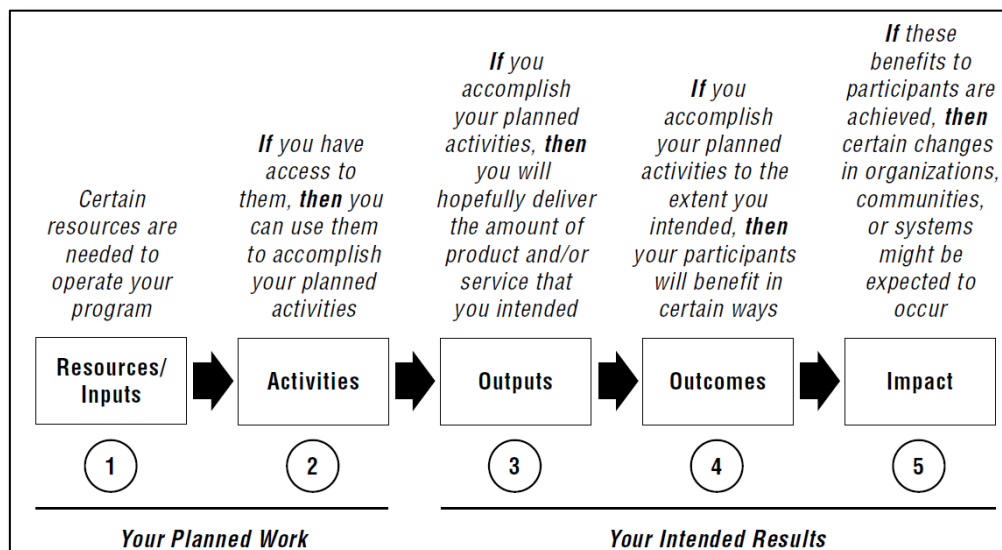


Figure 1.7: How to read a logic model (Source: W.K. Kellogg Foundation 2004, p. 3)

Proctor (2013, p. 1) described implementation strategies as having “unparalleled importance” in implementation science. I used the organising framework for knowledge transfer proposed by Lavis (2003) and the TIDieR checklist (Hoffman 2014) as tools to report the implementation strategy.

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The qualitative findings in Chapter 4 illustrate how participants perceived this multifaceted strategy and help inform the understanding of the elements and circumstances that did, and did not work in our local context.

During the planning phase and throughout the programme, I addressed the issue of sustainability. According to Tricco and colleagues (2016), sustainability of KT interventions is often neglected. While it was clear that it would be challenging to change behaviours and optimise organisational factors within our planned implementation period of 6 months, the intervention was designed to introduce the idea of sustainability and I began this conversation with the potential adopters at the planning phase (see Chapter 3).

RATIONALE FOR THE METHODS USED IN THIS PHD RESEARCH

In this thesis, research methods to explore the dissemination and translation of research findings can be divided into two parts. Firstly, I wanted to use methods to describe research focused on ‘Summary of findings’ tables before systematically gathering and analysing data from studies that met a pre-specified criteria. Individual trials are important tools when assessing the effects of an intervention. However, bringing these together in systematic reviews allows one to examine the total body of evidence, including pooling the findings of multiple trials (when available) to assess the effects of an intervention, and comparing and contrasting their findings. Such reviews include the assessment of the risk of bias from the included trials and provide an assessment of the level of certainty of the evidence. A systematic review (preceded by a published protocol) that synthesised the evidence of the effects from multiple studies of ‘Summary of findings’ tables was deemed the design most likely to provide the best quality of evidence. The proposal for this review was submitted to, and approved by the Cochrane Methodology Review Group laying the groundwork for it to become a Cochrane Methodology Review.

Secondly, I used a multiple methods approach in the Evidence Rounds initiative, incorporating both qualitative and quantitative methods. The multiple methods approach has been described in an editorial in the *Journal of Mixed Methods Research*. Feters and Molina-Azorin (2017, p. 5) explained that multiple methods approaches feature “the substantive use” of more than one data collection process and can use any combination of quantitative and qualitative methods including the exclusive use of either. Peters (2013) highlighted that due to the complex nature of implementation this approach can allow for dynamic and non-linear actions and effects which were of interest to our exploration.

Dearing and colleagues recommend that researchers should consider technical rationalities (expert guidance) and narrative rationalities (stories about experiences) together during the dissemination of evidence-based practices (Dearing 2018, p. 55). In this PhD research, technical rationalities include systematic review methodology guidance (Higgins 2011; Higgins 2016), GRADE approaches to levels of certainty of

the evidence (Schünemann 2013), an organising framework for knowledge transfer (Lavis 2003), the template for intervention description and replication (TIDieR) checklist (Hoffman 2014), attendance figures and website analytics. I captured narrative rationalities through the use of focus groups and interviews with the target audience of the multicomponent strategy.

RESEARCH AIM AND OBJECTIVES

The overall aim of this PhD research is to extend the existing body of dissemination and implementation and KT literature by exploring methods of disseminating and translating research findings to healthcare professionals and other stakeholders.

The specific objectives are to:

- assess studies of the effectiveness of ‘Summary of findings’ tables for communicating key findings of systematic reviews of healthcare interventions;
- plan, design and implement a multicomponent, evidence-informed, theory-driven initiative, called Evidence Rounds, to disseminate and translate evidence, and promote implementation and evidence-informed practice;
- describe the processes, mechanisms and contextual factors involved in the implementation of Evidence Rounds;
- capture follow up data regarding the impact of Evidence Rounds on clinical practice; and
- explore the perspectives of the key stakeholder group (HCPs) who attended or participated in Evidence Rounds, and identify their preferences to inform the development of future initiatives.

STRUCTURE OF THE REMAINING CHAPTERS

This thesis comprises of three papers (see [Figure 1.8](#)). Chapter 2 is the systematic review based on a published protocol (Conway 2017 – see [Appendix 2.1](#)). The review was submitted for publication in November 2018 to the Cochrane Database of Systematic Reviews. It presents the methodology to assess studies of the effects of

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'Summary of findings' tables at communicating key findings of systematic reviews of the effects of healthcare interventions compared to other alternatives, and the findings.

Chapter 3, a multiple methods paper, underwent peer review and was published in the journal BMC Medical Education in March 2019 (Conway 2019a). It describes the implementation process of the Evidence Rounds initiative, reporting data collected through monitoring stakeholder engagement and includes examples of follow up data regarding evidence implementation.

The paper presented in Chapter 4 also underwent peer review and was published in a separate article in the same issue of BMC Medical Education in March 2019 (Conway 2019b). It contains the final paper that reports the findings of focus groups and interviews which elicited the perspectives of HCP on the Evidence Rounds and their preferences for future initiatives.

Finally, in Chapter 5, I discuss the main findings in relation to what is already known, the strengths and limitations of the body of research, the implications for clinical practice, and dissemination and implementation practice and future research, and present my conclusions.

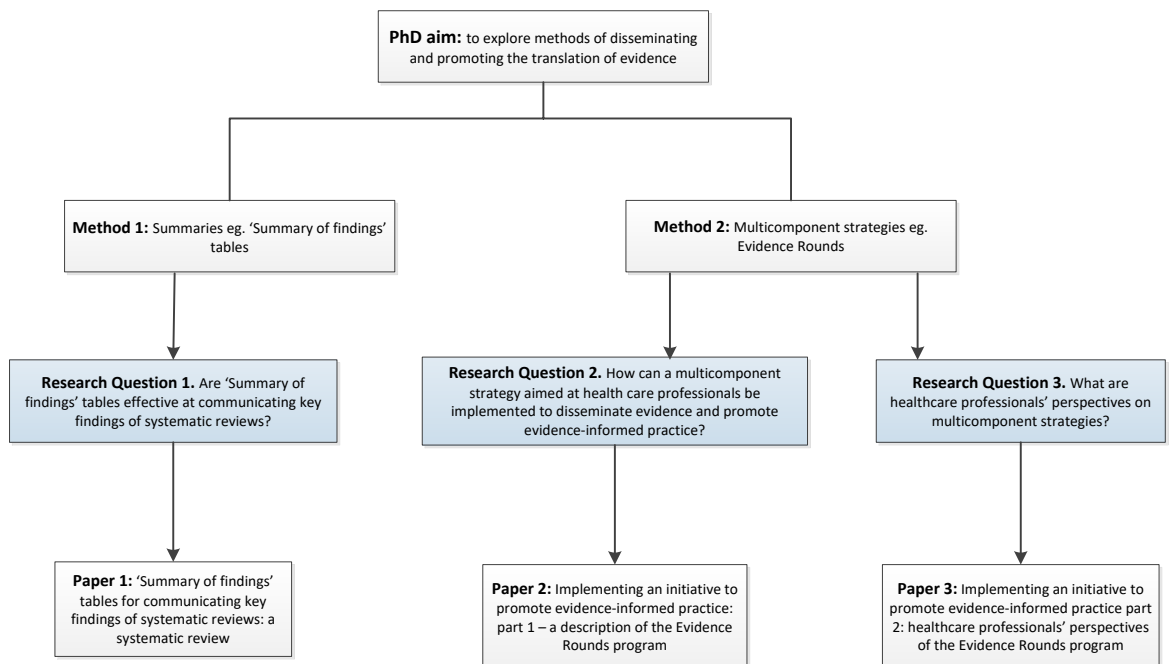


Figure 1.8 PhD research overview

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CHAPTER 2: PAPER 1

Summary of findings tables for communicating key findings of systematic reviews

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ABSTRACT

Background

Systematic reviews are important tools to translate evidence into practice and inform stakeholders. However, barriers exist that prevent the uptake of evidence from systematic reviews including their length and the time required to read them. Derivative products that summarise systematic reviews may help address these issues. 'Summary of findings' tables are one such product and it is important to have evidence of their effectiveness.

Objectives

We assessed studies of the effectiveness of 'Summary of findings' tables at communicating key findings of systematic reviews of the effects of healthcare interventions

Search methods

We searched the Cochrane Library, PubMed, Embase, CINAHL, seven other databases, four trials registers and grey literature resources together with reference checking, citation searching and contact with authors. We performed all searches up to 30 January 2018.

Selection criteria

We searched for randomised, non-randomised and cross-over trials that compared systematic reviews with 'Summary of findings' tables (interactive or static) with those without 'Summary of findings' tables, other summaries or other formats of 'Summary of findings' tables. We were interested in studies involving any potential user of 'Summary of findings' tables.

Data collection and analysis

We used standard methodological procedures expected by Cochrane.

Main results

We included three randomised trials from two papers that analysed data from a total of 395 participants. We excluded seven studies, identified two ongoing studies and one study is awaiting classification.

One study gathered data using an online survey, the other two used questionnaires distributed during meetings. All studies recruited professional groups such as

healthcare professionals, guideline developers, researchers and staff members from Cochrane entities. Due to methodological heterogeneity between trials, we conducted a narrative synthesis.

A non-inferiority trial with 290 participants compared a new format to a current format of 'Summary of findings' table. When we applied the GRADE criteria, we judged the findings from this study to have a moderate to very low level of certainty across outcomes. Assigning participants to the new format probably increased levels of understanding of key findings (risk ratio (RR) 1.28, 95% Confidence Interval (CI) 1.16 to 1.41) and probably improved overall accessibility (mean difference (MD) 0.40, 95% CI 0.20 to 0.60) when compared to the participants with the current format. After all participants were shown both versions, 69% were more satisfied with the new version than the current version and 75% preferred the new to the current version.

Two randomised trials with a total of 105 participants compared systematic reviews with 'Summary of findings' tables to systematic reviews without 'Summary of findings' tables. Using the GRADE criteria, we had low to very low certainty evidence from both studies. In the first of these trials, receiving a 'Summary of findings' table with a systematic review had little or no effect on self-perceived understanding of key findings (RR 1.10, 95% CI 0.80 to 1.50), self-reported influence on the decision-making process (RR 1.15, 95% CI 0.73 to 1.79), or the overall accessibility of the findings (RR 1.73, 95% CI 0.92 to 3.23) when compared to receiving a systematic review alone. After receiving both versions, 81% of all participants agreed that systematic reviews should include 'Summary of findings' tables and 75% found the explanation sheet helpful. In the second of these trials, assigning participants to receive a 'Summary of findings' table and systematic review may have slightly improved user understanding (RR 2.06, 95% CI 1.09 to 3.87) but made little or no difference for self-perceived understanding (RR 1.20, 95% CI 0.74 to 1.94), self-reported influence on decision-making (RR 1.30, 95% CI 0.89 to 1.91), time taken to read and extract relevant information (MD -0.82, 95% CI -2.11 to 0.46) and overall accessibility (RR 1.50, 95% CI 0.80 to 2.81) when compared to participants who were assigned a systematic review alone. On consideration of both versions, 88%

supported the inclusion of 'Summary of findings' tables in systematic reviews and 77% found the explanations helpful.

Authors' conclusions

The evidence base, even for comparisons covered by the included studies, is incomplete. The highest level of certainty reached by either comparison was moderate and for only some outcomes: a new format of 'Summary of findings' table probably improves user understanding and accessibility, when compared to a current format. The two studies provide low to very low-certainty evidence that is insufficient to support recommendations that 'Summary of findings' tables should, or should not, be included in systematic reviews.

'Summary of findings' tables are a derivative product of systematic reviews offering users a means of accessing the key findings. They are not a substitute for full systematic reviews, which contain a greater depth of information and more adequately describe the background, methodology, results and discussion. There is scope and need for larger, high-quality, trials to ascertain the optimal content and mode of presentation of 'Summary of findings' tables for diverse user populations with varying levels of literacy, health literacy and statistical numeracy.

Plain language summary

'Summary of findings' tables for communicating key findings of systematic reviews

Review question

Do 'Summary of findings' tables help improve the communication of systematic review findings?

Background

Systematic reviews are high quality studies that examine the effects of health care interventions. They provide evidence that can help improve patient care. However, they can be long and hard to understand and some people including decision makers decide not to read them. We reviewed the evidence about how well 'Summary of findings' tables communicate their findings in a clear and simple way. These tables display key information in a structured format and are recommended as summaries of systematic reviews. We searched for studies that compared them with other summaries, with full systematic reviews or with other versions of 'Summary of findings' tables. The evidence is current to 30 January 2018.

Study characteristics

We found three studies from two articles with a total of 395 participants. The studies were based in Europe, North America, South America, and Asia.

The largest study (290 clinicians, guideline developers and researchers) used an online survey to compare two different 'Summary of findings' tables. 122 people were shown a new table first that included the number of participants and studies in the outcomes column and other content and design differences including risks presented as percentages in one table but natural frequencies in another, presenting absolute risks in one table but not the other and presenting the treatment as a word-based summary in one table but not the other. The other 168 people were shown the current version of the table first, which included the number of participants and studies in a separate column, and had other differences. This study was funded by the Cochrane Methods Innovation Fund and GRADE Center at McMaster University in Canada.

The other studies, with no external funding, reported in a single paper, compared a systematic review and 'Summary of findings' table to a systematic review without a 'Summary of findings' table. In the first of these studies, 72 beginners to evidence-based medicine (mainly healthcare professionals) took part. Of these, 25 were given a systematic review without a 'Summary of findings' table and 47 were given a systematic review with a 'Summary of findings' table. In the last study, the 33 participants were members of Cochrane, a global organisation that promotes evidence-based health decisions and produces systematic reviews and other evidence. A systematic review without a 'Summary of findings' table was given to 18 people and 15 received a systematic review with a 'Summary of findings' table.

Key results

In the largest study, it was found that the new table probably improves user understanding of information compared to the current table format. The overall accessibility was judged by how easy it was to find information and whether participants thought the presentation of the information would help them make decisions. The new table probably also improves the accessibility when compared to the current table.

In the second study, a 'Summary of findings' table with a systematic review had little or no effect on self-reported understanding or influence on the decision-making process, or the overall accessibility of the findings when compared to a systematic review alone. Most people were more satisfied with and preferred the new version compared to the current version.

In the third study, giving participants a 'Summary of findings' table and systematic review may slightly improve user understanding but makes little or no difference to self-reported understanding or influence on decision-making, time taken to read and extract relevant information and overall accessibility, when compared to being given a systematic review alone. The majority of participants were more satisfied with, and preferred the new version compared to the current version.

Based on these studies, we need more research into the effects of 'Summary of findings' tables. This should include different formatting, content, and types of

participants and comparisons.

Quality of the evidence

The three studies differed in what was being compared and measured. For the largest study, we judged the certainty of the evidence as moderate to very low across outcomes due to imprecision and limitations in study design. For the other two studies, we judged the certainty of the evidence as low to very low due to limitations in study design and few participants.

BACKGROUND

Systematic reviews of randomised trials of the effects of healthcare interventions are important sources of evidence to inform healthcare decisions (Manheimer 2012). Grimshaw 2012 suggests that systematic reviews and other research syntheses should be the basic unit of knowledge translation. Elsewhere, they have been described as one of the most important tools for getting evidence into practice (Carrasco-Labra 2015). Well-conducted systematic reviews contain the depth of information and optimal methodology to best inform users for the decision-making process (Ganann 2010). The number of available systematic reviews is growing rapidly (Bastian 2010; Clarke 2018). By the beginning of May 2019, there were 7986 full Cochrane reviews published in the Cochrane Database of Systematic Reviews (Cochrane 2019). Moher 2007 found superior reporting standards in Cochrane reviews compared with non-Cochrane reviews and Lundh 2009 found that Cochrane reviews were of a higher methodological quality than non-Cochrane reviews. However, despite the quality of evidence offered by systematic reviews, uptake of the main findings can be slow or may not happen (Murthy 2012). Waddell 2001 explored dissemination and uptake problems associated with research evidence, one of which was the increasing volume of available evidence. The huge volume of information available in print and electronic formats can make it difficult to find answers to questions about the effectiveness of healthcare interventions. Bastian 2010 counted the publication of 75 trials and 11 systematic reviews of trials daily and highlighted that this number is growing. In a more recent cross-sectional study,

Page 2016 counted 682 systematic reviews indexed in MEDLINE in February 2014 and Gurevitch 2018 estimated that more than 200,000 had been published across all disciplines by early 2018. In a systematic review, Wallace 2012 explored barriers to the use of systematic reviews including; time required to read them, the complex nature of their methods and statistics, and lack of user access, perceived usefulness, awareness and training. They identified 28 barriers to the use of research evidence from systematic reviews by decision makers. They divided these barriers into three broad categories: knowledge, attitudinal and behavioural. These factors can have a negative impact on the ability and willingness of potential review users to engage with full versions of systematic reviews. Previous papers exploring information seeking behaviour of physicians revealed the lack of use of current evidence from electronic sources (Dawes 2003; Coumou 2006; Hider 2009). In a mixed methods study by Marquez 2018, a survey of healthcare managers and policy makers identified that format and content was one of the key factors influencing the uptake of findings from systematic review. In the systematic review by Dawes 2003, of the 19 included studies, the primary information source for physicians was text sources (textbooks, papers or desk reference) in 13 studies, consultations with colleagues in four studies and electronic sources in one study. Wallace 2014 recommended three interventions to help improve uptake of evidence from systematic reviews: targeted messaging, educational visits and systematic review summaries. In this review, we focused on systematic review summaries. There are several types of summaries of systematic reviews including plain language summaries (clear, concise and jargon-free summaries of the key question and findings of a systematic review (Chandler 2013; Santesso 2015; Alderdice 2016)), GRADE evidence profiles (similar to 'Summary of findings' tables but also featuring a rationale for the quality of evidence rating (Guyatt 2011; Petkovic 2016)), infographics (presentations of information featuring graphical displays such as charts and graphs (Crick 2015; Buljan 2018)) and 'Summary of findings' tables (Guyatt 2008; Manheimer 2012; Carrasco-Labra 2015). 'Summary of findings' tables are a widely-recognised product for summarising systematic reviews. According to the Methodological Expectations of Cochrane Intervention Reviews (MECIR) standards, they are recommended as “highly

desirable” for inclusion in new Cochrane reviews and it is mandatory for authors to put a plan in place for their inclusion in the protocol for reviews of the effects of interventions (Higgins 2016). Chapter 11 of the *Cochrane Handbook for Systematic Reviews of Interventions* details how to produce and present 'Summary of findings' tables (Schünemann 2017). They are also used in non-Cochrane systematic reviews (Langendam 2013).

Description of the methods being investigated

'Summary of findings' tables may be defined as tabular presentations of the key findings of systematic reviews including judgements about the certainty of the evidence, the available outcome measurements and the magnitude of the effect of the interventions. They are presented in a clear and concise format that is designed to meet the needs of decision makers (Schünemann 2013b). The main elements of a 'Summary of findings' table are:

- a description of patient/population/problem, intervention(s) and comparator(s) and all desirable and undesirable outcomes (PICO);
- a description of the study setting;
- the number of participants;
- the number of studies addressing each outcome;
- a measure of the assumed risk in the control group and the corresponding risk in the intervention group;
- the relative effect (risk ratio) or other measures of effect;
- the mean difference (MD) or standardised (MD) and confidence interval;
- the certainty of the evidence according to the Grading of Recommendations, Assessment and Evaluation (GRADE) classification terms listed in the Assessment of risk of bias in included studies section;
- a comments section.

In this Cochrane methodology review, which is based on a published protocol (Conway 2017 – see [Appendix 2.1](#)) we included studies assessing the effects of interactive or static 'Summary of findings' tables as an intervention to communicate key findings of systematic reviews of the effects of healthcare interventions. The

interactive format has additional functionality compared to the traditional static version by providing users with an option to view varying depths of information and complexity (DECIDE 2014). We also included narrative 'Summary of findings' tables where results had not been pooled in a meta-analysis or when units of analysis cannot be compared. These are 'Summary of findings' tables where authors enter a narrative description of the effect of the outcome. The 'Summary of findings' table is evolving in accordance with feedback from users. The GRADEpro Guideline Development Tool (now also called GRADEpro GDT) is an online software which enables authors of reviews and guideline developers to create their own 'Summary of findings' tables (Trewick 2013). Interactive 'Summary of findings' tables can also be created on the Epistemonikos website (<https://isof.epistemonikos.org>). More recently, summary of qualitative findings tables have been introduced to summarize the key findings from qualitative evidence syntheses. These involve using the GRADE-CERQual approach to assess the confidence in the evidence for each finding (Lewin 2015).

How these methods might work

The 'Summary of findings' table might work by providing a summary of key findings of systematic reviews of healthcare interventions to patients and members of the public, healthcare staff, policy makers and other stakeholders, with clear information presented in a user-friendly format (Glenton 2006). A study by Maguire 2014 found that it was possible for users to understand key findings of Cochrane systematic reviews using summary formats. Rosenbaum 2010 conducted a study to design a 'Summary of findings' table for Cochrane reviews that would be useful to stakeholders. They used an iterative process of brainstorming workshops, advisory group feedback and user testing to develop a 'Summary of findings' table. Participants included attendees of a workshop for beginners to evidence-based practice in Norway and, clinicians and research professionals from the UK. Most of the changes to the table addressed the issues of usability and usefulness. The aim is to resolve “the tension between achieving table precision and table simplicity” (Rosenbaum 2010).

Chapter 2: Paper 1

In an unpublished pilot study reported by Langendam 2013, researchers found that the layout of a 'Summary of findings' table for a Cochrane Review was clear, helpful for presenting results and increased the accessibility of a systematic review.

However, these findings related to a very specific participant group made up of members of Cochrane Review Groups and cannot be assumed to be widely transferable.

One mixed-methods study (Opiyo 2013) incorporating a randomised trial and follow-up participant interviews, compared providing participants with evidence resources such as systematic reviews and guidelines with and without a 'Summary of findings' table, and 'graded-entry' formats (a 'front-end' summary and a contextually framed narrative report plus the evidence resource). There were no differences between groups for the primary outcome of correct responses to a test of key clinical questions on specific topics. However, graded-entry formats received a higher composite score than evidence resources alone for their clarity and ease of use. Findings were conflicting with some users finding 'Summary of findings' tables useful for "rapid consultation", while others reported that they were difficult to understand without supplementary information (Opiyo 2013).

Why it is important to do this review

'Summary of findings' tables offer users a reduced volume of information when compared to full systematic reviews based on the same high-quality methodology of the systematic review to support the content. Lavis 2009 highlighted the need for summaries of systematic reviews featuring decision-relevant information. This review provides a single source of evidence for the effectiveness of 'Summary of findings' tables when compared to full versions of systematic reviews, other summaries of systematic reviews or different formats of 'Summary of findings' tables.

The potential beneficiaries of this review include authors of systematic reviews, because it may provide them with evidence to support the inclusion or exclusion of 'Summary of findings' tables in their reviews. If 'Summary of findings' tables support communication, then this review might also benefit users of systematic reviews such

as clinicians, guideline developers, healthcare users, policy makers and other stakeholders (e.g. charitable organisations, the patient population, the public and individuals or groups who inform them), by identifying effective ways to provide evidence in a form which allows them to quickly access and understand key findings of future reviews. It may also support these users in making decisions about whether to create their own 'Summary of findings' tables to disseminate review findings (and potentially other research findings) within their organisations.

The inclusion of 'Summary of findings' tables in systematic reviews is recommended in publications such as the *Cochrane Handbook for Systematic Reviews of Interventions* (Schünemann 2017) and the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) Working Group guidelines (Guyatt 2011; Guyatt 2013a; Guyatt 2013b). This review is timely and important because 'Summary of findings' tables are used commonly to disseminate the key findings of Cochrane Reviews yet there is no systematic review to synthesise the evidence of their effectiveness at communicating review results. In 2017, 'Summary of findings' tables featured in 87% of new Cochrane systematic reviews and 91% of updated Cochrane reviews (Cochrane 2018b). Although this systematic review asked a focused question about the effectiveness of 'Summary of findings' tables, it relates to larger problems of healthcare information overload, training requirements for stakeholders in (1) the interpretation and use of statistics (Langendam 2013) and (2) critical appraisal, and (3) the lack of time healthcare professionals have to spend reviewing evidence during decision-making and daily patient management.

OBJECTIVE

To assess studies of the effects of 'Summary of findings' tables on communicating key findings of systematic reviews of the effects of healthcare interventions.

METHODS

Criteria for considering studies for this review

Types of studies

We considered three types of study design where effects of exposure to 'Summary of findings' tables of systematic reviews of the effects of healthcare interventions on one or more outcome was measured:

- randomised trials;
- non-randomised trials;
- cross-over trials.

We followed the Cochrane Effective Practice and Organisation of Care (EPOC) Group definitions of randomised and non-randomised trials (EPOC 2017a) and the Sibbald 1998 definition of cross-over trials. We anticipated few randomised trials on this topic because 'Summary of findings' tables are a relatively new systematic review derivative product. Therefore, we chose broad inclusion criteria to include the above-mentioned study types to help us determine the potential of 'Summary of findings' tables to communicate key findings of systematic reviews (Schünemann 2013a). We only included studies where the 'Summary of findings' table was a derivative product of a single systematic review (see Differences between protocol and review). We did not exclude studies for reasons relating to their publication status or language of publication.

Types of data

We included data from studies that recruited any participant type that could potentially use 'Summary of findings' tables of systematic reviews including: patients, family members, carers, healthcare professionals, policy makers, health systems managers, systematic review authors or other stakeholders.

We considered for inclusion data from published, unpublished and grey literature assessing 'Summary of findings' tables as described by GRADE (Guyatt 2011; Guyatt 2013a; Guyatt 2013b; Agoritsas 2015) with or without full reviews with other types of summaries derived from systematic reviews, with systematic reviews without

'Summary of findings' tables, with other formats of 'Summary of findings' tables and with interactive 'Summary of findings' (iSoF) tables.

Types of methods

We considered studies that compare:

- 'Summary of findings' tables versus full versions of systematic reviews (without 'Summary of findings' tables) for communicating key findings of systematic reviews of the effects of healthcare interventions (Comparison 1);
- 'Summary of findings' tables plus full review versus full review (no 'Summary of findings' tables) for communicating key findings of systematic reviews of the effects of healthcare interventions (Comparison 2);
- 'Summary of findings' tables versus other summaries of systematic reviews for communicating key findings of systematic reviews of the effects of healthcare interventions (Comparison 3);
- interactive 'Summary of findings' tables versus static 'Summary of findings' tables for communicating key findings of systematic reviews of the effects of healthcare interventions (Comparison 4);
- 'Summary of findings' tables versus other formats of 'Summary of findings' tables for communicating key findings of systematic reviews of the effects of healthcare intervention (Comparison 5)

Types of outcome measures

Primary outcomes

We chose three primary outcomes:

- User understanding of key findings of systematic reviews measured by the ability to correctly answer factual questions about the review;
- Self-perceived understanding of key findings of systematic reviews as reported by the user;
- Self-reported influence on decision-making.

Secondary outcomes

We chose four secondary outcomes:

- Time taken to read summary and extract relevant information;
- Accessibility of the main findings of the review;
- User satisfaction/preferences/attitudes;
- Other outcomes not reported in the protocol whose importance was realised after the protocol was written or when the analysis was done. If other outcomes were identified, to address any concerns of bias we stated that we would provide a justification of the outcome inclusion (Kirkham 2010).

Search methods for identification of studies

At least one article has reported that the first evaluation of 'Summary of findings' tables occurred in 2005 (Langendam 2013). Nevertheless, we were uncertain as to whether 'Summary of findings' tables were mentioned in the literature before 2005. Therefore, we did not apply publication date restrictions to our searches. We also did not apply search restrictions or filters relating to language of publication, study design or publication format.

Electronic searches

We searched the following electronic databases and citation indexes:

- PubMed (National Center for Biotechnology Information)
- Cochrane Library (Wiley Online Library)
- Campbell Collaboration (Campbell Collaboration)
- CINAHL Complete (EBSCOhost)
- LILACS (Virtual Health Library)
- Web of Science Core Collection (Thomson Reuters)
- Scopus (Elsevier)
- Embase (Elsevier)
- Epistemonikos (Epistemonikos.org)
- Trip Database Pro (Trip Database Ltd.)
- PsycINFO (Ovid)

We detail the search strategies used for each database including the dates of coverage, in [Appendix 2.2](#). We searched the following grey literature sources: EThOS; OpenGrey (www.opengrey.eu); Cochrane Colloquium Abstracts (<http://abstracts.cochrane.org>) and Grey Literature Report (www.greylit.org). We searched the following trials registers: CENTRAL (via the Cochrane Library); Clinicaltrials.gov (www.clinicaltrials.gov); the World Health Organisation International Clinical Trials Registry Platform (WHO ICTRP) (<http://apps.who.int/trialsearch>) and PROSPERO via the Centre for Reviews and Dissemination web site (www.crd.york.ac.uk/PROSPERO). The most recent set of searches were carried out on 30 January 2018.

We used free text searching because terms for 'Summary of findings' tables were not available in controlled vocabulary thesauri such as MeSH, CINAHL headings and Emtree at the time the search was conducted.

Searching other resources

Reference lists

We searched reference lists of all included studies in an attempt to identify additional relevant resources (Horsley 2011).

Citation searches

We searched for papers which cited our included studies using Scopus's citation index functionality.

Correspondence

We contacted individuals when we became aware of a study that had not yet been published and was not readily accessible.

Data collection and analysis

The following methods were based on recommendations described in chapter 9 of the *Cochrane Handbook for Systematic Reviews of Interventions* (Deeks 2017) and the Methodological Expectations for the Conduct of Cochrane Intervention Reviews (MECIR) standards (Higgins 2016). Randomised trials would have been analysed separately from other types of study design. However, all of the studies that met our inclusion criteria were randomised trials.

Selection of studies

One reviewer (AC) uploaded electronic database results into EndNote, the reference management software package. AC then performed automated and manual deduplication. AC imported the remaining citations into Covidence, the online systematic review management software (www.covidence.org). Two review authors (AC and DD) independently screened titles and abstracts (when available) of all retrieved citations identified by searches against inclusion criteria based on types of studies and types of interventions. The citations were sorted into the following groups; 'include', 'full-text review' and 'exclude'. Both authors reviewed full text versions of papers when it was unclear whether pre-specified eligibility criteria have been met. Results that were not easy to upload to EndNote (such as those from grey literature sources) were screened separately. If, after discussion, there was still uncertainty as to whether to include a study, other review authors (ST, NS, RM) reviewed a full-text copy of the article and additional information.

We presented the number of records identified, screened and selected in an adapted PRISMA flow diagram in [Figure 2.1](#).

Data extraction and management

Two authors (AC and DD) discussed and agreed upon data fields that should be included in our data extraction forms using chapter 7 of the *Cochrane Handbook for Systematic Reviews of Interventions* (Higgins 2011b). When the fields were agreed, one review author (AC) created and completed tailored data extraction forms for

each of the studies. AC and DD extracted data independently and discussed discrepancies when they occurred. AC contacted authors to request data or other information. If resolution had not been reached, we would have consulted a third author (MC).

Extracted data included the following:

- Authors
- Year of publication
- Language
- Setting
- Country
- Study design
- Participants:
 - Professional or non-professional group e.g. patients
 - Level of experience using 'Summary of findings' tables
- Intervention
- Comparison
- Outcomes:
 - User understanding of key findings of systematic reviews measured by the ability to correctly answer factual questions about the review
 - Self-perceived understanding of key findings of systematic reviews as reported by the user
 - Self-reported influence on decision-making
 - Time taken to read summary and extract relevant information
 - Accessibility of the main findings of the review
 - User satisfaction/preferences/attitudes
 - Any other outcomes
- Length of time during which outcomes were measured after initiation of the intervention
- Whether follow-up occurred, if so, length of follow-up and follow-up points
- Data to assess the risk of bias of included studies e.g. sequence generation, allocation sequence concealment, blinding of study participants and

personnel, blinding of outcome assessors, withdrawals or incomplete outcome data, selective reporting or other sources of bias

- Funding sources.

Assessment of risk of bias in included studies

Two review authors (AC and DD) independently assessed the risk of bias for each included study on www.covidence.org. We used the criteria described in chapter 8 of the Cochrane Handbook for Systematic Reviews of Interventions (Higgins 2017). We contacted authors when additional information or clarifications were required. We would have used the Cochrane EPOC Group guidance on risk of bias criteria (EPOC 2017b), and chapter 13 of the Cochrane Handbook for Systematic Reviews of Interventions (Reeves 2011) if we had found other study designs that met our inclusion criteria as the inclusion of non-randomised studies would have brought a greater potential for bias (Higgins 2017).

We assessed the risk of bias across the following domains:

- Selection bias: random sequence generation
- Selection bias: allocation concealment
- Performance bias: blinding of participants and personnel
- Detection bias: blinding of outcome assessment
- Attrition bias: incomplete outcome data
- Reporting bias: selective reporting
- Other bias

If differences had occurred during the application of this tool, they would have been resolved by consulting a third review author. For each included study, AC and DD judged whether there was a low, unclear or high risk of bias using the terms 'Yes', 'Unclear' or 'No' respectively. We summarized our assessment for each risk of bias item for each included study in a risk of bias summary shown in Figure 2.2 and present them as percentages in a risk of bias graph shown in Figure 3.

We used the GRADE approach (Guyatt 2008) to assess the certainty of the evidence and thereby, interpret the results. This involves the GRADE classification terms: high,

moderate, low or very low. GRADE is characterised by eight criteria for authors to consider (Schünemann 2013b).

- 1 Risk of bias (potential to reduce level of quality of evidence by one or two levels)
- 2 Inconsistency (potential to reduce level of quality of evidence by one or two levels)
- 3 Indirectness (potential to reduce level of quality of evidence by one or two levels)
- 4 Imprecision (potential to reduce level of quality of evidence by one or two levels)
- 5 Publication bias (potential to reduce level of quality of evidence by one or two levels)
- 6 Large effect (potential to increase level of quality of evidence by one or two levels)
- 7 Dose response gradient (potential to increase level of quality of evidence by one level)
- 8 Plausible confounding (potential to increase level of quality of evidence by one level)

We downgraded randomised trials by one, two or three levels according to the severity of the study limitations (the first five factors listed above). If we had identified any eligible non-randomised trials, we would have upgraded them if their results had shown large effects and bias was not evident, or we would have downgraded them if they demonstrated limitations as listed above.

Measures of the effect of the methods

We present our results as a narrative synthesis using language recommended in EPOC 2018 guidance on reporting the effects of an interventions.

For dichotomous outcomes, we present the risk ratio (RR) with a 95% confidence interval (CI). Outcomes on an ordinal scale were collapsed into dichotomous outcomes. For continuous outcomes, we used the mean difference (MD) and its 95%

CI. In future updates of this review, if we conduct meta-analyses where the scale is different, we will present standardised mean differences (SMD) with 95% CIs.

Unit of analysis issues

All of our included studies were randomised trials. For studies with multiple intervention groups, we only included and analysed those which are relevant to our review. All intervention groups for each study are listed in the 'Characteristics of included studies' tables.

If cluster-randomised trials had met our inclusion criteria they would have been identified as such. We would have reported the baseline comparability of clusters and considered statistical adjustment if it would have helped to reduce an imbalance.

In future updates of this review, to avoid "double counting" data for studies that contribute more than one control group, we will combine comparison groups to create a single pair-wise comparison (Deeks 2017). If it is warranted, we will estimate the intracluster correlation coefficient (ICC) as described in chapter 16 of Cochrane Handbook for Systematic Reviews of Interventions (Higgins 2011a) using information from the study if it is available or, from an external estimate obtained from a similar study. If we do this, we will conduct sensitivity analyses to explain variation in ICC values.

Dealing with missing data

We narratively explore the potential impact of missing data in the Discussion section of the review. If we had decided that there may be reasons to impute missing data (e.g. to explore the impact of missing data in the sensitivity analysis), we would have discussed the potential harms and benefits of this. Although, if the missing data had been substantial, analysis with imputed data may have been futile.

Assessment of heterogeneity

We did not pool results into a meta-analysis, so it was not necessary to perform a statistical test for heterogeneity. We assessed methodological diversity by examining

the interventions and comparisons, the study methodology and the outcome measures. As a result of this assessment, we carried out a narrative synthesis, grouping trials with similar comparisons together to attempt to identify reasons for heterogeneity.

We had specified that we would include relevant non-randomised trials, as defined in EPOC 2017a, in this review which would have led to increased statistical heterogeneity. However, no non-randomised trial met our inclusion criteria.

Assessment of reporting biases

We conducted a comprehensive search of multiple electronic databases, trials registries, grey literature sources and used other methods of searching (listed in the Search methods for identification of studies) to decrease the risk of publication bias. We did not use language restrictions in our searches and we searched sources that do not publish English language resources exclusively, to minimise the risk of language bias. Nevertheless, the reader should consider that all of our search words and phrases were in English. Although we searched the references of included studies, this was just one of several approaches in our overall search strategy to identify studies, therefore it should not increase the risk of citation bias.

To reduce the risk of multiple (duplicate) publication bias, we grouped together reports of studies that had similarities such as the same authors, intervention and control etc. and after careful reading of full text records we made a decision as to whether the records were discussing the same study or not. We also contacted the author of two ongoing studies, which were similar to confirm whether they were multiple reports of the same study (NCT02732028 and (Yepes-Nuñez 2018)).

We included fewer than ten studies, so we did not create a funnel plot to investigate whether reporting bias existed. In future updates of this review, if we include more than 10 studies we will use the funnel plot test proposed by Egger 1997. If we notice asymmetry, we will not conclude that reporting biases exist however, we will consider the sample sizes and presence and possible influence of outliers. We will discuss potential explanations such as publication bias or poor methodological

quality of included studies and subsequently perform a sensitivity analysis.

We assessed the risk of selective outcome reporting bias by reviewing whether the outcomes listed in the protocols of our included studies that were made available when requested, matched the outcomes reported in the papers presenting the results of the studies.

Data synthesis

We did not deem it appropriate to conduct meta-analyses. Therefore, we conducted a narrative synthesis in which we grouped our studies firstly by comparison and secondly by outcome measure. We used chapter 9 of the Cochrane Handbook for Systematic Reviews of Interventions, the Cochrane Consumers and Communication Review Group guidance on data synthesis and analysis, and narrative synthesis approaches (Ryan 2016a; Ryan 2016b).

'Summary of findings' tables

Two review authors (AC, DD) assessed the quality of the evidence. Because meta-analysis was not appropriate, we present results in a narrative 'Summary of findings' table format using The GRADEpro Guideline Development Tool. We summarize the certainty of the evidence for our pre-specified outcomes across studies.

Due to the lack of a quantitative summary effect measure, the imprecision of the evidence will be an issue of concern. Based on the methods described in chapter 11 of the Cochrane Handbook for Systematic Reviews of Interventions (Schünemann 2017), by GRADE (Guyatt 2013a; Guyatt 2013b) and by the Cochrane EPOC Group (EPOC 2017c), we created 'Summary of findings' tables for the two comparisons that were possible considering the characteristics of our included studies and data extracted:

- Comparison 2: Systematic reviews with 'Summary of findings' tables compared to systematic reviews without 'Summary of findings' tables for communicating key findings of systematic reviews;

- Comparison 5: A current version of the 'Summary of findings' table compared to a new version of the 'Summary of findings' table for communicating key findings of systematic reviews.

We present the following primary and secondary outcomes for each comparison: user understanding of key findings of systematic reviews, self-perceived understanding of key findings of systematic reviews measured by the ability to correctly answer factual questions about the review, self-perceived understanding of key findings of systematic reviews as reported by the user, self-reported influence on decision-making, time taken to read and extract relevant information, accessibility of the main findings of the review, user satisfaction/ preferences/attitudes and other outcomes of main interest, as outlined in the section on Types of outcome measures. We described the study settings, participants, intervention, comparisons, number of participants and studies addressing each outcome, outcomes and impact. We used the GRADE system to assess the certainty of the evidence.

Narrative synthesis

We used the framework for narrative synthesis proposed by Popay 2006 and summarised by Ryan 2016a. The four key steps to this approach were:

1. forming a theory as to how 'Summary of findings' tables might work, for what reasons and for whom in the How these methods might work section of this review
2. producing an initial synthesis of findings of our included studies. We present effect sizes or summary data within comparisons and by outcome in [Table 2.01](#) and [Table 2.02](#).
3. exploring relationships in the data (both within and between studies). We present details of the study designs in [Table 2.03](#), [Table 2.05](#) and [Table 2.07](#)
4. assessing the robustness of the synthesis in the Discussion.

Subgroup analysis and investigation of heterogeneity

We did not pool findings from included studies, so we were unable to conduct a subgroup analysis. A subgroup analysis will be appropriate in future updates of this review if included studies satisfy criteria to assess credibility of subgroup analyses (Oxman 1992; Sun 2010). If visual inspection of forest plots, Chi² test, I² statistic and Tau² had indicated that statistical heterogeneity could be present, a subgroup analysis would have been carried out on the following a priori subgroups: different participant groups e.g. patients, policy makers or healthcare professionals; intervention characteristics e.g. different formats of 'Summary of findings' tables, different summarisation products; type of study.

In our analysis, we highlight narratively the methodological differences between studies, differences between our populations and interventions and comparators and discuss how these may have impacted our results (Ryan 2016a).

Sensitivity analysis

We did not conduct sensitivity analyses because we did not pool the data from the included studies in a meta-analysis.

RESULTS

Description of studies

See the '[Characteristics of included studies](#)' (Tables 2.03, 2.05 and 2.07), '[Characteristics of excluded studies](#)' (Table 2.09), '[Characteristics of studies awaiting classification](#)' (Table 2.10) and '[Characteristics of ongoing studies](#)' (Tables 2.11, 2.12 and 2.13).

Results of the search

Our most recent searches were performed up to 30 January 2018. We identified 2178 records of which 1955 were found through our electronic database and trial register searches, and 223 records through grey literature sources. We identified a further 140 records through reference and citation searching of included papers using Scopus. We were made aware of one additional ongoing study, which had not

yet been published and was not readily accessible, through contact with a group of researchers, one of which is an author on this review (ST). After de-duplication, we screened the titles and abstracts or full-text versions of 1252 records. [Figure 2.1](#) displays our adapted PRISMA flow diagram.

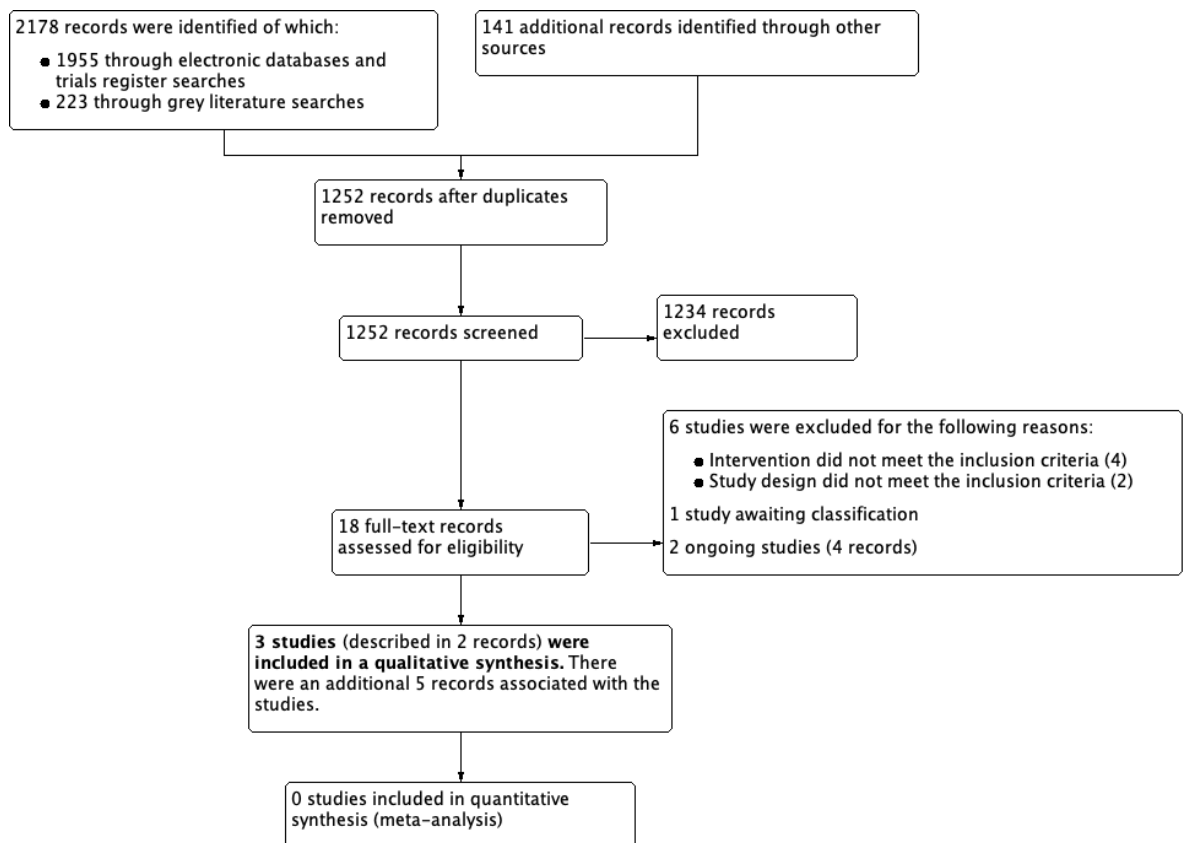


Figure 2.1 Adapted PRISMA flow diagram

Included studies

We identified three studies eligible for inclusion from two English-language records published between 2010 and 2016, which included a total of 395 participants. We contacted the authors when additional information and clarifications were needed. Due to the heterogeneity between the included studies in relation to the interventions, comparisons and outcomes, we did not pool data or perform sensitivity or subgroup analyses. The results of our comparisons are presented separately.

Study designs

All three of the included studies were randomised trials (Carrasco-Labra 2016, Rosenbaum 2010b RCT I; Rosenbaum 2010b RCT II). We did not identify any eligible non-randomised or crossover trials.

Carrasco-Labra 2016 employed an online survey and randomised participants to first receive either a current or a new version of a 'Summary of findings' table with differences in content and formatting. A non-inferiority margin of 10% for the outcome of user understanding was used between groups. After completing survey sections on understanding and accessibility for the 'Summary of findings' table to which they were randomised, participants were provided with the other version. This trial was funded by the Cochrane Methods Innovation Fund and the GRADE Center at McMaster University in Canada.

Rosenbaum 2010b RCT I, involved a multiple-choice questionnaire that was distributed to participants at a workshop in Hankø, Norway. The researchers randomised participants to one of three groups; a systematic review without a 'Summary of findings' table, the same systematic review with a 'Summary of findings' table with limited formatting and the same systematic review with a 'Summary of findings' table with full formatting. After these initial questions, all participants received both versions of the formatted 'Summary of findings' tables and were asked additional questions to measure their preferences and attitudes about 'Summary of findings' tables. This trial did not receive external funding.

The third study, Rosenbaum 2010b RCT II (published in the same paper as Rosenbaum 2010b RCT I), took place at a meeting for members of Continental European Cochrane entities in Oslo, Norway. Staff members of Cochrane entities were randomised to receive a systematic review without a 'Summary of findings' table, the same systematic review with a revised 'Summary of findings' table. In the previous study by the same researchers (Rosenbaum 2010b RCT I), the outcomes related to self-perceived understanding and user satisfaction rather than measuring actual understanding. Therefore, the researchers redesigned this study to measure user understanding by calculating the number of correct answers to questions about the findings of the review. This trial did not receive external funding.

Participants

In the study by Carrasco-Labra 2016, the 290 participants were clinicians, guideline developers and researchers based in Europe, North America, South America and Asia. In Rosenbaum 2010b RCT I, the 72 participants whose data were analysed were beginners in evidence-based practice (mainly healthcare professionals).

In Rosenbaum 2010b RCT II, the 33 participants were members of Continental European Cochrane entities. None of the studies provided specific information about participants' level of experience using 'Summary of findings' tables. We did not find any eligible studies that recruited patients, families, carers or members of the public. It is not clear whether the participants in our studies were health systems managers, policy-makers or systematic review authors. It is likely that at least some of the participants in Rosenbaum 2010b RCT II were systematic review authors as they were all involved in Cochrane.

Overview of intervention types

In Carrasco-Labra 2016, 'Summary of findings' table A featured;

- 1 Exclusion of the number of participants and studies column. Information presented in the outcomes column;
- 2 Quality of evidence presented along with main reasons for downgrading in the same column (e.g., moderate due to imprecision);
- 3 "Explanations" label;
- 4 Baseline risk and corresponding risk expressed as percentages;
- 5 Inclusion of a column presenting absolute risk reduction (risk difference) or mean difference;
- 6 Comments column deleted;
- 7 'What happens' column included (to summarize both the treatment effect and the quality of the evidence on one short narrative statement);
- 8 No description of the GRADE working group grades of evidence definitions;

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Their 'Summary of findings' table B featured;

1. Inclusion of the number of participants and studies column;
2. Quality of evidence presented with symbols and labelled as high, moderate, low, or very low. Reasons for downgrading presented in the footnotes;
3. "Footnotes" label;
4. Baseline risk and corresponding risk expressed as natural frequencies;
5. No column presenting absolute risk reduction (risk difference) or mean difference;
6. Comments column included;
7. No "what happens" column (see below);
8. Description of the GRADE working group grades of evidence definitions below the table.

In Rosenbaum 2010b RCT I, participants in the control group were provided with a copy of a systematic review by Clarke 2006 without a 'Summary of findings' table. In the first of two intervention groups, participants received a copy of the same systematic review with a 'Summary of findings' table with limited formatting. In the second intervention group, participants received a copy of the same systematic review with the 'Summary of findings' table with full formatting. The differences between the intervention group tables focused mainly on the use of colour in the background of the table cells and typography to differentiate between items.

In Rosenbaum 2010b RCT II, the participants in the control group were also assigned the Clarke 2006 systematic review without a 'Summary of findings' table. The intervention group was provided with the same systematic review and a revised version of the 'Summary of findings' table.

Overview of outcome measures

Primary outcomes

User understanding of key findings of systematic reviews measured by the ability to correctly answer factual questions about the review

Two studies measured this outcome. Carrasco-Labra 2016 asked participants seven multiple-choice questions relating to understanding of the key findings, each of which related to a format difference between the two versions of the 'Summary of findings' tables being assessed. Each question had five possible answers listed, one of which was correct. The proportion of correct answers between groups was analysed with 10% as the non-inferiority margin. In Rosenbaum 2010b RCT II, participants were asked to answer four multiple-choice questions testing their understanding of the main findings presented in the systematic review with a 'Summary of findings' table or the systematic review alone.

Self-perceived understanding of key findings of systematic reviews as reported by the user

Two studies measured this outcome (Rosenbaum 2010b RCT I; Rosenbaum 2010b RCT II). The authors asked participants to indicate their level of agreement (on a 7-point Likert scale) with two statements: (i) that the review authors had indicated the most important outcomes and (ii) that it was easy to understand the main findings of the systematic review.

Self-reported influence on decision-making

Rosenbaum 2010b RCT I and Rosenbaum 2010b RCT II measured this outcome. Participants chose their level of agreement (on a 7-point Likert scale) with a statement that the main findings of the systematic review were provided in a way that would help their decision-making process.

Secondary outcomes

Time taken to read summary and extract relevant information

One study measured this outcome (Rosenbaum 2010b RCT II) by asking participants to self-report the number of minutes it took them to answer each of the four questions measuring user understanding. They were then asked whether they would have needed more time to locate the answers.

Accessibility of the main findings of the review

In Carrasco-Labra 2016 study, participants were presented with three statements about the accessibility of the main findings of the review and asked to indicate their level of agreement on a 7-point Likert scale. Finally, students rated the overall accessibility of the information using a 5-point Likert scale. In Rosenbaum 2010b RCT I and Rosenbaum 2010b RCT II, participants were asked to choose a level of agreement (on a 7-point Likert scale) with 3 statements about the ease with which they were able to find information relating to outcomes, results and the quality of the evidence for outcomes when comparing systematic reviews with 'Summary of findings' tables to systematic reviews alone. Finally, they were asked to indicate their overall perceived accessibility.

User satisfaction/preferences/attitudes

For all three included studies, this outcome was measured after groups had been exposed to the intervention and control and for this reason the data is presented across groups rather than for each randomised group separately. In Carrasco-Labra 2016, participants were asked to answer six dichotomous questions, depending on which version of the 'Summary of findings' table they were most satisfied with, and one question about which version they preferred. Rosenbaum 2010b RCT I and Rosenbaum 2010b RCT II also asked participants a series of questions about satisfaction and preferences.

Other outcomes

In the protocol of this review, we said we would include outcomes that were not pre-specified and whose importance was realised after the protocol was written or when the analysis was done. We did not come across any outcomes that filled this criteria in our included studies.

Excluded studies

After title and abstract screening, we excluded 1234 records. An additional 18 records made it to the full-text screening stage, of which six were excluded due to their interventions or study designs. We list the reasons for exclusion of these individual studies in the [Table 2.09: Characteristics of excluded studies](#).

In addition, three records reporting two ongoing studies met our inclusion criteria for this review and are listed in the [Table 2.11: Characteristics of ongoing studies](#). NCT02732028 and Yepes-Nuñez 2018 describe the same study. When we checked with the author (RM, an author on this review) on 9 January 2017, data collection had not begun. HS is also an author on this study. Another study ISRCTN14951221, has completed the data collection stage and is currently being written up. An author on this review (ST) who is also an author on that study has informed us that an error occurred during data collection. Quantitative analysis is no longer possible however, the authors will provide a qualitative report in the future.

We also identified one study awaiting classification (Neumann 2018). Another author on this review (HS) is also an author on that randomised trial.

Risk of bias in included studies

We summarize the risk of bias results in [Figure 2.2](#) ('Risk of bias' summary: review authors' judgements about each 'Risk of bias' item for each included study) and [Figure 2.3](#) ('Risk of bias' graph: review authors judgement about each risk of bias item)

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias) All outcomes	Blinding of outcome assessment (detection bias) All outcomes	Incomplete outcome data (attrition bias) All outcomes	Selective reporting (reporting bias)	Other bias
Carrasco-Labra 2016	+	+	+	+	+	+	+
Rosenbaum 2010b RCT I	+	?	-	+	+	+	+
Rosenbaum 2010b RCT II	+	?	-	+	+	+	+

Figure 2.2: Risk of bias summary: review authors' judgements about each risk of bias item for included studies

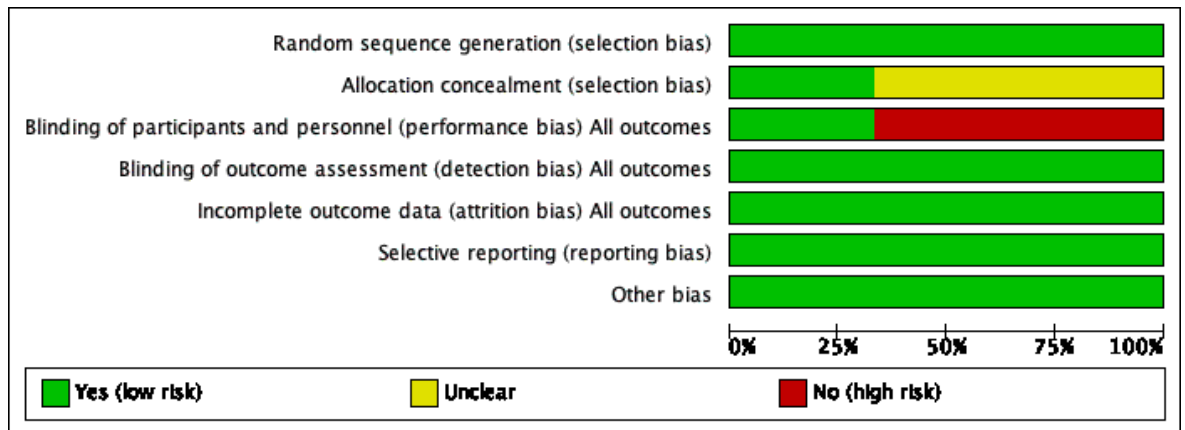


Figure 2.3: Risk of bias graph: review authors' judgements about each risk of bias item presented as percentages across all included studies.

Allocation

We judged all three studies to be at low risk of bias in relation to random sequence generation.

We judged one study (Carrasco-Labra 2016) to be at low risk of bias in relation to allocation concealment. For Rosenbaum 2010b RCT I and Rosenbaum 2010b RCT II, the methods used to protect the allocation sequence before assignment was judged unclear.

Blinding

Blinding of participants and personnel

We judged one study (Carrasco-Labra 2016) to be at low risk of bias for performance bias on all outcomes. In Rosenbaum 2010b RCT I and Rosenbaum 2010b RCT II blinding of participants was not done. Therefore, we judged these studies to be at high risk of performance bias.

Blinding of outcome assessment

We judged one study (Carrasco-Labra 2016) to be at low risk of detection bias. In Rosenbaum 2010b RCT I and Rosenbaum 2010b RCT II assessors were not blinded. However, they did not interpret or judge the answers in any way, so we judged the risk of detection bias as low.

Follow up and exclusions

Outcomes were assessed once in each of our included trials and further follow-up data collection was not conducted. In the Carrasco-Labra 2016 study, seven people abandoned the online survey before they had completed all sections which meant that their participation was voided. Less than 20% of all reported outcomes had incomplete data and therefore, this study was judged to be at low risk of attrition bias. Two studies (Rosenbaum 2010b RCT I; Rosenbaum 2010b RCT II) did not have any exclusions from analysis therefore, they were deemed to be at low risk of attrition bias.

Selective reporting

We judged that for all three studies, the outcomes mentioned in the protocols were reported in the studies or sent to us as unpublished data by the study authors. Therefore, they were at low risk of reporting bias for all outcomes. After Rosenbaum 2010b RCT I, the same unpublished protocol was used with some amendments for the Rosenbaum 2010b RCT II study to better measure the outcome of user understanding of key findings of systematic reviews.

Other potential sources of bias

We did not identify other sources of bias for included studies.

Effects of methods

There were no studies for the following comparisons:

- Comparison 1: 'Summary of findings' tables versus full versions of systematic reviews on communicating key findings of systematic reviews of the effects of healthcare interventions;
- Comparison 3: 'Summary of findings' tables versus other summaries of systematic reviews on communicating key findings of systematic reviews of the effects of healthcare interventions;

- Comparison 4: interactive 'Summary of findings' tables versus static 'Summary of findings' tables on communicating key findings of systematic reviews of the effects of healthcare interventions.

The three included studies provided data for the following two comparisons:

Comparison 2: the effects of 'Summary of findings' tables plus systematic review versus systematic review alone on communicating key findings of systematic reviews of the effects of healthcare interventions

Two trials addressed this comparison (Rosenbaum 2010b RCT I; Rosenbaum 2010b RCT II). See Table 2.01.

Primary outcomes

User understanding of key findings of systematic reviews measured by the ability to correctly answer factual questions about the review

One study reported this as an outcome (Rosenbaum 2010b RCT II). A systematic review and 'Summary of findings' table may slightly improve understanding when compared with the systematic review alone (risk ratio (RR) 2.06, 95% CI 1.09 to 3.87). GRADE: low (-2 levels: study design - unclear risk of bias due to a possible lack of allocation concealment and lack of blinding, imprecision – optimal information size (OIS) not met).

Self-perceived understanding of key findings of systematic reviews as reported by the user

Rosenbaum 2010b RCT I and Rosenbaum 2010b RCT II found that a systematic review with a 'Summary of findings' table made little or no difference to participants reporting that the important information was easy to understand when compared to a systematic review alone (RR 1.10, 95% CI 0.80 to 1.50, and RR 1.20, 95% CI 0.74 to 1.94), GRADE: low (-2 levels: study design - unclear risk of bias due to a possible lack of allocation concealment and lack of blinding, imprecision– OIS not met). The

authors noted that user testing before the trial and discussion after the trial revealed that self-perceived understanding was a misleading indicator of actual understanding as many of the participants misunderstood the information.

Self-reported influence on decision-making

Rosenbaum 2010b RCT I and Rosenbaum 2010b RCT II reported this as an outcome. The use of a systematic review and 'Summary of findings' table made little or no difference to participants' decision-making process compared to systematic review alone (60% v 52% respectively, RR 1.15, 95% CI 0.73 to 1.79) and (87% v 67% respectively RR 1.30, 95% CI 0.89 to 1.91). GRADE: low (-2 levels: study design - unclear risk of bias due to a possible lack of allocation concealment and lack of blinding, imprecision—OIS not met).

Secondary outcomes

Time taken to read summary and extract relevant information

One included study reported this outcome (Rosenbaum 2010b RCT II). Providing participants with a 'Summary of findings' table and a systematic review made little or no difference to the mean time it took to answer questions when compared to participants who only received a systematic review (MD -0.82, 95% CI -2.11 to 0.46). GRADE: low (-2 levels: study design - unclear risk of bias due to a possible lack of allocation concealment and lack of blinding, imprecision—OIS not met), Analysis 1.4. A systematic review with a 'Summary of findings' table made little or no difference to the need for additional time to answer questions when compared to a systematic review without a 'Summary of findings' table 79% versus 64% respectively (RR 1.2, 95% CI 0.79 to 1.81). GRADE: low (-2 levels: study design - unclear risk of bias due to a possible lack of allocation concealment and lack of blinding, imprecision—OIS not met).

Accessibility of the main findings of the review

Rosenbaum 2010b RCT I and Rosenbaum 2010b RCT II reported this outcome. Assigning participants to receive a 'Summary of findings' table and systematic review

may make little or no difference to how likely they were to agree or strongly agree that, overall, the findings were accessible when compared to the systematic review alone (RR 1.73, 95% CI 0.92 to 3.23). GRADE: very low (-4 levels: study design – outcome measured using observational design, unclear risk of bias due to a possible lack of allocation concealment and lack of blinding, imprecision–OIS not met).

User satisfaction/preferences/attitudes

Rosenbaum 2010b RCT I and Rosenbaum 2010b RCT II reported this outcome. After exposing participants to the intervention and control, 81% and 88% respectively agreed that 'Summary of findings' tables should be included in systematic reviews. In total, 75% and 77% judged the explanations of the tables as helpful. GRADE: very low (-3 levels: study design – outcome measured using observational design, imprecision–OIS not met).

Table 2.01 Systematic reviews with 'Summary of findings' tables compared to systematic reviews without 'Summary of findings' tables for communicating key findings of systematic reviews

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with systematic reviews without 'Summary of findings' tables	Risk with systematic reviews with 'Summary of findings' tables				
User understanding of key findings of systematic reviews measured by the ability to correctly answer factual questions about the review	Low 39 per 100	80 per 100 (43 to 100)	RR 2.06 (1.09 to 3.87)	33 (1 RCT)	⊕⊕○○ LOW ^{a,b}	A 'Summary of findings' table with a systematic review may slightly improve user understanding when compared to a systematic review alone.
Self-perceived understanding of key findings of systematic reviews as reported by the user	Both studies found that receiving a systematic review with a 'Summary of findings' table made little or no difference to participants' self-perceived understanding when compared to those who received the systematic review alone (RR 1.10, M-H, 95% CI 0.80 to 1.50) and (RR 1.20, M-H, 0.74 to 1.94).			105 (2 RCTs)	⊕⊕○○ LOW ^{a,b}	A systematic review with a 'Summary of findings' table may make little or no difference to self-perceived understanding when compared to a systematic review alone.
Self-reported influence on decision-making	In both studies, the use of a systematic review and 'Summary of findings' table made little or no difference to participants' decision-making process compared, to a systematic review alone (60% v 52% respectively RR 1.15, M-H, 95% CI 0.73 to 1.79) and (87 v 67% respectively RR 1.30, M-H, 95% CI 0.89 to 1.91).			105 (2 RCTs)	⊕⊕○○ LOW ^{a,b}	A systematic review and 'Summary of findings' table may have little or no influence on decision-making compared, to a systematic review alone.

Time taken to read and extract relevant information	The mean time taken to read and extract relevant information was 2.55 minutes	The mean time taken to read and extract relevant information in the intervention group was 0.82 The mean time taken to read and extract relevant information in the intervention group was minutes lower (2.13 lower to 0.48 higher)	-	33 (1 RCT)	⊕⊕○○ LOW ^{a,b}	A systematic review with a 'Summary of findings' table may make little or no difference to the time required to read and extract relevant information when compared to a systematic review alone.
Accessibility of the main findings of the review	In both studies overall, assigning participants to a group with a 'Summary of findings' table and systematic review made little or no difference to how likely they were to agree or strongly agree that the findings were accessible, when compared to the group with the systematic review alone (RR 1.73, M-H, 95% CI 0.92 to 3.23) and (RR 1.50, M-H, 95% CI 0.80 to 2.81).			105 (2 RCTs)	⊕⊕○○ LOW ^{a,b}	A 'Summary of findings' table and systematic review may make little or no difference to accessibility when compared to a systematic review alone.
User satisfaction/preferences/attitudes	After being shown both versions, 81% of participants in one study and 88% of participants in the other study agreed or strongly agreed that systematic reviews should include 'Summary of findings' tables. 75% and 77% (respectively) of participants found the explanations of the 'Summary of findings' tables helpful.			105 (2 observation studies)	⊕○○○ VERY LOW ^{a,b,c}	It is uncertain whether 'Summary of findings' tables (and explanations) should be included in systematic reviews.
Other outcomes	Other outcomes were not reported.			(0 RCTs)	-	
<p>*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI). CI: Confidence interval; RR: Risk ratio</p>						
<p>GRADE Working Group grades of evidence</p> <p>High certainty: We are very confident that the true effect lies close to that of the estimate of the effect</p> <p>Moderate certainty: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different</p> <p>Low certainty: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect</p> <p>Very low certainty: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect</p>						

Explanations

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- a. We downgraded the evidence by 1 level because of study limitations: both Rosenbaum 2010 RCT I and Rosenbaum 2010 RCT II had an unclear risk of bias due to a possible lack of allocation concealment and lack of blinding of participants.
- b. We downgraded the evidence by 1 level for imprecision because the total number of participants was less than the optimal information size.
- c. We downgraded the evidence by 2 levels because the data for this outcome was collected using an observational study design.

Comparison 5: the effects of 'Summary of findings' tables versus other formats of 'Summary of findings' tables on communicating key findings of systematic reviews of the effects of healthcare interventions

One trial addressed this comparison Carrasco-Labra 2016. See 'Summary of findings' table 2.

Primary outcomes

User understanding of key findings of systematic reviews measured by the ability to correctly answer factual questions about the review

Overall, Carrasco-Labra 2016 found that the new format probably improves user understanding compared to the current format (93.86% v 73.57% respectively, RR 1.28, 95% CI 1.16 to 1.41), GRADE: moderate (-1 level: imprecision- OIS using control event rate and 10% relative improvement n = 1110). Regression analysis revealed that only baseline years of experience had a significant influence on the estimate in just one of the questions.

Self-perceived understanding of key findings of systematic reviews as reported by the user

This outcome was not measured in this study.

Self-reported influence on decision-making

This outcome was not measured in this study.

Secondary outcomes

Time taken to read summary and extract relevant information

This outcome was not measured in this study.

Accessibility of the main findings of the review

Carrasco-Labra 2016 found that overall accessibility is probably improved by using the new format instead of the current format of 'Summary of findings' table (MD 4.0,

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95% CI 0.20 to 0.80), GRADE: moderate, (-1 level: imprecision- OIS using control event rate and 10% relative improvement n = 1110).

User satisfaction/preferences/attitudes

In Carrasco-Labra 2016 after reviewing both versions of the 'Summary of findings' tables, 69% of participants were more satisfied with features on the new version and 75% preferred the new version to the current version. GRADE: very low (- 3 levels: study design – outcome measured using observational design, imprecision- OIS using control event rate and 10% relative improvement n = 1110).

Table 2.02 A current version of the 'Summary of findings' table compared to a new version of the 'Summary of findings' table for communicating key findings of systematic reviews

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with a new version of the 'Summary of findings' table	Risk with a current version of the 'Summary of findings' table				
User understanding of key findings of systematic reviews measured by the ability to correctly answer factual questions about the review	Low 74 per 100	95 per 100 (86 to 100)	RR 1.28 (1.16 to 1.41)	290 (1 RCT)	⊕⊕⊕○ MODERAT E a,b	New version probably improves user understanding of key findings of systematic reviews.
Self-perceived understanding of key findings of systematic reviews as reported by the user - not reported	-	-	-	-	-	
Self-reported influence on decision-making - not measured	-	-	-	-	-	
Time taken to read summary and extract relevant information - not measured	-	see_comment	-	-	-	

Accessibility of the main findings of the review	The mean accessibility of the main findings of the review was 3.7	The mean accessibility of the main findings of the review in the intervention group was 4 The mean accessibility of the main findings in the intervention group was higher (0.2 higher to 0.6 higher)	-	290 (1 RCT)	⊕⊕⊕○ MODERATE E ^{a,b}	New version probably improves accessibility of main findings.
User satisfaction/preferences/attitudes	After being shown both versions, 31% of participants were more satisfied with features on the current version and 69% were more satisfied with the new version. When asked which 'Summary of findings' they preferred, 75% of participants chose the new version.			290 (1 observational study)	⊕○○○ VERY LOW a,b,c	It is uncertain whether the new version improves satisfaction or is more preferable.
Other outcomes	No other outcomes were reported.			(0 RCTs)	-	
<p>*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI). CI: Confidence interval; RR: Risk ratio</p>						
<p>GRADE Working Group grades of evidence</p> <p>High certainty: We are very confident that the true effect lies close to that of the estimate of the effect</p> <p>Moderate certainty: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different</p> <p>Low certainty: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect</p> <p>Very low certainty: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect</p>						

Explanations

- a. Blinding of participants not possible but unlikely to have influenced results.
- b. We downgraded the evidence by 1 level for imprecision. Optimal information size using control event rate and 10% relative improvement n=1110
- c. We downgraded the evidence by 2 levels because the data for this outcome was collected using an observational study design.

DISCUSSION

Summary of main results

Three studies met the eligibility criteria for this systematic review and had presented findings which could be included.

One study compared a current version of the 'Summary of findings' table to a new version of the 'Summary of findings' table for communicating key findings of systematic reviews (Carrasco-Labra 2016). Applying the GRADE criteria, we found that the new format probably improves user understanding and accessibility and it is uncertain whether the new version improves satisfaction and preferability.

Two studies compared systematic reviews with 'Summary of findings' tables to systematic reviews without 'Summary of findings' tables for communicating key findings of systematic reviews (Rosenbaum 2010b RCT I; Rosenbaum 2010b RCT II). After investigating the certainty of the evidence, we found that a 'Summary of findings' table and systematic review may slightly improve user understanding, may make little or no difference to self-perceived understanding, self-reported influence on decision-making, time taken to read and extract relevant information and accessibility. We found also that it is uncertain whether a 'Summary of findings' table and systematic review leads to greater satisfaction or is more preferable to users. Imprecision may be an issue for these studies due to the small number of participants per group. An incidental finding is that Rosenbaum 2010b RCT I reported that participants overestimated their correct understanding of information presented in the 'Summary of findings' tables.

Overall completeness and applicability of evidence

Our broad search was designed to include all potential user populations of 'Summary of findings' tables. However, the trials we found included healthcare, policy or research professionals only. The prior knowledge associated with working in this area may have an impact on the scores measuring user understanding when compared to those who don't (e.g., members of the public or patients). It is likely that there would be variation in values and preferences when comparing different

participant groups. We are aware of one ongoing study [ISRCTN14951221](#) in which the participants are members of the general public.

Our findings cannot be generalised to interactive 'Summary of findings' tables, which we included in our search. We were unable to locate any completed trials but found one ongoing study ([ISRCTN14951221](#)).

The formatting of the 'Summary of findings' tables in the studies included in our review vary. Methodological differences between studies, differences between our populations and interventions and comparators may have impacted our results. It is difficult to draw conclusions from the current evidence base and overall, the generalisability of the results of this review is limited.

Quality of the evidence

See [Table 2.01](#) and [Table 2.02](#).

Rosenbaum 2010b RCT I and Rosenbaum 2010b RCT II have risks of bias because it is unclear whether allocation was concealed and participants were not blinded. While blinding of outcome assessment was carried out, it is not likely to have influenced results. There was also a serious risk of imprecision because the optimal information size was not met in either study. Due to these factors, we downgraded the certainty of the outcomes in these studies by two levels using the GRADE criteria meaning that the certainty of the evidence was downgraded from high to low. For the outcome of user satisfaction/preferences/attitudes, we further downgraded the evidence because this was measured using an observational design.

The study by Carrasco-Labra 2016 had a low risk of bias in the study design across outcomes. Although participants were not blinded, it is unlikely that this influenced results. For the outcomes of user understanding and accessibility of the main findings of the review, we judged that the certainty of the evidence was moderate according to the GRADE criteria. We downgraded by one level for imprecision

because the OIS was not reached. Therefore this research provides a good indication of the likely effect for these outcomes. For user satisfaction/preferences/attitudes, we judged that the certainty of the evidence was very low. We downgraded for imprecision and because the outcome was measured using an observational study design. This research does not provide a reliable indication of the likely effect of the new version of the 'Summary of findings' table for this outcome.

Overall, our assessment of the evidence from Rosenbaum 2010b RCT I and Rosenbaum 2010b RCT II suggests that the inclusion of 'Summary of findings' tables in systematic reviews may make little or no difference to the communication of key findings when compared to systematic reviews alone or is uncertain. The new format of 'Summary of findings' table (presented in Carrasco-Labra 2016) probably improves user understanding and accessibility of the main findings when compared to the current table but it is uncertain whether it improves satisfaction or preferability for the new version when compared to the current version.

Potential biases in the review process

For this review, we conducted a comprehensive search and our methods were based on those specified in the MECIR standards (Higgins 2016). Two co-authors on this review (NS, HS) were authors on one of our included papers (Carrasco-Labra 2016) but neither were involved in the screening or data extraction processes. We were unable to assess publication bias using a funnel plot because of the heterogeneous nature of our included studies. We did not statistically analyse the data from our included studies so our methods using narrative synthesis are subjective (Deeks 2017). We provided a summary assessment of the risk of bias for outcomes across studies rather than for each outcome within a study across domains which may have given a more accurate assessment. We used the Cochrane Risk of Bias tool to assess the methodological quality of the included studies and the GRADE approach to assess the certainty of the evidence.

Agreements and disagreements with other studies or reviews

We found one relevant systematic review (Petkovic 2016), which aimed to assess the effectiveness of evidence summaries on policymakers' use of the evidence from systematic reviews. In that review, the authors found that 'Summary of findings' tables may lead to a small increase in user understanding. However, only one of the three studies they included in the part of their study that assessed 'Summary of findings' tables, is included in our review (Carrasco-Labra 2016). The other two studies did not match our inclusion criteria (Opiyo 2013; Vandvik 2012) (see the Characteristics of excluded studies table).

We did not find any other comparable reviews. We are aware of two ongoing studies that meet our inclusion criteria, and one study which is awaiting classification which aims to assess the effects of 'Summary of findings' tables combined with recommendations versus 'Summary of findings' table alone (Neumann 2018).

AUTHORS' CONCLUSIONS

Implications for systematic reviews and evaluations of healthcare

We support the recommendations of Cochrane and the GRADE working group that advise systematic reviewers to at least plan for and consider the inclusion of 'Summary of findings' tables in their reviews. The potential benefits of including 'Summary of findings' tables in systematic reviews are that they may improve the communication of key findings to users (e.g. by improving user understanding and accessibility of key findings, reducing time spent looking for findings, having a positive influence on the decision making processes and leading to increased satisfaction for users). There are few potential harms associated with their inclusion in systematic reviews, other than that they may cause the user to inaccurately gauge their own level of understanding. We advise systematic reviewers to keep up to date with emerging evidence focused on increasing user understanding and formatting values and preferences for particular subgroups.

Implications for methodological research

Due to the scope and certainty of evidence, we found that questions remain about the effectiveness of 'Summary of findings' tables. Many of our objectives could not be addressed in this review due to the lack of studies assessing the effects of 'Summary of findings' tables. High quality studies of larger and more diverse participant types are needed to understand how 'Summary of findings' tables may be tailored and optimised for different groups. For example, Galesic 2010 demonstrated that a high proportion of patients have low statistical numeracy and that it may be influenced by characteristics such as educational level. It is possible that different recommendations on the formatting, content and presentation of key findings should be made for subpopulations according to their level of understanding, values, preferences and other considerations. Literacy, health literacy and statistical numeracy are key competencies which will impact outcomes measuring the communication of key findings of systematic reviews to groups and individuals.

Methodological studies seeking to identify the optimal content and format for 'Summary of findings' tables need to be conducted. In a study by Brandt 2017, 113 out of 156 physician participants (72%, 95% CI 65 to 79) preferred a multi-layered format of guideline recommendations to the static format. The methodology research community could assess the effects of these interactive tables.

Regardless of the alternative to which the 'Summary of findings' table is being compared, similar information relating to data and key findings should feature in the intervention and comparison.

There is a lack of standardised and validated outcome measures and follow up was not conducted in any of our included studies to measure outcomes such as long-term understanding. The surveys used in our included studies varied in content and outcome measures.

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We recommend further high-quality, adequately-powered randomised trials, to assess the effects of static and interactive 'Summary of findings' tables for communicating key findings of systematic reviews to diverse participant groups. Potential comparators could include systematic reviews alone, alternative formats of 'Summary of findings' tables or other summarization products derived from systematic reviews.

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Declarations of interest

The authors declare no financial conflict of interest. HS, NS and RM are members of the GRADE working group, ST is involved in the DECIDE project and most are members of Cochrane. The authors who were authors of potentially eligible studies did not have any role in selection, risk of bias and certainty of evidence assessments of their own studies.

Differences between protocol and review

In our protocol we did not specify that we were only interested in including studies featuring 'Summary of findings' tables that are derivative products of a single systematic review. We have clarified this in the Types of studies section.

In the protocol, we stated that we would use section 6.4.1 of the Data Collection Checklist (EPOC 2010) and the Cochrane 'Risk of bias' criteria from the *Cochrane Handbook for Systematic Reviews of Interventions* (Higgins 2017) to assess risk of bias for randomised trials. In the review, we only used the latter.

In our protocol, we stated that we would present our 'Summary of findings' table using Chan 2011 for guidance. Since there has been more recent guidance published

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on 'Summary of findings' tables, we used Chapter 11 of the *Cochrane Handbook for Systematic Reviews of Interventions* (Schünemann 2017), the GRADE handbook, and other GRADE guidance (Guyatt 2013a; Guyatt 2013b; Santesso 2016) instead.

We updated the wording of the eight GRADE criteria to match the current version of GRADEproGDT.

The following documents were made available in 2017, as our review was being written, and we updated the appropriate sections accordingly:

- An update of EPOC documents were made available in 2017 (see EPOC 2017a and EPOC 2017b)
- Updates of chapters 8-12 of the *Cochrane Handbook for Systematic Reviews of Interventions*.

We used the definition of cross-over trials from Sibbald 1998 and the Economic and Social Research Council (ESRC) guidance (Popay 2006) to conduct our narrative synthesis. Neither of these resources were mentioned in our protocol.

Characteristics of studies

Table 2.03 Characteristics of included studies: Carrasco-Labra 2016

Methods	Randomised trial with 2 groups
Data	<p>Setting: online survey of participants based in Europe, North America, South America, and Asia</p> <p>Study dates: between September 2012 and February 2013</p> <p>Baseline demographics: The authors targeted:</p> <ol style="list-style-type: none"> (1) health professionals working in primary, secondary, or tertiary care, who reported at least 50% of total time dedicated to clinical practice (2) clinical practice guidelines developers who have participated in the development of at least one clinical practice guideline during the last two years (3) researchers who have dedicated more than 70% of their time to conduct research (e.g. methodologists, epidemiologists, statisticians, etc.) <p>Inclusion criteria:</p> <p>Systematic review users i.e. someone who has used the Cochrane Library or downloaded Cochrane or non-Cochrane systematic reviews at least twice a year to answer clinical practice questions, to inform the process of making recommendations for clinical practice guidelines, or to use reviews results for research purposes.</p> <p>Exclusion criteria: Not stated</p> <p>Participant stratification: After randomisation, participants were stratified into professional groups based on self-classification to receive either 'Summary of findings' table A or B. There were 124 in the clinician group, 42 in the guideline developer group and 124 in the researcher group</p> <p>Participants randomised:</p> <p>Group 1: 122 participants who received Table A first</p> <p>Group 2: 168 participants who received Table B first</p> <p>Total number of participants=290</p>
Comparisons	<p>Control:</p> <p>Participants in the control group (N=168) were first exposed to table B which had the following features:</p> <ol style="list-style-type: none"> 1. Inclusion of the N of participants and studies column 2. Quality of evidence presented with symbols and labelled as high, moderate, low, or very low. Reasons for downgrading presented in the footnotes 3. "Footnotes" label 4. Baseline risk and corresponding risk expressed as natural frequencies 5. No column presenting absolute risk reduction (risk difference) or mean difference 6. Comments column included 7. No "what happens" column (see below) 8. Description of the GRADE working group grades of evidence definitions below the table. <p>Next, the participants were exposed to Table A and asked questions regarding their preferences.</p> <p>Intervention:</p>

	<p>Participants in the intervention group (n=122) were first shown Table A which had the following features:</p> <ol style="list-style-type: none"> 1. Exclusion of the n of participants and studies column. Information presented in the outcomes column 2. Quality of evidence presented along with main reasons for downgrading in the same column (e.g., moderate due to imprecision) 3. "Explanations" label 4. Baseline risk and corresponding risk expressed as percentages 5. Inclusion of a column presenting absolute risk reduction (risk difference) or mean difference 6. Comments column deleted 7. "What happens" column included (to summarize both the treatment effect and the quality of the evidence on one short narrative statement) 8. No description of the GRADE working group grades of evidence definitions <p>After, the participants were exposed to Table B and asked questions regarding their preferences.</p>
Outcomes	<p>Outcomes relevant to this review:</p> <ol style="list-style-type: none"> 1. User understanding of key findings of systematic reviews measured by the ability to correctly answer factual questions about the review 2. Accessibility of the main findings of the review 3. User satisfaction/preferences/attitudes <p>Other outcomes None</p>
Notes	<p>Two authors of this randomised trial (HS & NS) are authors on this Cochrane Review. Neither author was involved in the selection, data extraction, or analysis for this study. HS was contacted for a clarification.</p> <p>Funding Source: This study was funded by the Cochrane Methods Innovation Fund and the GRADE Center at McMaster University, Canada.</p> <p>Declarations of Interest: <i>Quote from the paper:</i> "The authors of this trial declare no financial conflict of interest. However, most of them are members of the GRADE working group and the Cochrane Collaboration. H.J.S., G.G., and P.T. are convenors of Cochrane Methods Group. The views expressed in this article are those of the authors and not necessarily those of the Cochrane Collaboration or its registered entities, committees, or working groups."</p>

Table 2.04 Risk of bias table: Carrasco-Labra 2016

Item	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Yes	Quote (from the published study): "We then randomly allocated them to one of the two SoF tables in a 1:1 ratio via the "Survey Monkey" platform. The randomization scheme was automatically generated by the platform. When direct comparison between the new and current format was required, the order in

Item	Authors' judgement	Support for judgement
		which the tables were shown to participants was randomly determined.”
Allocation concealment (selection bias)	Yes	Quote (from the published study): “The allocation of participants to the tables was done by the “Survey Monkey” system in real time following an algorithm unknown to us, without a prespecified sequence. Thus, the investigators did not know in advance to which group the next participant was going to be allocated.”
Blinding of participants and personnel (performance bias) All outcomes	Yes	Quote (from the published study): “As a way to conceal the nature of the SoF tables to which participants were allocated, the tables were labelled as A or B, without any other information about their content or the study hypothesis.” Comment: Participants were not blinded as this would not have been possible. This is unlikely to have influenced the outcome. In this study, there were no personnel to blind as the intervention and comparison were provided by an automated, online platform.
Blinding of outcome assessment (detection bias) All outcomes	Yes	Quote (from the published study): "Once the data collection process was completed, the database was prepared for statistical analysis in a blinded fashion." Quote (from correspondence with the author) "In this trial, the outcomes were measured electronically in a survey that was circulated to participants. Their answers represented the outcomes. So, no outcome assessor was necessary. For example, the questions about understanding were exactly like in a multiple-choice test. Five options and only one correct answer. Then, the statistician who prepared the database for analysis was not aware of what group A and B meant."
Incomplete outcome data (attrition bias) All outcomes	Yes	Quote (from correspondence with the author): "The data collection process was online and no reason why participants abandoned the study after randomization was collected. They probably just closed the survey. . . . We had only 7 people lost to follow up. The survey was set in a mandatory fashion for all questions. This means that participant [sic] cannot skip questions in the in the way to the end of the survey. People who thought that this was too tedious to answer abandoned before randomization occurred." Comment: Minimal incomplete data (i.e. <5% for all outcomes).
Selective reporting (reporting bias)	Yes	Comment: All outcomes reported in protocol are reported in completed trial
Other bias	Yes	N/A

Table 2.05 Characteristics of included studies: Rosenbaum 2010b RCT I

Methods	Randomised trial with 3 groups.
Data	<p><i>Setting:</i> This trial took place during a plenary session at workshop for newcomers to evidence-based practice in Hankø, Norway.</p> <p><i>Study dates:</i> Trial carried out in June 2007 and data analysed later in 2007 (“autumn”).</p> <p><i>Baseline demographics:</i> the majority were healthcare professionals or researchers, beginners in evidence-based health care and English was not their first language.</p> <p><i>Sample size:</i> 72. The sample size calculation is not reported in full.</p> <p><i>Inclusion criteria:</i></p> <ul style="list-style-type: none"> • workshop participants and tutors • at the minimum, a basic understanding of systematic reviews <p><i>Exclusion criteria:</i></p> <ul style="list-style-type: none"> • members of the GRADE Working Group • those involved in the development of Cochrane SoF tables • people who had prepared or evaluated SoF tables previously <p><i>Participants randomised:</i> 90. The questionnaires were numbered sequentially the day before and were passed out to all of the participants at the meeting.</p> <p><i>Total number of participants=72</i></p> <p><i>Group 1:</i> 25 participants were randomly assigned to the control group (SR without a SoF table)</p> <p><i>Group 2:</i> 22 participants were randomly assigned to the first of two intervention groups (SR with a SoF table with limited formatting)</p> <p><i>Group 3:</i> 25 participants were randomly assigned to the second of two intervention groups (SR with a SoF table with full formatting)</p>
Comparisons	<p><i>Control:</i> Participants received a copy of the following systematic review without a ‘Summary of findings’ table: Clarke M, Hopewell S, Juszczak E, Eisinga A, Kjeldstrom M. Compression stockings for preventing deep vein thrombosis in airline passengers. Cochrane Database of Systematic Reviews 2006;(2):CD004002. (the review has since been updated).</p> <p><i>Intervention:</i> This study had two intervention groups. The difference between the limited and fully formatted tables was minimal – involving mostly use of colour to differentiate items from each other or not (colour in the background of the table cells, colour in typography). The publishing system imposed a lot of restrictions regarding details of the typography and design, and the authors were trying to understand if any of this was going to play a critical role in use.</p> <ul style="list-style-type: none"> · Participants received a copy of the same systematic review with a SoF table with limited formatting. · Participants received a copy of the same systematic review with the SoF table with full formatting. <p>Participants first answered the questionnaire using the version of the review they had received. Then, all participants were shown both formatting versions of the SoF tables and were instructed to answer a final set of questions measuring their preferences and attitudes about the inclusion of SoF tables in reviews.</p>
Outcomes	<i>Outcomes relevant to this review:</i>

	<ol style="list-style-type: none"> 1. Self-perceived understanding of key findings of systematic reviews as reported by the user 2. Self-reported influence on decision-making 3. Accessibility of the main findings of the review 4. User satisfaction/preferences/attitudes
Notes	<p>This is the first of two randomised trials reported in one article.</p> <p>Funding Source: The authors did not have any external funding for the trial.</p> <p>Declarations of Interest: The authors confirmed that competing interests do not exist.</p>

Table 2.06 Risk of bias table: Rosenbaum 2010b RCT I

Item	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Yes	Quote (from the published study): "We used block randomization with 25 blocks of three that was generated on http://www.randomization.com ."
Allocation concealment (selection bias)	Unclear	Quote (from correspondence with the author): "These [sic] trial happened over 10 years ago and I do not recall where and when we moved from generating the sequence to filling the envelopes (which were opaque)." Comment: Paper does not state how/whether the allocation sequence was concealed and authors unable to remember methods used to protect the allocation sequence before and until assignment.
Blinding of participants and personnel (performance bias) All outcomes	No	Quote (from correspondence with the author) regarding participants: "No - they had to see the Sof table in order to give feedback on it. . ." Comment: Participants were not blinded as this would not have been possible.
Blinding of outcome assessment (detection bias) All outcomes	Yes	Quote (from correspondence with the author): "The outcomes were answers to questions on the questionnaires with fixed response options, which required no interpretation or judgement by us when we entered the data in a spreadsheet. We were not blinded when we did this." Comment: Their assessment was objective rather than subjective. Therefore, the outcome was not likely to be influenced by lack of blinding.
Incomplete outcome data (attrition bias) All outcomes	Yes	Comment: All outcome data reported or provided by the author.
Selective reporting (reporting bias)	Yes	Comment: All outcomes mentioned in protocol reported in findings. However, the authors realised that in this trial they had not accurately measured the comprehension

Item	Authors' judgement	Support for judgement
		outcome, so the questionnaire was changed accordingly for the trial described below.
Other bias	Yes	N/A

Table 2.07 Characteristics of included studies: Rosenbaum 2010b RCT II

Methods	Randomised trial with 2 groups
Data	<p><i>Setting:</i> This trial took place at a meeting for members of Continental European Cochrane entities in Oslo, Norway.</p> <p><i>Study dates:</i> Trial carried out in June 2007 and data analysed later that year.</p> <p><i>Baseline demographics:</i> Staff members from Cochrane entities, including review group coordinators, trial search coordinators, and Centre staff, of which six were health care professionals and 13 were researchers. The majority did not have English as their first language.</p> <p><i>Sample size:</i> 33. According to their calculations, the required sample size to detect a 50% relative improvement was 116 participants (58 in each group).</p> <p><i>Inclusion criteria:</i></p> <ul style="list-style-type: none"> · staff members from Cochrane entities attending the meeting · a minimum of a basic understanding of systematic reviews <p><i>Exclusion criteria:</i> Members of the GRADE Working Group, others who had been involved in the development of Cochrane SoF tables, and people who had participated in preparing or evaluating SoF tables previously.</p> <p><i>Participants randomised:</i></p> <p><i>Group 1:</i> 18 participants were randomly assigned to the control group (SR without an SoF table)</p> <p><i>Group 2:</i> 15 participants were randomly assigned to the intervention group (SR + SoF table)</p> <p><i>Total number of participants = 33</i></p>
Comparisons	<p><i>Control:</i> Participants received a copy of the following systematic review without a SoF table: Clarke M, Hopewell S, Juszczak E, Eisinga A, Kjeldstrom M. Compression stockings for preventing deep vein thrombosis in airline passengers. Cochrane Database of Systematic Reviews 2006;(2):CD004002 (the review has since been updated).</p> <p><i>Intervention:</i></p> <p>Participants received the review with a revised version of the SoF tables from the first trial</p> <p>Participants first answered the questionnaire using the intervention/control they had received. Then, all participants were shown the other one that they had not been assigned to and were instructed to answer a final set of questions measuring their preferences and attitudes about the inclusion of SoF tables in reviews.</p>
Outcomes	<p><i>Outcomes relevant to this review:</i></p> <ol style="list-style-type: none"> 1. User understanding of key findings of systematic reviews measured by the ability to correctly answer factual questions about the review 2. Self-perceived understanding of key findings of systematic reviews as reported by the user 3. Self-reported influence on decision-making

	4. Time taken to read summary and extract relevant information 5. Accessibility of the main findings of the review 6. User satisfaction/preferences/attitudes.
Notes	This is the second of two randomised trials reported in one article. Funding source: The authors did not have any external funding for the trial. Declarations of interest: The authors confirmed that competing interests do not exist.

Table 2.08 Risk of bias table: Rosenbaum 2010b RCT II

Item	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Yes	Quote (from the published study): "We used block randomization with 25 blocks of three that was generated on http://www.randomization.com
Allocation concealment (selection bias)	Unclear	Quote (from correspondence with the author): When referring to this trial the author stated that they were ". . . not present at the other trial but assume that it was conducted in a similar manner" (as the earlier trial). Comment: Paper does not state how/whether the allocation sequence was concealed and author unable to confirm methods used to protect the allocation sequence before and until assignment.
Blinding of participants and personnel (performance bias) All outcomes	No	Quote (from correspondence with the author) regarding participants: "No - they had to see the Sof table in order to give feedback on it. . ." Comment: Participants were not blinded as this would not have been possible.
Blinding of outcome assessment (detection bias) All outcomes	Yes	Quote (from correspondence with the author): "The outcomes were answers to questions on the questionnaires with fixed response options, which required no interpretation or judgement by us when we entered the data in a spreadsheet. We were not blinded when we did this." Comment: This is unlikely to have influenced the outcome.
Incomplete outcome data (attrition bias) All outcomes	Yes	Comment: All outcome data reported or provided by the author.
Selective reporting (reporting bias)	Yes	Quote (from the published paper): ". . . we redesigned the protocol for the second RCT to measure correct comprehension." Comment: The authors realised that in the first RCT they had not accurately measured the comprehension outcome, so the questionnaire was changed accordingly for this trial. We were unable to check the protocol for this paper but all of the outcomes mentioned in the methods section of the published paper were reported.

Item	Authors' judgement	Support for judgement
Other bias	Yes	Comment: Outcomes in protocol reported in published trial.

Table 2.09 Characteristics of excluded studies

Study	Reason for exclusion
<i>Brandt 2017</i>	The intervention did not meet the inclusion criteria for this systematic review.
<i>Gartlehner 2017</i>	The study design did not meet the inclusion criteria for this systematic review.
Mustafa 2015	The study design did not meet the inclusion criteria for this systematic review.
Opiyo 2013	The intervention did not meet the inclusion criteria for this systematic review.
Santesso 2015	The intervention did not meet the inclusion criteria for this systematic review.
Vandvik 2012	The intervention did not meet the inclusion criteria for this systematic review.

Table 2.10 Characteristics of studies awaiting classification: Neumann 2018

Methods	Survey and randomised trial "hybrid" with 4 groups
Data	<p>Setting: This trial took place at grand rounds or clinical meetings at participating institutions in 10 countries: Argentina, Canada, Chile, Costa Rica, Lebanon, Norway, Saudi Arabia, Spain, Switzerland and United States</p> <p>Study dates: Not stated</p> <p>Baseline demographics: Internists or family doctors</p> <p>Sample size: According to their calculations, to detect a difference of 10% in preferences with a power of 80% and alpha level of 0.05, a sample of 388 participants was needed.</p> <p>Inclusion criteria: Practicing clinicians working primarily in general internal medicine or family medicine who attended educational meetings at participating institutions.</p> <p>Exclusion criteria: Not stated</p> <p>Participants randomised:</p> <p>Group 1: 123 participants were randomly assigned to the strong recommendations scenarios and to receive an evidence summary and recommendations on oseltamivir for avian influenza and evidence summary alone on aspirin for asymptomatic thrombophilia</p> <p>Group 2: 114 participants were randomly assigned to the strong recommendations scenarios and to receive an evidence summary and recommendations on aspirin for asymptomatic thrombophilia and evidence summary alone on oseltamivir for avian influenza</p>

	<p>Group 3: 131 participants were randomly assigned to the weak recommendations scenarios and to receive an evidence summary and recommendations on potassium intake for cardiovascular disease and evidence summary alone on compression stockings for long distance travellers</p> <p>Group 4: 128 participants were randomly assigned to the weak recommendations scenarios and to receive an evidence summary and recommendations on compression stockings for long distance travellers and evidence summary alone on potassium intake for cardiovascular disease</p> <p>Total number of participants = 496</p>
Comparisons	<p>Control: evidence summaries alone (2 subgroups were randomised to receive weak or strong recommendations scenarios contained in a narrative summary within the 'Summary of findings' table)</p> <p>Intervention: evidence summaries plus a recommendation (2 subgroups were randomised to receive a weak or strong recommendation scenarios separate to the Summary of findings' table)</p>
Outcomes	<p>Outcomes relevant to this review:</p> <p>User understanding of key findings of systematic reviews measured by the ability to correctly answer factual questions about the review</p> <p>User satisfaction/preferences/attitudes</p> <p>Other outcomes:</p> <p>Interpretation of benefits and harms</p> <p>Intended course of action</p>
Notes	<p>Funding source: the European Union's Seventh Framework Programme for research, technological development, and dissemination under grant agreement No 258583 (www.decide-collaboration.eu)</p> <p>Declarations of interest: Many of the authors are members of the GRADE working group and have worked developing clinical practice guidelines.</p>

Table 2.11 Characteristics of ongoing studies: ISRCTN14951221

Study name	Does an interactive 'Summary of findings' table improve users' understanding of and satisfaction with information about the benefits and harms of treatments?
Methods	Internet-based, parallel, randomised trial with 3 groups
Data	<p>Setting: online survey of participants based in Scotland</p> <p>Inclusion criteria:</p> <p>Members of the Scottish general public who:</p> <ul style="list-style-type: none"> • use the Internet • are over 18 years of age • have an Internet connection and a laptop or desktop computer <p>Exclusion criteria:</p> <p>Members of the Scottish general public who:</p> <ul style="list-style-type: none"> • familiar with GRADE SoF tables (assessed by asking participants) • have previously participated in the trial • have research training or experience equivalent to an MSc or PhD
Comparisons	Control: Evidence based patient information without an SoF table

	Intervention: Static SoF table (6 possible presentations) and iSoF table (6 possible presentations)
Outcomes	<p>Outcomes relevant to this review:</p> <p>Primary</p> <ul style="list-style-type: none"> · User understanding of the benefits and harms, and of the certainty of the evidence · Satisfaction with the adequacy of the information about the benefits and harms · Presentation preferences · Participants preferences for the initial presentation <p>Other outcomes:</p> <p>Secondary</p> <ul style="list-style-type: none"> · Reasons for the participants' preferences for an iSoF versus patient information with no SoF, a static SoF, a combination iSoF plus patient information, and a combination of static SoF plus patient information · Reasons for the participants' preferences for the initial iSoF presentation · Use of interactive functions in the iSoF · Understanding of the balance of the benefits and harms · Participants' hypothetical decision
Starting date	November 2014
Contact information	<p>Professor Shaun Treweek Health Services Research Unit University of Aberdeen 3rd Floor Health Sciences Building Foresterhill Aberdeen AB25 2ZD United Kingdom +44 775 614 4998 DECIDE_iSoF@icloud.com</p>
Notes	N/A

Table 2.12 Characteristics of ongoing studies: NCT02732028

Study name	Two Alternatives Versus Usual GRADE-SoF Tables to Improve Understanding
Methods	<p>Randomized control non-inferiority trial with three arms.</p> <p>Population: Systematic review users e.g. researchers, clinical practice guideline developers, policy-makers, end-users, or knowledge transfer professionals.</p>
Data	Data will be collected electronically at baseline and after randomisation.
Comparisons	<p>Three different SoF tables:</p> <ul style="list-style-type: none"> • new current GRADE-SoF table • new alternative GRADE-SoF table • EPC-SoF table
Outcomes	<p>Outcomes relevant to this review:</p> <p>Primary:</p> <p>Understanding of key findings</p> <p>Secondary</p>

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	<ul style="list-style-type: none"> · Accessibility of information · Satisfaction · Preference Other outcomes: none
Starting date	2016
Contact information	Contact 1: Holger Schünemann, MD, MSc, PhD 9055259140 ext 24931 schuneh@mcmaster.ca Contact 2: Rebecca L Morgan, MPH 9055259140 ext 24931 morganrl@mcmaster.ca
Notes	This refers to the same study as Yepes-Nuñez 2018 (see below)

Table 2.13 Characteristics of ongoing studies: Yepes-Nuñez 2018

Study name	Two alternatives versus the standard Grading of Recommendations Assessment, Development, and Evaluation summary of finding (SoF) tables to improve understanding in the presentation of systematic review results: a three-arm, randomised, controlled, non-inferiority trial
Methods	Randomized control non-inferiority trial with three arms. Population: Systematic review users e.g. researchers, clinical practice guideline developers, policy-makers, end-users, or knowledge transfer professionals.
Data	Data will be collected electronically at baseline and after randomisation.
Comparisons	Three different SoF tables: <ul style="list-style-type: none"> · current GRADE-SoF table (comparator) · alternative GRADE-SoF table (intervention) · Evidence based practice centre (EPC) -SoF table (intervention)
Outcomes	Outcomes relevant to this review: Primary: Understanding of key findings Secondary <ul style="list-style-type: none"> · Accessibility of information · Satisfaction · Preference Other outcomes: none
Starting date	2016
Contact information	Correspondence to: Schünemann; holger.schunemann@mcmaster.ca
Notes	This is the same study as NCT02732028.

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Chapter 2: Paper 1

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CHAPTER 3: PAPER 2

Implementing an initiative to promote evidence-informed practice: part 1 - a description of the Evidence Rounds program

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ABSTRACT

Background

Evidence-informed practice is fundamental to the delivery of high quality health care. Delays and gaps in the translation of research into practice can impact negatively on patient care. Previous studies have reported that problems facing health care professionals such as information overload, lack of time and other individual, organisational and system-level contextual factors are barriers to the uptake of evidence. Health services research in this area has been restricted largely to the evaluation of program outcomes. This paper aims to describe our evidence-informed, theory-based implementation strategy for health care professionals working in midwifery, neonatology or obstetrics aimed at disseminating evidence and enhancing evidence-informed clinical care.

Methods

Using a logic model, we developed an initiative called Evidence Rounds for health care professionals working in an urban hospital in Ireland to identify and disseminate the best available research evidence, assess its quality and where applicable, promote its use in clinical practice. Evidence Rounds consisted of 3 core components: (1) group sessions examining evidence on topics prioritised by staff (2) a dedicated website and (3) facilitation, enablement and support from a knowledge translation professional. We evaluated user engagement by monitoring attendance figures and website analytics. We followed up with staff at 3, 16 and 21-month intervals after the last education session to find out whether changes in practice had been made in light of the evidence. We use Lavis's organising framework for knowledge transfer and the Template for Intervention Description and Replication (TIDieR) checklist to describe the program and document the implementation process.

Results

Six Evidence Rounds group sessions presented by 18 health care professionals took place over a nine month period with 148 attendances of which 85 were unique (individuals who attended at least one session). During the period spanning from one

month before, during and one month after the running of the group sessions, 188 unique visitors, 331 visits and 862 page views were recorded on our website.

Conclusions

Audit and feedback processes can provide quantitative data to track practice outcomes. Achieving sustainable educational programs can be challenging without dedicated resources such as staffing and funding for staff hours for a dedicated person such as a KT specialist. This is the first of two companion papers that discusses the implementation of the Evidence Rounds initiative. Our second paper, presents the findings of focus groups and interviews conducted with health care professionals.

BACKGROUND

Background to study

Evidence-informed practice is central to the delivery of quality care and is associated with improvements in patient outcomes. Emparanza and colleagues (2015) demonstrated that mortality and duration of hospital stay figures were reduced among patients who were treated in an evidence-based practice unit when compared to either a standard practice unit or previous practice by the same health care professionals (HCPs). Similarly, a Swedish study using data from patients with ST-elevation myocardial infarction (STEMI), found an association between increased evidence-based practices and decreased 30-day and 1-year mortality figures, which were shown to be maintained using long-term survival analyses (Jernberg 2011). Nevertheless, a well-reported gap exists between clinical practice and much of the evidence available to HCPs (Grimshaw 2002). When evidence is not translated into practice or when there is a delay in the process, people may be exposed to unnecessary risks or suboptimal care.

There are multiple barriers to evidence uptake and evidence-informed practice. One barrier is information overload (Klerings 2015; Greenhalgh 2014; Bastian 2010) as the volume of available literature can be overwhelming to HCPs wishing to access the most relevant and up to date research (Grandage 2002). We have long been in an era of information overload with, for example, more than 1 million publications

related to biomedical research captured within the PubMed database each year (Landhuis 2016). Many health care workers have limited time to devote to reading research evidence (Grimshaw 2002). Conversely, for some healthcare topics, there can be a lack of evidence or indeed, high quality evidence (Waddell 2002). There is a need for evidence-informed, theory-based knowledge translation initiatives for HCPs to promote evidence-informed practice and the implementation of evidence where appropriate. In this paper, we introduce Evidence Rounds, an initiative featuring three core components; 1) group sessions presenting evidence and providing a discussion forum on topics or clinical questions chosen by staff, 2) a dedicated website for promotion, dissemination and communication and, 3) facilitation, enablement and support services offered and provided by a knowledge translation (KT) professional. According to the National Implementation Research Network (NIRN) based in the United States, an enabling context is an essential component of evidence-based programs for increasing their usefulness (NIRN 2018). Evidence Rounds was based loosely on an intervention conceived by Jacqui Le May, former Head of Knowledge Services at University Hospitals Coventry and Warwickshire, NHS Trust in the United Kingdom (UK). There, members of the Clinical Evidence Based Information Service (CEBIS) team run Evidence in Practice Groups to examine evidence in various departments within the hospital. Topics and questions are linked to a specific patient cases, series of patient cases or other general topics.

As well as incorporating the best available evidence into our group sessions, we used evidence from key findings of systematic reviews and other research to inform the design and implementation of the initiative. According to Everett Rogers' theory (1983), which we also used to inform the design of our implementation strategy, diffusion of innovations consists of four key elements; the innovation itself, communication channels (hereby referred to as modes of delivery), time, and the social system. He identified five stakeholder groups that adopt innovations over time; innovators, early adopters, early majority, late majority and laggards (Rogers 2003).

Summary of existing literature

Grimshaw and colleagues (Grimshaw 2012), highlight that there is a considerable body of evidence relating to KT strategies yet it remains incomplete. A much-debated question is whether combined or single component strategies are more effective (Hulscher 2013). Intuitively, a multicomponent strategy might be more effective when seeking to engage as many clinicians as possible, some of whom may have preferences or circumstances that makes a particular component work for them. However, Squires *et al* (2014) found that interventions with multiple components were no more effective than single component interventions. They also concluded that the effectiveness of multifaceted interventions did not increase incrementally as the number of components increased. It might be that multiple components used in some studies addressed the same rather than diverse issues or barriers and if so, then this might explain why they were not judged to be more effective. In a systematic review by McCormack *et al* (2013), multi-component dissemination strategies focusing on reach, motivation and ability strategies were more likely to affect clinicians' behaviours than single-component strategies. Another systematic review demonstrated that multifaceted interventions focused on educational meetings to increase implementation of physiotherapy clinical guidelines may improve some outcomes relating to practice but failed to have a positive impact on patient health outcomes or reducing costs (van der Wees 2008). A Cochrane systematic review reported that interprofessional education may improve patient outcomes and improve adherence to clinical guidelines although the evidence was judged to be low quality (Reeves 2013). Wallace and colleagues found that targeted messaging, summaries of research evidence and educational visits may improve the uptake of key research findings (Wallace 2014). A recent systematic review found that barriers and facilitators to implementation processes identified by HCPs were experienced at system, staff and intervention levels (Geerligs 2018). The authors recommend taking these three domains into account when designing implementation strategies. Educational meetings on their own or in combination with other interventions may improve clinical practice or patient outcomes but may not change complex behaviours (Forsetlund 2009). The inclusion of local opinion

leaders in an intervention may make it more likely to align HCP behaviours with the desired practice (Flodgren 2011). In a before-and-after study, the provision of food was identified by HCPs as a motivating factor to attend grand rounds (Segovis 2007). Informed by this evidence, Evidence Rounds featured a multi-faceted strategy based around educational meetings and focused on increasing the reach of the evidence and the motivation and ability to use and apply the evidence. We also took an interprofessional approach, by involving multiple professions (midwifery, neonatology and obstetrics) and working with opinion leaders. We designed the initiative to address individual and organizational level factors and adapted it when necessary throughout the implementation process. We arranged for a local catering service to provide food at each session.

Why the study is necessary/contribution to field

In this paper, our description of the implementation of Evidence Rounds adds to the literature on applied health services research. There is a general paucity in the existing literature of studies that provide insight into how contextual factors have influenced dissemination and implementation efforts. Hamilton and Mittman (2018) and Proctor (2013) have highlighted the need for further research to describe the implementation of these types of initiatives in sufficient detail. Implementation outcomes and the use of evidence can be driven to a large extent by contextual factors and their methods of delivery (Hamilton 2018; Rycroft-Malone 2008; Rycroft-Malone 2013). Contextual influences on implementation can be both barriers and enablers to different people at different times, under varying circumstances. The goal of Evidence Rounds was to bridge the gap between evidence and practice through an educational initiative aimed at HCPs. The objectives were to disseminate the best available evidence to HCPs on topics of their choosing during group sessions; to promote evidence-informed practice through the provision of an in-person group platform for staff to discuss the implications of the evidence, the barriers and facilitators to its implementation and, to enhance evidence-informed practice by identifying and assigning resulting actions where appropriate.

The aims of this paper are to describe the process of planning, designing and implementing this multi-component initiative, to report data on quantitative performance indicators monitoring engagement during the implementation process and to provide follow up information regarding the implementation or lack of implementation of the evidence. The second paper in this two-part series (see Chapter 4) reports the findings of focus groups and interviews about Evidence Rounds with HCPs who attended or presented at the group sessions.

METHODS

In Figure 1, we present a logic model developed iteratively to demonstrate the underlying logic behind the implementation strategy for Evidence Rounds. We designed it with the understanding that implementation processes and health systems are complex. May and colleagues (2016) advised that implementation processes be understood as “non-linear, emergent and dynamic events within systems.” The model focuses on the components of the initiative, our planned activities and what we hoped to achieve through the initiative. We informed the pre-implementation and the implementation phases by adapting aspects of the CEBIS Evidence in Practice Groups, the Diffusion of Innovations theory (Rogers 2003), the framework for knowledge transfer (Lavis 2003) and the Knowledge Translation Planning Template – see [Appendix 3.6](#) (Barwick 2000, 2013).

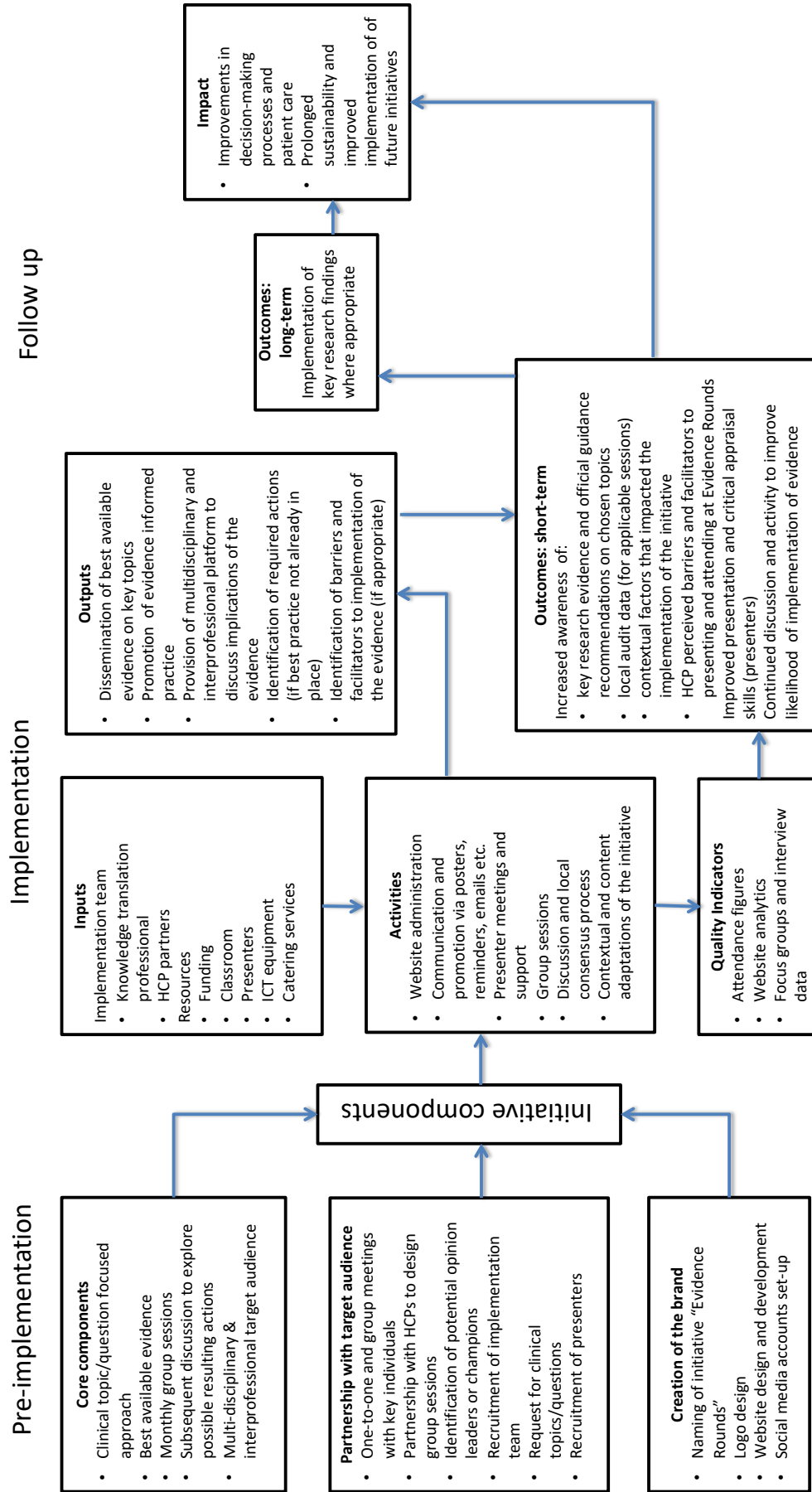


Figure 3.1 Process-oriented logic model of Evidence Rounds

The organising framework for knowledge transfer strategies conceived by Lavis *et al* (2003) was used to develop the implementation strategy and is featured in the results section. This framework asks five key questions: 1. What should be transferred to decision makers? 2. To whom should research knowledge be transferred? 3. By whom should research knowledge be transferred? 4. How should research knowledge be transferred? 5. With what effect should research knowledge be transferred?

We employed the Template for Intervention Description and Replication (TIDieR) checklist, attached in [Appendix 3.1](#), to complement the reporting of the initiative (Hoffman 2014). This reporting guideline has been recommended for use to report intervention implementation (Wilson 2017).

We collected and report a number of quantitative measures:

- website analytics captured by our online hosting platform. We report the following figures spanning from the period one month before the first group session, during the group sessions and one month after the last group session:
 - 1 *unique visitors* defined as the number of visitors visiting for the first time;
 - 2 *visits* defined as the number of browsing sessions and can involve multiple page views;
 - 3 *page views* defined as the number of times a webpage from our website was fully loaded by a browser
- the total number of HCPs and other attendees who attended each Evidence Round session (other attendees included academic partners and students from health-related higher education courses on placement at the hospital site)
- the total number of HCPs who presented at an Evidence Rounds session.

We contacted the 5 HCP members of the implementation team three, 16 and 21 months after the initiative ended to find out whether Evidence Rounds had led to the implementation of research findings.

RESULTS

Six Evidence Rounds group sessions were run over a 9-month period (initially planned to last 6 months). There was a total of 148 attendees of which 85 were unique (individuals who signed the attendance sheet at a minimum of one session). See Figure 2 for a breakdown of attendance numbers by session. Attendance numbers fluctuated according to factors such as the chosen topic (some of which were common to midwifery, neonatology and obstetrics, and some of which were primarily neonatology-focused), level of interest in the topic subject matter and clinical staffing levels.

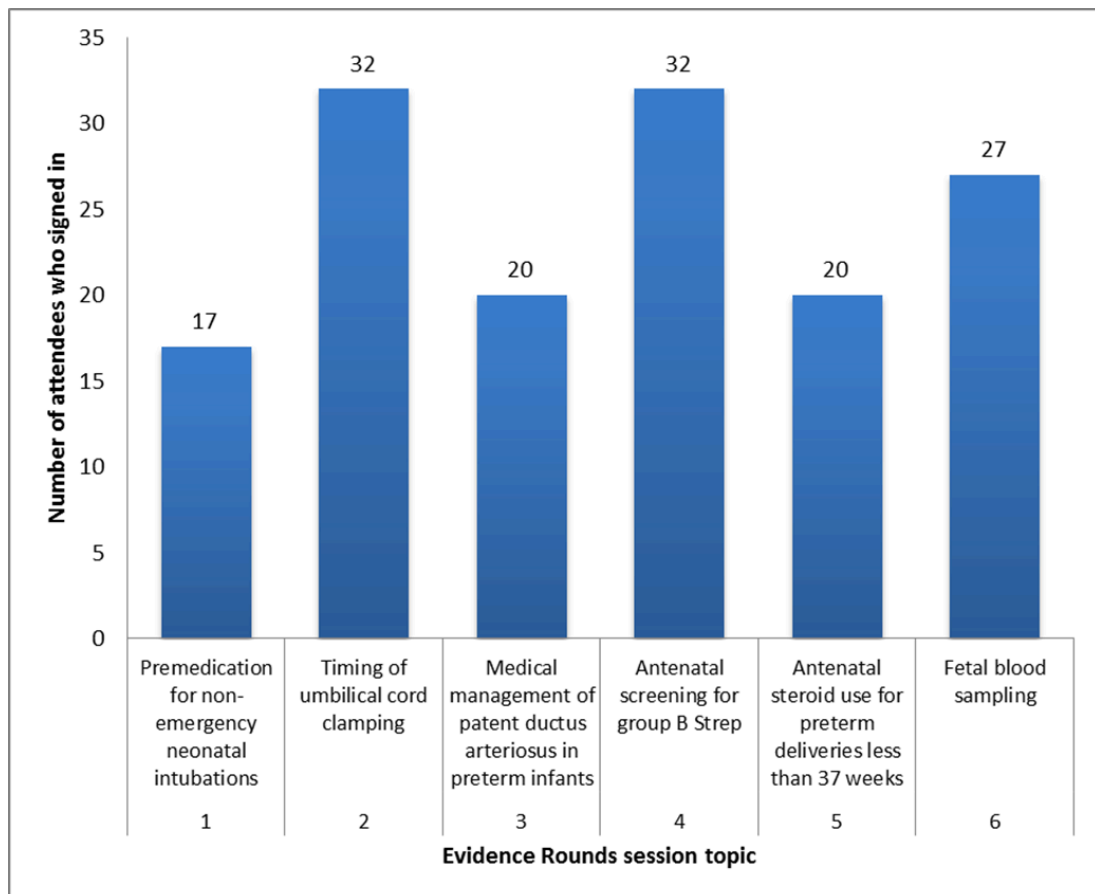


Figure 3.2: Staff attendance figures at group sessions

Seventeen HCPs who work at the hospital presented during the period of implementation. One external HCP (DD, who is an author of this paper), was asked to present at a session because he authored two relevant papers that were selected for inclusion in the presentation (session number 6).

Between 01/06/2016 and 29/04/2017, 188 unique visitors, 331 visits and 862 page views were recorded on the website. See Figures 3.3, 3.4 and 3.5 for a breakdown of these figures.

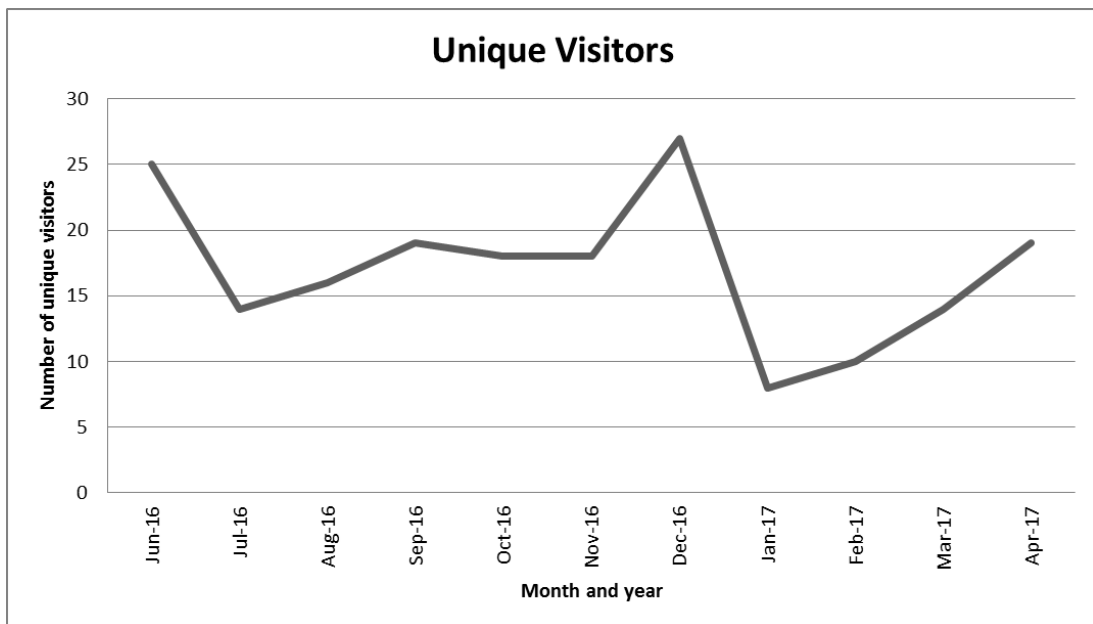


Figure 3.3 Unique visitors to the website by month and year

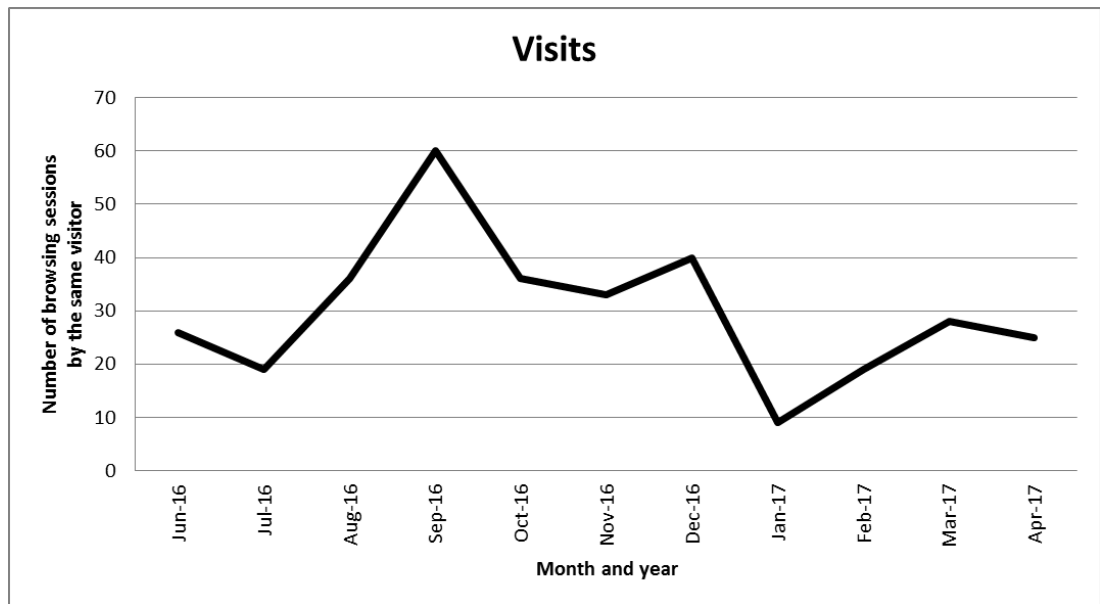


Figure 3.4 Number of browsing sessions by the same visitor

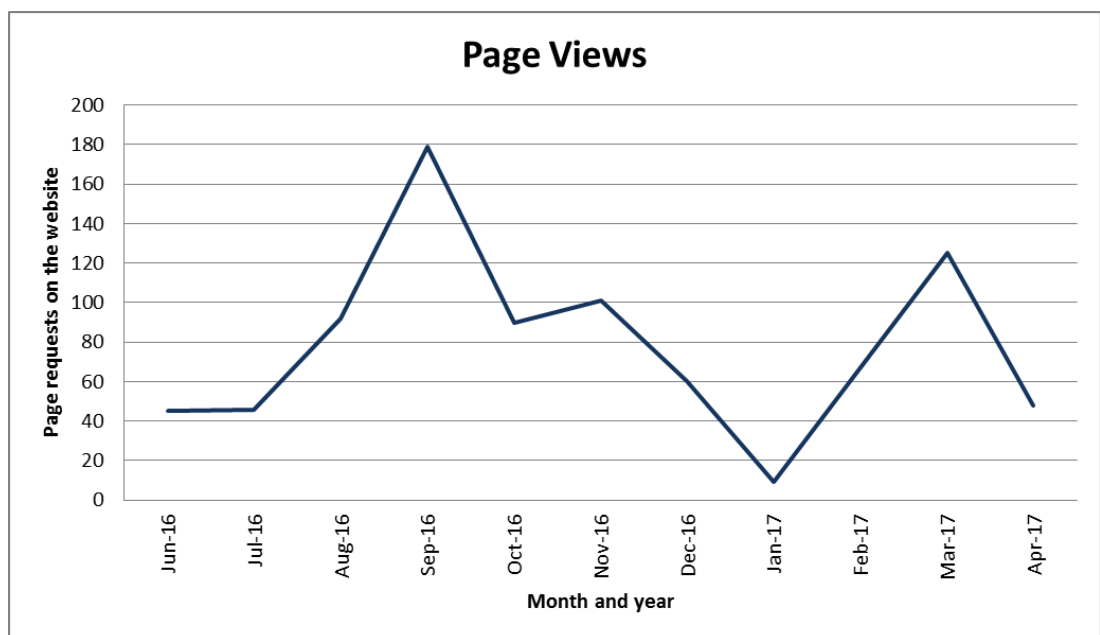


Figure 3.5 Page views by month and year

1.) *What should be transferred to decision makers?* To improve the likelihood of evidence uptake, HCPs were invited to select topics they perceived as having a need to further explore the gap between evidence and practice. A member of staff who later confirmed with colleagues their agreement on her chosen topic suggested the

topic for the first group session at a planning meeting. For subsequent sessions, a collective decision was made at group sessions about the topic to be covered in the next session. Sometimes, several suggestions were considered before a decision was made. At the request of one HCP, a topic suggestion sheet was passed around during sessions to accommodate staff who were reluctant to propose topics in front of their colleagues. HCPs were asked to submit suggestions based on gaps they perceived in their knowledge of the evidence or where there was a perceived gap between the evidence and their own practice. Topics were not limited to those known to have clear and conclusive evidence and suggestions covering controversial treatments, those that had conflicting evidence findings, or a lack of evidence, were encouraged. Our aim was to transfer the best available, most up to date, relevant and applicable evidence. At the start of each session, national and international official guidance was explored to increase awareness of current recommendations. All of the selected topics and clinical questions involved healthcare interventions so we were particularly interested in accessing and presenting randomised trials and systematic reviews of trials. However, for all topics, we also included non-randomised or observational studies so that qualitative aspects of topics could be taken into consideration. For some sessions, HCPs requested and found it valuable to read reports on what other units were doing and compare and contrast their own practice. The final selected topics are presented in Figure 2.

2.) *To whom should research knowledge be transferred?* Our target audience consisted of HCPs working in the neonatal and obstetric departments in the women and children's division of an urban hospital in Ireland. We took a multi-disciplinary and interprofessional approach to maximise the potential for the dissemination and implementation of evidence and to promote collaboration with the ultimate goal of implementation of evidence where appropriate. Sessions took place in a classroom located adjacent to wards for the convenience of staff who could be beeped or called away at any moment. After the second session, we discussed the possibility of changing to a larger venue but decided against this as the location worked well and the capacity it held was viewed as ideal for promoting discussion. We also invited

staff members outside of key departments when deemed appropriate to the topic. For example, laboratory staff were invited to attend the fourth session: antenatal screening for group B streptococcus. When these staff were identified, invitations were extended through the presenting HCPs. The implementation team also invited students who were on placement in the departments during the time of the sessions.

3.) *By whom should research knowledge be transferred?* We took a team approach to the transfer of knowledge. Three HCPs presented at each session with representatives from both medical and nursing and midwifery staff in each session. Staff from the neonatal and obstetric departments presented when the topic covered both disciplines. To recruit HCPs to present, staff were asked to volunteer during group sessions or previous presenters contacted individuals they perceived as suitable candidates. The KT professional who is an author on this paper (AC) introduced each session, discussed the literature search process, the breadth of the literature on the chosen topic, and directed discussion to decide on the next topic.

4) *How should research knowledge be transferred?* The KT strategy involved both active and passive methods of promotion, communication and dissemination. To increase the reach of the evidence: We identified and arranged meetings with key staff at the hospital - to build an implementation team and identify potential champions or opinion leaders that could help us communicate with HCPs and disseminate evidence. Our group sessions targeted multiple disciplines and professions to increase the impact. We employed a variety of communication and dissemination modes of delivery (See Figure 6) e.g. face-to-face meetings, telephone calls, emails, an open access website, based on the assumption that we were likely to encounter stakeholder groups similar to those identified by Rogers (2003) who may adopt the initiative at different points in the process and for a variety of reasons. To increase motivation to use and apply the evidence: HCPs took ownership by choosing topics that had the potential to improve their practice and that were meaningful and timely for them. We focused on the applicability of the evidence to

the local context. When requested, we presented information on how other national and international units were providing healthcare services relating to the topic for benchmarking purposes. In 3 of the 6 sessions, retrospective audit data were presented to capture data relating to recent practice and potentially act as a driving force to change future practice. To increase the ability to use and apply the evidence: We addressed the issue of information overload by designing and performing pragmatic yet comprehensive search strategies, sifting through the frequently large volume of search results and discarding obviously irrelevant records. Searches were ran on appropriate databases and websites including; the Cochrane Library databases, Medline or PubMed, CINAHL, Embase, Google (to identify guidelines and grey literature), relevant professional bodies and organisations' websites, healthcare organisations' websites, DynaMed, Trip Database Pro and the Geneva Foundation for Medical Education and Research (GFMER). Presenting HCPs were provided with a significantly reduced number of records to screen for inclusion. After feedback from the first session, a "Quick Guide for Presenters" (see Appendix 3.2) was provided to HCPs who had signed up to present. Key data and findings from multiple studies were extracted and summarised during group sessions. We fostered an environment where critical appraisal was key and highlighted the strengths and weaknesses of included evidence. The KT professional provided support and enabling services to presenters to reduce their workload and improve levels of health information literacy e.g. obtaining full text of papers, helping with interpreting statistical data e.g. forest plots and key statistical concepts such as P values and confidence intervals, identifying appropriate critical appraisal tools, sourcing images to put into presentations (in compliance with licensing and copyright restrictions), providing feedback on presentation slides, populating reference sections, extracting key information and data, providing guidance on selecting papers for inclusion etc. During the discussion forum, obstacles to the implementation of evidence were identified to increase the likelihood that they would be addressed and plans for change could be tailored (Grol 1997).

At the initial planning meetings, we emphasised that we did not intend on imposing the Evidence in Practice Groups model from the UK on staff at our hospital.

Baumann recommends taking an adaptive approach to implementation because no single intervention will be a perfect fit in all settings (Baumann2018). Proactive adaptation played a key role in our strategy (Moore 2013) so that we could shape the initiative in response to important individual, organisational and contextual factors. We tailored it to suit the local context with currently available information before implementation and adapted it iteratively throughout in accordance with feedback loops, observations and performance indicator monitoring. See the TIDieR checklist ([Appendix 3.1](#)) for a list of some of the adaptations we made. We maintained fidelity to a few core components highlighted in our logic model ([Figure 3.1](#)) and the TIDieR checklist.

Table 3.01: Modes of delivery used in Evidence Rounds for promotional, communication and dissemination purposes

Mode of delivery	Details
Group sessions and discussion forum	<p>In general, group sessions took place on a monthly basis. We took a flexible approach to scheduling by avoided exam times, holidays, training or other educational sessions and meetings in order to maximise attendance figures. Sessions lasted one hour because staff on the implementation team identified this as a realistic duration of attendance for most HCPs. They were timetabled on Fridays at lunchtimes (excluding the final session which took place on a Wednesday) and food was provided. The presentations at all sessions had a similar structure with small differences if warranted by the topic e.g. presenters carried out a retrospective local audit for 3 out of the 6 group sessions. Therefore, repeat attendees became familiar with the format and upcoming and potential presenters knew what to expect.</p> <p>A facilitated discussion forum took place immediately after presentations and lasted for up to 30 minutes. We found that the majority of staff remained behind for this. We promoted an informal and relaxed atmosphere where all disciplines and professions were encouraged to contribute their opinions. At times, it was necessary to refocus discussion on key points related to the topic, to bring the group's attention to break-off conversations, to encourage discussion of the applicability of evidence to local practice and practical aspects at the hospital that would influence how the evidence would be addressed/handled.</p>
In-person meetings	<p>One-to-one and group meetings were arranged with key informants (e.g. practice development and front-line staff interested in research) for implementation planning. These interactions were important for initial assessment of the context and choosing the implementation team. It was pivotal to our initiative to gain buy in, and collaborate and partner with HCPs to give them the opportunity to be involved in, contribute to and</p>

Mode of delivery	Details
	<p>co-own the design and development of the initiative. Through recommendations from these meetings and additional contacts, we reached out to those who could be considered as potential opinion leaders and champions. A key intention was to identify people with different professional perspectives to identify their needs and bring them on board.</p> <p>We held meetings with presenters for preparatory, enabling and support purposes. Presenters attended two preparatory meetings, the first after the search strategy was completed to give an overview of results and assign sources and another a few days before the presentation to merge slides, gain clarity about the format of the presentation, make final modifications, summarise information, and identify issues for discussion.</p>
Website	<p>Using a web hosting platform, we designed a logo for Evidence Rounds, purchased a suitable domain name and created a dedicated website. It was designed to present information in a minimalist and aesthetically-pleasing format. During the initiative, the site was updated regularly with current information. The website homepage contained six clickable links, each of which had a distinct core function:</p> <ul style="list-style-type: none"> • to explain the Evidence Rounds initiative • to act as a repository of presentation slides from group sessions • to provide links to informational resources about searching for, and critically appraising evidence • to present information requested by attendees and presenters. For example, explanations of p values and confidence intervals and a brief guide to creating slides for Evidence Rounds group sessions aimed at presenters • to show the schedule of past and future group sessions • to provide contact details for the investigator <p>We sought informal feedback from staff regarding its usefulness and accessibility. The site was flagged at group sessions, meetings, in email correspondence and on promotional posters. We chose the webhosting platform because it allowed us to build the website and create content using high quality templates without the need for coding or programming skills. Our choice was deemed the most likely option to promote sustainability because at the end of the period of support from the KT specialist, it could easily be handed over to a HCP lacking advanced technical skills of website design and administration/maintenance.</p> <p>When the term “Evidence Rounds” was searched for in the most commonly used search engine, the website did not appear directly and so a desktop shortcut was added to the computer in the neonatal unit. In hindsight, training in search engine optimisation (SEO) which would have been useful to the investigator to optimise the findability of the website.</p>
Social media	<p>Dedicated accounts on Twitter, Facebook and LinkedIn were set up. After discussion with staff regarding what they and their colleagues were finding useful, it was decided to discontinue updating each of these platforms and concentrate on modes of delivery preferred by staff such as email, word-of-mouth and the website. Staff were keen to manage work-life boundaries when it came to online technologies.</p>
Email	<p>Reminders to attend group sessions were mostly sent via email to staff mailing lists by HCPs from the implementation team. Email was used commonly for communication by the implementation team and presenters and was used to recruit participants for focus</p>

Mode of delivery	Details
	groups and interviews. Personalised certificates of attendance or participation (for presenters) were emailed to attendees on an opt-in basis.
Posters	Staff reported that posters, although a more passive mode of delivery, were effective at reminding them about upcoming group sessions when strategically located. They were designed using an online graphic design service called Canva.
Word of mouth	Word-of-mouth played a vital role in the delivery of information during the implementation process and was deemed a very effective means of engaging our target audience by the implementation team. Some HCPs started attending group sessions based on recommendations from their colleagues and we were told that discussion about evidence covered in group sessions and its implications for practice continued from the classroom to the wards.

5.) *With what effect should research knowledge be transferred?* The main aims of Evidence Rounds were to disseminate evidence to health care professionals and promote evidence-informed practice. We undertook process evaluation by capturing and monitoring data for key indicators throughout the initiative. Firstly, we distributed sign-in sheets at group sessions to record attendance figures. We wanted to track neonatal and obstetric staff attendances and identify potential patterns. Secondly, we monitored usage analytics on our dedicated website. Both informed us of the penetration of Evidence Rounds to the HCP community within the department. Thirdly, our focus groups and interviews provided self-reported data on how the HCPs were receiving the initiative and how they viewed it in relation to their own evidence-informed practice. Using this data, we identified individual, organisational and intervention level barriers and facilitators to attending and presenting at Evidence Rounds. We were better able to understand the complexity of the behaviours and gauge opinions on whether and how Evidence Rounds was promoting evidence-informed practice for them. These results are presented in the second paper of this two part series in the next chapter.

Fourthly, we followed up with the implementation team to check the status of evidence implementation. Dissemination strategies play an essential role but on their own, do not guarantee the implementation of evidence (Rabin 2018; McCormack 2013). For this reason, and when appropriate during the discussion forum, barriers, facilitators and specific actions to aid implementation of evidence

were identified, discussed and actions were assigned to specific HCPs as appropriate. Three months after the final group session, we followed up with HCPs on the implementation team to see whether Evidence Rounds had influenced practice. They reported that a small number of recommendations from Evidence Rounds had been implemented. When implementation happens, the process can be slow, particularly for more complex issues. In the interviews and focus groups, several HCPs explained that changes in practice often cannot occur until the desired change is firstly made a part of a clinical guideline (see Chapter 4). Writing and updating guidelines can be a lengthy process. Further follow up with the same HCPs occurred 16 and 21 months later.

In [Table 3.02](#), we present the clinical questions and topics explored, the resulting actions identified during the discussion forum and the resulting actions that were carried out for each of the six educational sessions. This information was gathered during follow up with the implementation team.

Table 3.02: Evidence Rounds Sessions Content and Follow Up

Session number and topic	Specific questions/ issues explored	Potential resulting actions identified	Resulting actions and contextual factors
1. Premedication for non-emergency neonatal intubations	<ul style="list-style-type: none"> • What are the risks and benefits of using premedication for neonatal intubation? • What are the risks and benefits of not using premedication? • What are the most safe and effective premedications to use? • What is the current practice in other units (national & international)? 	<ul style="list-style-type: none"> • Develop a policy for premedication for non-emergency neonatal intubation. • It should recommend the following medications: <ul style="list-style-type: none"> ○ Administer remifentanyl or fentanyl instead of morphine as it has a more rapid onset and a shorter duration of action ○ Administer suxamethonium instead of pancuronium ○ Add atropine a preventative, vagolytic agent to prevent bradycardia during intubation 	<p>Evidence Rounds identified as the 'driving force' for the policy.</p> <p>The medical recommendations were added as an appendix to the neonatal intubation policy and all staff are required to confirm that they have read and understand the policy.</p> <p>Colour-coded labels have been introduced.</p> <p>While there is agreement for the need to audit practice, elective non-emergency intubation is infrequently performed so an audit of practice has not yet been completed. When it does happen, there are</p>

Session number and topic	Specific questions/ issues explored	Potential resulting actions identified	Resulting actions and contextual factors
		<ul style="list-style-type: none"> • Arrange with pharmacy to stock medications • Introduce colour-coded sticky labels to assist staff in ensuring that medications are offered in the correct sequence • Arrange staff training • Audit practice 	plans to audit elements of each intubation.
2. Timing of umbilical cord clamping	<ul style="list-style-type: none"> • The impact on delayed resuscitation at delivery • Should resuscitation begin with the baby still attached to the cord? • What do the current guidelines say? • Benefits and risks to term and preterm infants • Obstetric implications for the mother 	<ul style="list-style-type: none"> • Indicate when cord clamping is delayed on Neonatal Summary Sheet. • Offer delayed cord clamping (DCC) to preterm infants in addition to term infants which has already been the case. • Conduct audit to assure compliance with documentation 	<p>Staff report a 'concerted effort' to offer DCC to preterm infants since Evidence Rounds educational initiative.</p> <p>Audit conducted - 8 out of 11 babies $\leq 35/40$ at birth were documented as having received DCC from between 30 to 60 seconds.</p> <p>Staff report plan to audit preterm infants <35 weeks every 3 months.</p>
3. Medical management of patent ductus arteriosus (PDA) in preterm infants	<ul style="list-style-type: none"> • What are the risks and benefits of using medical treatments (specifically indomethacin, paracetamol, ibuprofen) for treating PDA in preterm infants? • What are the risks and benefits of not using them in this population? 	<p>Confirmation that best practice was currently in place which is <u>not</u> to routinely treat asymptomatic cases of PDA.</p> <p>Create a standard operating procedure (SOP) for management of PDA particularly for junior doctors who frequently rotate into the neonatal intensive care unit (NICU).</p>	<p>In December 2018, a doctor was writing this standard operating procedure using evidence presented during the educational session.</p> <p>The same doctor was reported to be planning an audit of practice.</p>
4. Antenatal screening for group B	<ul style="list-style-type: none"> • What is the rate of recurrence of GBS? 	The evidence presented at this educational session highlighted a) the increased risk of early-onset group B Streptococcus	After this educational session, the Royal College of Obstetricians and Gynaecologists (RCOG)

Session number and topic	Specific questions/issues explored	Potential resulting actions identified	Resulting actions and contextual factors
Streptococcus (GBS)	<ul style="list-style-type: none"> • What is the optimal timing for screening? General thinking = 35-37 weeks • What are the long term effects on infants who have been treated with antibiotics for GBS? • Should women with prolonged SROMs at term (of unknown GBS status) be offered screening? • Should women be offered a patient information leaflet? 	<p>(EOGBS) in infants of women with risk factors and b) the existence of strategies (screening or intrapartum antibiotic prophylaxis (IAP)) that could reduce the risk.</p> <p>There was consensus amongst staff that there was a need for action because women with GBS in a previous pregnancy were not being offered either strategy. The recommendations from this session were to offer screening to all women who had GBS in a previous pregnancy and to change the local guideline accordingly.</p> <p>Audit patient charts regularly.</p>	<p>published their Green-top Guideline no.36 Prevention of Early-onset Neonatal Group B Streptococcal Disease (36). A staff decision was made to follow the RCOG guidance to screen, however the culture medium to screen was not available at the hospital. Therefore, the local guideline was updated to recommend that all pregnant women who had GBS in a previous pregnancy be informed of their increased risk and offered IAP. In this example, the recommendation from Evidence Rounds was not implemented due to an organisational barrier i.e. a lack of screening medium. Nonetheless, Evidence Rounds increased staff awareness of research evidence and local audit data, promoted discussion and increased motivation to change the guideline and clinical practice.</p> <p>Audit of 10 patient charts each month have confirmed high levels of compliance with change in practice</p>
5. Antenatal steroid use for preterm deliveries less than 37 weeks gestational age (GA)	<ul style="list-style-type: none"> • At what GA should the corticosteroid be administered? • Identifying mothers at risk. • Routine administration to twins or triplets • When should steroids be repeated? 	<p>The consultant dealing with the patient should consider antenatal steroids when there is a risk of preterm birth at a gestational age of 23 weeks +0 days to 23 weeks +6 days (previously 24 weeks + 0 days).</p> <p>Change guideline on preterm premature rupture of the membranes (PPROM) to reflect this.</p>	<p>There was a gap in knowledge of the evidence prior to Evidence Rounds. After the educational session, awareness of the evidence increased and it was discussed at subsequent meetings.</p> <p>The local guideline was updated and practice changed.</p>

Session number and topic	Specific questions/issues explored	Potential resulting actions identified	Resulting actions and contextual factors
6. Fetal blood sampling (FBS)	<ul style="list-style-type: none"> • The specificity and sensitivity of FBS. • Does FBS have any impact on C-sections and instrumental delivery rates? • Is taking a sample from the fetal scalp a true reflection of fetal well-being? • The differences between the FIGO and NICE guidelines in interpreting CTG's and criteria for FBS. • Normal pH levels of the baby during labour • FBS in presence of Meconium • FBS in reducing incidence of HIE/Cerebral palsy. • CTG monitoring with FBS vs. CTG only without FBS 	The evidence presented in this session demonstrated that digital fetal scalp stimulation is effective as a first option in fetal monitoring if a cardiotocography (CTG) trace is pathological. If the fetal heart rate accelerates, the FBS should only be undertaken if the CTG trace is still pathological. This means that FBS procedures, which are more invasive for mother and fetus, will be reduced. Staff to update existing fetal monitoring guideline accordingly.	The local guideline was updated to reflect these recommendations. The implementation team reported an increased awareness of the evidence however, there has been no real practice change. Staff are questioning why, there are education sessions every month and this topic is frequently discussed at caesarean section meetings.

Follow up with the implementation team, identified that that the educational program was not sustained beyond the period of support from the KT Specialist.

DISCUSSION

Evidence Rounds presents a novel initiative to support a knowledge translation strategy targeted at HCPs. It moves beyond the journal club model that was familiar to our target audience. It was designed and implemented based on feedback

obtained from our target audience and we collaborated and partnered with an implementation team of HCPs. As demonstrated by our attendance figures and website analytics, staff engaged actively with the initiative. We have helped address the need for more research that provides a detailed account of the implementation of knowledge translation strategies (Hamilton 2018; Proctor 2013). We have also highlighted the contextual factors and modes of delivery that influence implementation outcomes. The initiative also led to changes in clinical guidance and practice through the promotion of evidence-informed practice.

Limitations and Lessons Learned

We would like to acknowledge that our study has several limitations. Firstly, six educational sessions were carried out over nine months. It is unlikely that this was a sufficient duration of implementation to allow for the initiative to realise its full potential, become fully integrated or adopted by staff that Rogers [9] might describe as the late majority and laggards. In this way, the potential of Evidence Rounds to demonstrate sustainability may have been restricted. Secondly, our theoretical approach did not include pedagogical theory to develop our educational initiative. Thirdly, attendance data collected through sign-in sheets can be viewed as a conservative estimate of actual attendance figures. We are aware of several attendees who did not sign in during sessions for reasons such as being beeped or called away to attend to a patient. Fourthly, the number of unique visitors recorded using website analytics may be inaccurate because the same person could potentially access the website multiple times using more than one IP address or computer. This would have resulted in them being counted as more than one user. Fifthly, our initiative was implemented at one institution and may be received differently by HCPs in other settings. Sixthly, the information presented in Table 3 regarding follow up lacks objective outcome evidence of practice changes following the educational sessions, compared to prior practice. The study by Emparanza (2015) provides a good example of outcome measures that might inform other research.

In terms of implications for practice, the issue of sustainability is important to consider. Without a nominated person or team with dedicated professional hours and taking into consideration the time spent planning and developing, we were aware that there was less potential to sustain the initiative at our busy hospital setting. Nevertheless, we took measures to plan for sustainability such as developing tools that could be handed over easily e. g. the website, linking in with library staff to confirm that they would be willing to design and conduct future searches, having conversations with key people, discussing it during our focus groups and interviews and offering guidance during a handover period. Despite this the intervention was not sustained beyond the period of support from the KT professional. Ideally, future initiatives will have a longer period of implementation so that they have a better chance of becoming accepted and adopted by staff and allow for appropriate capacity building.

A key learning point for us has been that initiatives like Evidence Rounds are only as strong as the people involved. We recommend collaboration and partnership with the target audience starting from the planning stages and continuing throughout. The multidisciplinary and interprofessional approach worked very successfully for Evidence Rounds and according to informal feedback and our focus group and interview data it was highly valued by our target audience (see Chapter 4). We engaged with them, listened to their feedback and found ways to address their identified needs when possible. Our key message in this regard would be to network and engage with champions, opinion leaders, enthusiastic individuals, early adopters and do not wait around for laggards. Involving an Information Specialist or Librarian or someone who has knowledge of appropriate databases and other online resources and is experienced in carrying out systematic and detailed literature searches is essential. They can help to address issues of information overload and reduce the workload of HCPs involved in presenting.

Adaptation and adherence to a small number of core components was fundamental to the initiative. Baker *et al* (2015), found that positive outcomes are more likely if an adaptive approach is taken to implementing interventions when compared to no intervention or dissemination alone. Feedback from HCPs who participated in our

focus groups and interviews suggested that choosing topics based on when guidelines are being created or updated increases the likelihood of implementation of evidence.

Further studies are required to assess the effectiveness of Evidence Rounds and similar initiatives including those implemented in the developing world. Evaluation could include pre and post-testing of knowledge of topics addressed by the initiative, impact on HCP behaviour and patient care outcomes. More studies are needed to better understand and identify additional underlying mechanisms and contextual factors that influence programs. Additional research is also needed to understand how a social media strategy might be optimised for use in the delivery of similar initiatives.

CONCLUSION

Evidence Rounds was a complex initiative to implement due to individual, contextual and intervention-level factors. We used a multi-faceted strategy to disseminate key research findings to our clinical audience and promote evidence-informed practice. We collaborated with and involved our target audience from the start of the planning phase and throughout implementation. This paper provides useful insight into processes and mechanisms involved in rolling out an initiative. We describe the practical aspects of the process of introducing an evidence-informed initiative. The level of detail we have provided will aid reproducibility for those wishing to roll out similar initiatives or elements of the initiative. We highlighted contextual factors that had an impact on implementation in our setting so that others might use them to inform the planning their own initiatives.

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CHAPTER 4: PAPER 3

Implementing an initiative to promote evidence-informed practice: part 2 – health care professionals' perspectives of the Evidence Rounds program

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ABSTRACT

Background:

The translation of research into clinical practice is a key component of evidence-informed decision making. We implemented a multi-component dissemination and implementation strategy for healthcare professionals (HCPs) called Evidence Rounds. We report the findings of focus groups and interviews with HCPs to explore their perceptions of Evidence Rounds and help inform the implementation of future similar initiatives. This is the second paper in a two-part series.

Methods:

Our participants were HCPs who attended group session exploring the evidence on clinical questions or topics chosen and presented by the HCPs. We conducted and audio-recorded in-person focus groups and one-to-one interviews, which were then transcribed verbatim. Two authors independently coded transcripts. NVivo software was used to collate the primary data and codes. We analysed data guided by the five steps involved in framework analysis; 1) familiarisation 2) identifying a thematic framework 3) indexing 4) charting 5) mapping and interpretation.

Results:

We employed total population purposive sampling by inviting all staff who attended group sessions to take part. Thirteen HCPs participated, of which 6 were medical doctors and 7 were nursing or midwifery staff. We identified the following key domains; organisational readiness for change, barriers and facilitators to attendance, barriers and facilitators to presenting, communication and dissemination of information, and sustainability. During focus groups and interviews HCPs reported that Evidence Rounds had a positive impact on their continuing education and clinical practice. They also provided insights into how future initiatives could be optimised to support and enable them to narrow the gap between research evidence and practice.

Conclusions:

Individual, departmental and organisational level contextual factors can play a major role in implementation within complex health services. HCPs highlighted how in combination with clinical guideline development, implementation of evidence could

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be increased. In Chapter 3 follow-up data on how Evidence Rounds helped to change practice is presented. Further research after a longer period of implementation could investigate how initiatives might be optimised to promote the uptake of evidence, improve implementation and expedite behaviour change.

BACKGROUND

Evidence-informed decision making is fundamental to the provision of healthcare and central to this is the translation of research evidence into clinical practice. The use of the term “evidence-informed” highlights the need to acknowledge and address contextual influences and consider how the best available evidence can be used in specific circumstances (Bowen 2005).

There is a need to improve translation of research evidence into practice (Grimshaw 2012). The ever-growing volume of research publications (Greenhalgh 2014; Waddell 2002), the complex nature of research (Haynes 1998), gaps in skills (Grimshaw 2002) such as knowledge of how to interpret statistical information, publication bias (Vaucher 2016) and nonlinear, non-rational processes in decision making (Greenhalgh 2017) are just some of the potential barriers to translating evidence into practice. Research is growing in fields that attempt to tackle and narrow the gap between knowledge and action such as knowledge translation (KT), dissemination and implementation science, knowledge mobilisation and knowledge brokering. In this study, we ask our target audience about the barriers and facilitators they experienced to attending and presenting at our initiative that encourages the translation of evidence.

We utilised a multi-faceted KT strategy to actively disseminate evidence to healthcare professionals and promote evidence informed practice including implementation of evidence where appropriate (Boaz 2011). While a variety of definitions for the term dissemination have been suggested, in this paper we define it as “an active approach of spreading evidence-based interventions to the target audience via determined channels using planned strategies” (Rabin 2018 p. 22). KT strategies can employ single or multiple components such as professional educational meetings eg. journal clubs, educational materials, educational outreach visits, knowledge brokers, audit and feedback etc. A limitation of the traditional educational model of journal club is that its primary focus is on the critical appraisal of a single source (Hatala 2006). A Cochrane systematic review of 81 trials involving nearly 11,000 healthcare professionals found that standalone continuing education meetings and those with additional components can lead to small improvements in

patient care and clinical practice with the exception of very complex behaviours (Forsetlund 2009). In a systematic review by Giguère and colleagues, printed educational materials appeared to positively effect professional practice outcomes. However, it was not possible to measure the size of the effect in relation to patient outcomes (Giguère 2012). In another systematic review, there was a lack of evidence to assess the effectiveness of knowledge brokers (Bornbaum 2015). A Cochrane review reported that small but important changes to clinical practice can result from audit and feedback (Ivers 2012). As a result, in our interview guide (see [Appendix 4.1](#)) we asked participants questions about specific components and modes of delivery to find out what worked and did not work for them.

While outcome evaluations tell us whether an implementation programme does or does not work, they ignore confounding contextual factors (May 2016) and can fail to tell us more about why, how or under what circumstances a programme does or does not work (Palinkas 2012). To address these issues, it is necessary to examine the process and context. Translation of knowledge is a context-dependent process, contingent on many factors and takes place in complex healthcare systems (Harvey 2015). We chose to conduct a qualitative study that captured contextual information from HCPs using focus groups and interviews.

A Cochrane systematic review by Forsetlund and colleagues found moderate quality evidence that for HCPs working in primary and secondary healthcare settings, higher attendance at educational meetings was effective at increasing compliance with a target practice. Interestingly, they found decreased effectiveness for outcomes with a lower level of severity and no evidence of effectiveness for complex behaviours. They recommended the use of strategies to increase attendance although they did not specify the necessary components of these strategies (Forsetlund 2009). In this study, we ask our target population about the determinants impacting their choice to attend or present at our group sessions. In a given population, there needs to be an understanding of barriers and facilitators to evidence based practice (Grol 2004). McCormack and colleagues identified the broad goals of dissemination to clinicians as increasing the reach of the evidence b) increasing the motivation to utilise and apply evidence and c) increasing the ability to utilise and apply evidence

[McCormack 2013]. We asked the HCPs how our initiative performed in relation to these goals. Evidence about the sustainability of KT interventions is still lacking (Wiltsey-Stirman 2013; Tricco 2016). We also questioned our participants about the sustainability of Evidence Rounds and the factors that might increase the likelihood of sustainability for other initiatives.

Evidence Rounds took place over nine months from July 2016 to March 2017 and featured three core components: 1) six consecutive group sessions examining the evidence on clinical topics or questions chosen and presented by our target audience, 2) support from a KT professional and 3) the use of multiple modes of delivery to communicate and disseminate information including a dedicated website. Some of the core elements of Evidence Rounds were based on Evidence in Practice Groups established by Jacqui LeMay and run by the Clinical Evidence Based Information Service (CEBIS) at University Hospitals Coventry and Warwickshire NHS Trust. We referred to the Diffusion of Innovations model (Rogers 2003), the framework for knowledge transfer (Lavis 2003) and the Knowledge Translation Planning Template (see [Appendix 3.6](#) - Barwick 2000, 2013) during the planning, design and implementation phases. We used collaborative processes to design and develop the initiative and actively sought feedback with key stakeholders (HCPs) throughout these phases. By doing this, we could adjust components to better suit the local context and meet the needs and preferences of our specific clinical practice audience. A more comprehensive description of Evidence Rounds and its process of implementation is available in Chapter 3 of this thesis.

The aims of this study were to a) identify HCP-reported barriers and facilitators to attending and presenting at group sessions b) to explore HCP views of Evidence Rounds particularly as a dissemination strategy, and c) to generate insights to improve the sustainability of future initiatives.

METHODS

Study design

We utilised a modified qualitative descriptive study design. Qualitative studies can provide valuable insights into contextual factors and intervention features that influence the success of KT interventions [Yost 2015]. Sandelowski (2000) identifies 5 features of the qualitative descriptive study: 1) a minimally theoretical approach; 2) purposive sampling; 3) data collection using focus group interviews; 4) qualitative content analysis; and 5) data re-presentation that involves a minimal description of the data. Firstly, we chose this design because while our research was theoretically-driven by Roger's diffusion of innovations approach, it was not theory-based. Secondly, to maximise recruitment of participants, we wanted to use total population, purposive sampling. Thirdly, we had chosen semi-structured focus groups and interviews to gather data from our target audience. Fourthly, we used framework analysis rather than straight qualitative content analysis but this approach also features some content analysis. Lastly we wanted to report our findings without excessive interpretation or straying away from the words used by the participants.

Setting and Participants

We invited all healthcare professionals working in the women and children's division of an urban hospital in Ireland who attended or presented at least one Evidence Rounds educational session to participate. We excluded students on placement and other attendees who were not employed as health care staff at the hospital because the primary target audience of the initiative was HCPs who attended and presented at group sessions and we were specifically interested in learning more about their perceptions. We did not prespecify a target sample size before recruitment because we expected it to depend on attendance levels, availability and willingness to participate in the study as well as other potential factors such as data saturation. Nevertheless, focus groups were expected to consist of 4 to 8 participants each. No more than 10 individuals would be interviewed on a 1:1 format. If more than 10 individuals were to volunteer, selection would be prioritised using the following

criteria: a) first priority would be given to any attendee type who is under-represented in the focus groups and b) second priority will be given to attendees who volunteered on a first come, first served basis.

Procedure

Focus groups and interviews

According to Roger's diffusion theory, individuals adopt innovations at different rates for different reasons. We decided to gather data about our audience through the use of focus groups and interviews. We gave potential participants the choice to take part in either, according to their individual preferences. We displayed posters in areas frequently accessed by our target population. To enhance recruitment, we entered each participant into a draw to win a voucher for a local restaurant. We developed an interview guide around the aims of the study ([Appendix 4.1](#)). We asked participants about the determinants influencing their choice to attend or present at our group sessions and how our initiative performed in relation to the goals identified by McCormack (2013). We questioned them about the sustainability of Evidence Rounds and the factors that might increase the likelihood of sustainability for other initiatives. We asked participants questions about specific components and modes of delivery to find out what worked and did not work for them. Our study was granted ethical approval by the Galway University Hospitals Clinical Research Ethics Committee (CREC). During recruitment, we distributed informed consent packs incorporating a participant information leaflet and consent form ([Appendix 4.2](#)), which all participants read and signed before taking part. We changed potential identifiers to protect the anonymity of our participants.

Data collection and analysis

We audio-recorded interviews and one author moderated all focus groups and interviews for consistency. Audio files were transcribed verbatim by a professional from a transcription service who had signed a confidentiality agreement. We chose to analyse the data using Richie and Spencer's framework analysis, which can be used in applied qualitative research [Richie 2003]. Our decision was based on its suitability for dealing with focus group and interview data and its focus on

prospective actionable outcomes. We utilised an iterative rather than a linear process to complete the five components of this method of analysis:

1.) Familiarization

AC who had been present at all recordings re-listened and where appropriate, made corrections and where listened to the audio files while reading the corrected transcripts. AC reviewed the observational notes collected by the assistant moderator during the focus groups. Two authors (AC and MD) independently coded the transcripts and noted key points, repeated themes and issues considered important by participants.

2.) Identifying a thematic framework

We began to create a thematic framework drawing from a list of 54 *a priori* key issues deemed relevant to our study aims, 21 additional emergent issues based from participant responses, and began to connect and look for patterns in participant responses to form analytical themes. The thematic framework took several iterations.

3.) Indexing

We uploaded the transcripts to NVivo Version 11 and systematically applied the thematic framework by assigning nodes and sub-nodes to text within each transcript. As is common in framework analysis papers, some text was coded into multiple nodes [Parkinson 2015], others were merged and throughout this stage, we made further refinements to the framework.

4.) Charting

We reviewed the data and made a decision to chart by core themes rather than cases. We created five tables each with a unique domain and used themes, sub-themes and illustrative quotes that demonstrated the range of participant responses. All authors reviewed the tables and made revisions to improve the presentation of data.

5.) Mapping and interpretation

We referred to the main aims of the study and reviewed the tables. We considered the nature and range of participant perspectives. Using this method, it was possible to extract key dimensions of the barriers and facilitators to attending and presenting at Evidence Rounds, their perspectives of our dissemination strategy, and suggestions to make future initiatives more sustainable.

RESULTS

Thirteen HCPs participated in 3 focus groups (of between 2 and 4 participants), and 5 in one-to-one interviews. Six medical doctors and seven nursing or midwifery staff participated, of which four were male and nine were female. Our data analysis revealed five core domains regarding HCPs perspectives of Evidence Rounds: (1) barriers and facilitators to attending; (2) barriers and facilitators to presenting; (3) organisational readiness for change; (4) communication and dissemination of information; and (5) sustainability.

Barriers and Facilitators to Attendance

This domain included three themes namely; departmental context and resources, social context and individual level factors. HCPs who had control over the timing for their daily activities experienced less scheduling-related restrictions compared to those who were providing front-line care on hospital wards. Lunchtime was identified as the most likely time to suit the majority of people. The provision of food and beverages was a facilitator to attendance especially for HCPs who would not get another opportunity to eat during their work shift. Keeping sessions within the advertised timeframe was appreciated by busy HCPs. A number of staff came into work on their days off to attend Evidence Rounds. Some line managers agreed to allow time in lieu for these staff. However, this was not offered to all employees and in general, being off duty was a barrier to attendance. We also identified a previously unknown scheduling conflict with a lunchtime meeting for obstetric staff. This may contribute to the fact that there were fewer attendees from this department. Busy

workloads and inadequate staffing levels were barriers to HCPs attending sessions. Understandably, clinical care took priority and staff reported that some colleagues had trouble attending even mandatory training sessions (Evidence Rounds was voluntary).

All staff viewed the interprofessional or multiple disciplinary natures of Evidence Rounds to be a facilitator to their attendance. Teamwork and the breaking down of professional silos were among the positive effects they saw from this approach. Consultant attendance and management support for Evidence Rounds was mentioned repeatedly as having a positive effect on non-consultant hospital doctor (NCHD), nursing and midwifery staff attendance. Senior staff acknowledged that their attendance set an example for junior staff. Some HCPs were motivated by a self-perceived benefit to attending e.g., obtaining professional credits for attendance, certificates of attendance or participation, claiming back time spent or enjoying a free lunch.

Table 4.01 Themes and sub-themes likely to explain responses to questions about barriers and facilitators to attendance

Theme	Sub-theme	Sample quote	Participant	
Departmental context and resources	Scheduling and rostering	“if you can manage your own diaries, I don’t think it makes a big difference to you because if I did attend I could go for lunch afterwards whereas a staff member on the ward I think that’s a lot more important to them, that they’re able to get their lunch as well.”	P11	
		“And there’s no good time in maternity, as far as I could see for any education sessions like this. And it’s an ongoing battle really as to what is the most suitable one. But I’d say perhaps it is as suitable as any time.”	P1	
		“it kept to the time limit. And I think that’s really important because sometimes things can go way beyond the time frame. And people lose interest. And very often they have other things and deadlines to get to and meetings to get to.”	P12	
		“food always motivates people to come to meetings (laughs). And if they know there’s a free sandwich and a free cup of coffee they’re generally more incentivised to come definitely.”	P12	
		“It definitely will encourage people to attend because especially at the time the sessions were at, you felt you weren’t going to miss the opportunity to eat something in the day if you attended.”	P2	
		“And we did ensure, it was one of the things that I did, that staff would get time back and let them know that if they did come in on their time, in their own time they get 2 hours’ time away. 1 or 2 did come in in their own time but not not [sic] much.”	P7	
		“But they had to be on duty, not many people came in from outside.”	P11	
		“I don’t know if it’s something that’s possible, you know when people are on a day off, but yet they have an interest in the topic, if they were to come in and be given time back in lieu of attending.”	P2	
		“the obstetric site has few people turn up, it’s also they have their Friday lunch time meeting with free lunch as well.”	P9	
	Workload and staffing levels	“If you’re going to be short staffed starting off in the day there’s absolutely no way anybody can go.”	P2	
		“people like me who are floaters around the place and can leave there, get up and leave and it’s the people at the bedside that can’t get up and leave and attend these meetings. I see that a lot”	P8	
		“it is actually difficult for people to get time, there is no scheduled time off during the day. So you’re always active and there is always the potential that you’re going to be called away from some task to do another task that’s considered more important. And we run an acute service here so it’s an acute delivery service and acute neonatal unit. . . . So it is difficult for us to get protected time to do things. We don’t have it basically.”	P10	
		“I know it’s not easy because of staff constraints at the minute. That a lot of leave, not being replaced, and all that, that it is difficult to release people, even for their mandatory training. And therefore, they find it very difficult to come to other training.”	P1	
		“Work load on a busy shift, that you can’t get out to it would be a big factor because you have to prioritise care so you can’t leave the unit short-staffed.”	P7	
		“because we are working in intensive care unit so I can come when I can go away from my, I mean patients, you have to understand that the babies are of course, have a priority.”	P6	
		“I do find it very challenging here to be honest. I organised a talk last week and I had 2 people attend and it was announced by, you know it was very pertinent to everything.”	P11	
	Organisational climate			

Theme	Sub-theme	Sample quote	Participant
Social context	Interprofessional and multiple disciplinary approach	"the multidisciplinary approach that everybody was involved in it, you know, we can be very segregated. So I think it was important that everybody worked together."	P4
		"I thought this was a good one. Because it brought together the obs [obstetric] and the neonatal end of things. So that was certainly very positive."	P10
		"I think the multidisciplinary aspect of it. I think it wasn't just one particular person presenting the whole thing. Having a team and each person having their specific work designated."	P12
	Influence of senior staff	". . . the consultants needing to attend and show the interest. Because here nothing happens unless they show that (. . .) if the consultants support it, certainly they'd get all their Regs [Registrars] and SHOs on board because they'll do anything that they tell them. And from a midwifery perspective if the managers are on board and encouraging. I think that's the main thing."	P11
		"And it's also I think really important as a [high level staff member] to attend these meetings. So I think you set a good example then to the junior staff that these are important to attend."	P12
Individual level factors	Perceived benefit	"But it may be down the road where I'm not chasing every study opportunity that I get, that I would be more selective about topics but it wasn't an issue for me, the topics, they were all of interest so far."	P7
		"But again it's very hard to get people who have been, you know a role, an active role in the hospital to take an hour out of their day to attend something, you know unless there's some carrot there, there was the education bit, there was lunch and it was well advertised."	P10
		"if this is a way of people getting their credits, then it is automatically attractive to everybody"	P10
		"it's just a suggestion for one thing. Like providing you know, CPD hours for these activities, would make them even more. Would make people more like want to come even more."	P13
		"I loved getting certificates (inaudible speech & laughter), we do have to kind of show that we're improving our practice and going to different study days (. . .) it's a good way of bringing the current evidence I suppose into practice. You know and just looking at our own practice and seeing if there's ways of improving it or not."	P3
		". . .when people do get certificates they, it does motivate attendance. Because then they can claim that they had one hour at this meeting and they have the certificate then to support that and back them up."	P12

Barriers and facilitators to presenting

This domain included two themes of individual level factors, and departmental context and resources. The perceived benefit of taking part and having an interest in the topic or format facilitated presenting at Evidence Rounds. Presenting was considered as a more active way to engage with the literature. Some participants had a long-standing interest in their topic and viewed Evidence Rounds as a platform to promote discussion with colleagues. One participant took part because they wanted to experience giving a presentation in an alternative format to a journal club. Another participant shared that recruiting presenters was a continuing problem. Health care professionals who saw themselves or others as being deficient in knowledge, skills, or education or those without a research background, identified this as a barrier to presenting. For some participants, their taking part was done to motivate others and learn the process so that they could provide assistance to future presenters. Others presented because they were well-versed on the topic and felt confident to present. One participant mentioned their fear of being asked difficult questions by attendees but chose to present regardless.

The structure of Evidence Rounds whereby three HCPs presented at each session was encouraging for some staff. Some topics can cause information overload if there is a lot of published evidence so sharing the literature and the workload with colleagues helped to minimise any negative impact on work-life balance.

Nevertheless, some HCPs viewed their busy schedules and the extra work associated with presenting as barriers.

The transience of junior medical staff was identified as a barrier because they were rotated to different hospital departments or hospitals every 6 months. They were perceived as being less willing to take part because they would be moved soon afterwards. Support from line managers i.e. protected time to prepare for their presentation, was identified as a determinant that would encourage staff to present.

Table 4.02 Themes and sub-themes likely to explain responses to questions about the barriers and facilitators to presenting

Theme	Sub-theme	Sample Quote	Participant	
Individual level factors	Perceived benefit and interest in topic and format	"I think by doing, taking the extra step by presenting your learning things as well rather than just sitting down listening to somebody else talk about something. I think if you're a presenter you would learn more basically and probably benefits you more because you're taking in all the information."	P3	
		"my topic was which I'm passionate about"	P11	
		"And I thought that afterwards. I said some people here have no interest in what I'm saying. But I have an interest in doing it."	P8	
		"I've a big interest in that topic. And also there was concerns raised clinically about So I thought here goes, here's the big opportunity and I'm glad I did it."	P1	
		"I think when I read that, you know title, Evidence Round, I feel like it's a bit different, which I already presented like journal clubs, case presentations and thing like that. So that appealed to me, like you know, should I try something different?"	P5	
		"I guess there was always a bit of difficulty with picking people who would do the stuff and that will always be a problem. And I'm not sure of what a better way to do that is."	P10	
	Self-perceived knowledge and skills		". . . I'm not too sure that every midwife would be happy to participate. And that kind of worries me a bit because this is supposed to be every man's or every woman's kind of, all of our forum. And I'm not too sure if someone who wasn't that confident, like I'd present a good bit. . . . and I found it quite nerve wrecking. And that was with a lot of support. And that's just me, I just would feel, like if I was doing it again I probably wouldn't be as nervous but, or maybe I would. But I'm not too sure how other midwives that hadn't the same kind of background as myself would feel and that's the only worrying bit about it."	P11
			"I felt I'm fairly up to date myself with the topic therefore that didn't inhibit me to present to the greater group."	P1
			"if they don't have a background in research or anything, I think it would be difficult to be involved. . . you need to have a little bit of knowledge and background to be able to do that in a competent, confident kind of manner So I think their educational status as well would kind of come into play."	P11
			"I don't think I could see me doing it, no I would not be able to stand up in front and present. Even though I do teach a course even just when I was sitting there I said oh there's no way I would be able to stand up there and do that. . . . I don't think I'd have the skills to do it. I wouldn't be really proficient with you know, the technology"	P4
			"I was really worried about, you know the questioning and would I be able to manage the questioning, that was my concern really"	P11
	Setting an example		"So I thought I just can't do it unless I've done it and understand it completely. So it was kind of just to get a real insight into the process and to be able to support others."	P11
	Departmental context and resources	Workload and staffing levels	"Because when you're working in a clinical job and you're trying to keep up to date with research and having to go through an abundance of papers and meta-analysis and research and reviews. It can be very time consuming. And particularly when you've got life outside of work as well [. . .] dividing that work load up between people works really well."	P12
"And you can see the difficulty in trying to get the volunteers to kind of do the work. Because its work for them, you know I mean there is an effort required. And you know they already have plenty			P10	

Theme	Sub-theme	Sample Quote	Participant
		of work to do. And then you know, this is an additional task for everybody. So it is a challenge to keep things like this going, yeah.”	
		“You know it isn’t as simple as going in and looking at a journal and kind of looking at the evidence and that, like there’s a lot more work involved [. . .] to be given time I think would be important from an organisational perspective.”	P11
		“ . . . at this level of training you don’t need months you don’t need months to prepare. Once you have the articles, a couple of days. Anything else is excuse.”	P9
	Transience of medical staff	“these things work for permanent staff. They don’t work well when staff are coming and going. And that’s again you know the basis of the difficulty with trying to get the medical people to engage in anything. It’s because they are temporary, they’re gone in 6 months’ time, it doesn’t matter really, you know.”	P10
	Buy-in from senior staff	“But I do think for somebody on the wards based, I think it would be really important that their managers would be on board and they’d be given time and support to prepare for it. And I think that would be crucial [. . .] if my boss didn’t support it, if she wasn’t, if she didn’t have the buy in or the belief in this. Then you know, that might have been difficult.”	P11

Organisational Readiness for Change

This domain included two themes of acceptability and appropriateness, and pushing and changing slowly. All participants viewed Evidence Rounds as having a positive impact on their practice and education. It highlighted the need to improve their communication with colleagues in relation to approaches to care delivery. Evidence Rounds helped to ensure practice was based on research evidence as well as their own clinical experience and that of their colleagues. The initiative was acknowledged as having a wider scope, decreased risk of bias and more applicability to decision-making for clinical care than traditional journal clubs. Participants welcomed the opportunity for interprofessional collaboration across multiple professions and disciplines and saw this as a means to network and discuss key issues with colleagues they might work with infrequently. There was recognition that getting together for Evidence Rounds sessions helped to foster links between the midwifery, obstetric and neonatal departments.

Most participants acknowledged that key research findings highlighted as actions from Evidence Rounds were slow to be implemented although some recommendations had been implemented in practice. Bridging the gap between

research and practice is often contingent on additional steps. Evidence Rounds was seen as a platform to begin a conversation and start to plan the formal process of updating or creating new guidelines so that there could be a widespread change in practice. One participant noted that having the relevant guideline developer in attendance would increase the likelihood of getting the evidence into practice.

Table 4.03 Themes and sub-themes likely to explain responses to questions about organisational readiness for change

Theme	Sub-theme	Sample quotes	Participant	
Acceptability and appropriateness	Impact on practice and education	"Seriously, I think it's one of the best things that's happened in a long time for advancing our practice and education."	P4	
		". . . the last meeting, it raised a lot of questioning. So and we all think we are all doing the same thing. But the last meeting showed that we don't really do the same thing."	P9	
		"Evidence Rounds were very, I think concise. And all the documents were there. I think it gives you a much better overview of of [sic] things. And it certainly has led us to question our practice. And the one thing that jumps to mind was the medication pre-intubation. [. . .] Evidence Rounds are very good at making us all think about our practice. And how we can improve it. Are we doing things safely? Are we in keeping with national and international evidence supported best practice, recommendations?"	P12	
		"I don't want to use the word ignorance but it definitely educates people into, you know . . . [trails off]. Again, a flaw of medical practice is the kind of folklore of practice. That people work in one hospital and oh they all did this here and that's why we're doing it now. Why aren't you doing this, because they're all doing that there? But people often fail to look at what the evidence is to support the treatment or to support the practice."	P10	
	Comparison with journal club		"Journal clubs are good if they're used the right way. But what happens an awful lot is that people focus on one article. And it may not be the most up to date article. And it's just one particular aspect. Whereas the Evidence Rounds I find are really good because it's more like you're going to all the various repositories, to access your evidence. You're looking at your Cochrane review and your meta-analysis. You're getting more of a, I guess, an eagle view of it."	P12
			". . . journal club tends to just whip out one article . . . and often it may have a biased view . . ."	P10
			"I know we used to have a journal club . . . that went for a while but it didn't take off."	P3
	Promoting interprofessional collaboration across multiple disciplines		"it's a platform for different groups [to] say, do we agree with it, do we not agree?"	P9
			"I liked the multidisciplinary approach, I thought that was brilliant. I really and I loved the fact that so many of the midwives even came from the other wards that I	P7

Theme	Sub-theme	Sample quotes	Participant
		wouldn't know very well. And they participated and asked questions . . . you got a great discussion going."	
		"I think it's very, very important here . . . that it is very much combined obstetrics and neonates [. . .] [midwives] need to be able to speak at meetings and in groups and kind of, because [they] do have such a different perspective. But this has never been encouraged really in the Irish setting."	P11
Pushing and changing slowly	Implementation of evidence	". . . some things are not needed to go in the guidelines but again it takes time for anything to change. But again I think it doesn't matter, it's important to talk about it and to, because things like this are pushing and changing slowly."	P6
		"We have changed practice, we can see it already."	P8
		"that can be the beginning of the adapting or changing the policy."	P9
		"And that's definitely changed practice because now we are bringing it in [Evidence Rounds session on Timing of umbilical cord clamping] [. . .] And we're discussing it and we're aware of it [. . .] And it's coming on the new neonatal guidelines so that's going to be, it was great to have that evidence to know whether we wanted it or not [. . .] The progress and the changes will be slow but the awareness is there, it's just sitting down to actually get the work done."	P7
		"I think it gives you idea to, you know, change the practice but it will not straight away . . . once you . . . have some audit or something because we would change the practice. . . So that Evidence Round will give you a thought and then you can take that point and then you can . . . change the the recommendation and the practice"	P5
		"we haven't changed too much."	P12
	Writing and updating clinical practice guidelines	"you can't just change practice after an Evidence Round, it has to be put into a guideline before we can, like we can't just say oh we're going to use this drug, that drug and then do it, we actually have to have it in the guidelines. . . It's gonna [sic] take time to do the guideline out and you know they have to go to guideline meetings then and then after that it will be put into practice. So it's not going to be overnight that the practice will be changed. But it will be eventually."	P3
		"people setting the guideline for the hospital are the one who should really attend. Otherwise we would just be speaking about the evidence without applying it to our daily practice."	P13
"if you really want to change your practice and have a result from it then it has to come into your guidelines."		P6	

Communication and Dissemination of Information

This domain included two themes; modes of delivery and communication and dissemination strategy considerations. We asked participants questions to gain insight into their preferred modes of delivery when receiving communications and disseminated information. HCPs agreed that posters displayed in appropriate hospital areas were effective at drawing attention to upcoming sessions. The use of email to communicate information about Evidence Rounds elicited diverse responses from participants. For individuals who spent at least part of their working day with access to a computer or mobile phone and had a work email address, this was a convenient way to receive information. However, it was not an effective way to reach others such as staff midwives who were more clinically based and either were not issued with, or did not regularly access their professional email accounts. Not all participants used the Evidence Rounds website but those who did, found it accessible and an easy way to retrieve and refer others to past presentations. One participant found the critical appraisal tool links useful to prepare for their presentation. For one healthcare professional who limited their engagement with technology, the website was not a suitable medium. Participants had mixed opinions about the use of text messaging and other mobile messaging technologies such as WhatsApp. On one hand, they acknowledged that they were a means whereby information could be communicated to the intended receiver in an easy and direct manner. On the other hand, many staff voiced concerns that work-life boundaries might be violated or feared that they might be bombarded with messages particularly when they were not working. Many of the HCPs were involved in shift work, which compounded their concern regarding this issue. Word of mouth was a popular method among staff to encourage their colleagues to attend sessions. Multiple reminders and reminders on the day of the sessions were viewed as having a particularly positive impact on attendance.

Table 4.04 Themes and sub-themes likely to explain responses to questions about communication and dissemination of information

Theme	Sub-theme	Sample Quote	Participant
Modes of delivery	Posters	"The laminated posters definitely for me were excellent because when you're busy in the clinical area they stand out on a notice board to you."	P2
		"the posters are good as well. A lot of people are very visual in terms of taking in information. And if they can see something they go, oh right okay yeah, yeah I must remember to go to that meeting. I think a printed sign is useless. I think you need to have some kind of a picture on it. Because people are drawn to images and pictures and bright colours."	P12
	Email	"it's different if, for some staff like us, we're emailing all the time with work so our emails are coming through to our mobile phone. But the nurses that wouldn't be the case, they wouldn't have personal emails for work. So they're not going to get them."	P7
		"I think email is probably the number one way of communication with people nowadays."	P10
		"it's trying to reach them appropriately because emails . . . to the wards only goes to the managers. So it's how good they are at sharing information and or prioritising it"	P11
	Website	"was great and it's very, it's lovely, it's a very easy to use and easy to navigate website so yeah I found it useful (. . .) it was good to see the other talks and I kind of would just have a little look through again."	P11
		"I think it's a really good go to place, a good repository then just to access the information."	P12
		"I think it's fantastic what you put about analysing articles . . . I would think you know oh my god, what is this, what is important in this or not? So I think this is very, very nice and useful that you put it that way yeah."	P6
		"I would not be a typical person . . . because I am not really the most enthusiastic researcher."	P9
	Word of mouth	"I think to be honest for me as a practitioner trying to encourage people to attend, going around on the day and reminding people was the thing that actually worked the best."	P11
		"I think word of mouth, you can't beat it. And at our education sessions over the last while, we say don't forget the next topic is on [. . .] word of mouth is really hard to beat if you have the time."	P1
	Mobile technologies and work life boundaries	"And then you'd only get interested people, but that would be good, that would be a start and then try, because everyone might get fed up if you text them all the time."	P8
		"one of our professional issues we set for ourselves is no use of mobile phones in the work place."	P2
		"I think there needs to be very strict boundaries within which WhatsApp would work. I think your group is going to constantly change. So you may be missing out people who would otherwise attend it. You may be constantly texting people who may need to be removed from the group [. . .] some people get very annoyed if they're on a day off, or if they're not working a shift and they're constantly getting these alerts."	P12
		"you have to be very careful or they'll opt out very quickly." [WhatsApp groups]	P7
Communication and dissemination strategy	Multiple reminders	"unfortunately, some medical people, like kids you really have to push them and nag them to get something, you know who is going to present? Who is going to present? Who is coming? Who is coming?"	P9

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Theme	Sub-theme	Sample Quote	Participant
considerations		“And we kept, at any meetings we had we kept saying the next topic is on make sure you’re on that day. And in the morning beforehand, going around saying don’t forget now, make sure you go to that today.”	P1
	Organisational issues	“that’s one of the great challenges, it is within our organisation, to try and share information.”	P11
	Multiple formats	“I think you can’t really do it just one particular way.”	P12

Sustainability

This domain included two themes; staff engagement and collaboration and individual and departmental influences on sustainability. HCPs identified a number of factors key to the sustainability of Evidence Rounds and similar initiatives after the support of the KT professional would be terminated. Staff representatives from both the neonatal and obstetric units would need to take ownership and assume responsibility for administrative tasks such as planning and scheduling the meetings. Some participants viewed champions as essential for sustainability. Two participants believed that there needed to be a dedicated person whose job it was to oversee education and another thought their role should include developing clinical practice guidelines.

All participants remarked positively on either or both of the interprofessional and multiple disciplinary aspects of the initiative. One individual believed that senior level staff from one discipline were more invested in keeping it going than those from the other discipline and worried about the impact of this. There was a sense that it was not always easy to come up with topics of simultaneous interest to midwifery, neonatal and obstetric departments. Evidence Rounds was just one of many educational opportunities open to staff during their working week. Taking into consideration the already busy workloads of the healthcare professionals, it was not easy to find staff to volunteer to take on the extra responsibility required to keep it going. Buy-in from senior level staff and having a consultant run the sessions were considered factors that might encourage staff to attend. Rotating presenters and dividing tasks between a team of three was a means of keeping the workload associated with presenting at a manageable level.

Assigning a HCP to pre-schedule the sessions for the coming year was suggested by multiple participants. Participants mentioned the need for involving someone with experience in performing systematic literature searches and to provide additional support to upcoming presenters.

Table 4.05 Themes likely to explain responses to a question about the sustainability of Evidence Rounds

Theme	Sub-theme	Sample quote	Participant	
Staff engagement and collaboration	Need for opinion leaders and champions	"it needs to have an obstetric lead and a neonatal lead. I think it really needs both of them."	P11	
		"it would up to them to organise with the junior staff then. And what I mean by junior staff is the junior doctors and the nursing staff as well. That they would have to participate at some point in time. And so getting people, but you do need a designated go to person in that particular area. To design the scheduled meetings and to fix them in the calendar."	P12	
		"you need a champion who hooks up with people here who are permanent staff, who are interested in providing this educational session."	P10	
		"You'd have to identify champions within the unit really because it will never continue otherwise."	P2	
		". . . we need to have somebody, in my opinion, whose total, total role is looking at evidence and guidelines and producing that so that practitioners can change practice or you know develop guidelines for practice."	P1	
		"if you have people whose job, whose professional role is to provide education, it works well. We are lacking that type of person on our end of things. So that's why they often, these things run for a period of time and then they just kind of fall apart."	P10	
		"It needs a leader. . . . to push it and to support each time. And to do the searches and to support the staff."	P11	
	Buy in from senior level staff		"I'm not too sure that they're attending or they understand the importance or they're kind of, that the managers kind of see it as an important process (. . .) It really needs to start the high up. And if we could get the buy in from both of them and then they encouraged their teams, it would certainly be a lot more effective."	P11
			"If it's run by the consultant, people would attend even more."	P13
	Interprofessional and multiple disciplinary approach		"the biggest thing I got out of it was the multi-professional involvement because we do a lot of our training and updating ourselves in separate capacities, even though yet we work together to care for the woman, the one woman in front of us. But we're coming at different angles all the time. So I think it's hugely important to bring it forward and even incorporate it in more and more of our training. That we're working together, we're updating our skills together, we're training together. And as a result, we're caring for the woman together."	P2
			"And it was such an involved group as well, you know a diverse group. Usually when we'd have something, it might be just the nurses that are there, everybody was attending. . . . The CNMs, the nurses, the doctors, the regs, so I thought that was good."	P4
			"it's a whole team approach, you know and it is good."	P8
			"I feel that's because none of the consultants from [department X] got really behind it. And I think the [department Y] would be quite happy to take it as their baby and run with it basically. And that's a huge problem that would be a huge problem because there is no baby without having all the services involved."	P11

Theme	Sub-theme	Sample quote	Participant
		"The only problem is to find a common topic with the obstetricians."	P9
Individual and departmental influences on sustainability	Skills and knowledge to access evidence	"if you haven't got help with someone doing the literature searching that's a lot that's a big part of the work, so to try and get that done every month will be hard, on our own."	P7
		"It needs a leader. . . . to push it and to do the searches and to support the staff."	P11
		"you had researched the papers and given them to them beforehand. That was good as well. I think it made the, their job a little bit easier. But also my question would be if they were presenting Evidence Rounds in the way they were presented, would they have known where to go to access these papers that you gave them? Or would they have known how to access them? So if individuals were left to their own devices to carry on with Evidence Rounds. Without the various reviews being supplied to them, I don't know that they would actually know where to go to. And maybe I'm completely wrong. You might get a more limited number of articles presented."	P12
	Competing with clinical workload and other educational sessions	"And you can see the difficulty in trying to get the volunteers to kind of do the work. Because its work for them, you know I mean there is an effort required. And you know they already have plenty of work to do. And then you know this is an additional task for everybody (. . .) there are so many education sessions, it's very difficult to you know squeeze another one in. So you know it's a challenge I think just to keep people interested and keep them going, yeah hard work."	P10
		"the [department z] site has few people turn up, it's also they have their Friday lunch time meeting with free lunch as well."	P9
	Maintaining interest and subject saturation	"the enthusiasm for these things wax and wane depending on who the staff are. And then you run out of topics to some degree as well. You know you do all the good ones and the big ones initially. And then as time goes on then people are really scraping the barrel to look for things."	P10
		"It's necessary and we have to keep on doing it. To know if we are doing it right or not and compare our self and our practice to the, to everyone else"	P13
		"I thought what worked well was when we, at the very end we were very clear, from the get go that we said at the end of this we want to have presenters for the next rounds and have decided a topic. I think leaving it creates just too much space. And unless you get people to commit. I think that just doesn't work great."	P11
		"I think new projects are always great. Sustainability is one of the big problems. And keeping people motivated."	P12
		"just in terms of topics, keeping that going will be hard, that momentum will be hard. Yeah, probably doesn't need to be every month."	P7
Rotation of presenters		"I think if it was the same people presenting all the time, it would be a lot of work on the same people. If it was divided up equally then I think it would be good."	P3
	"if it was again, like a rotationAnd it should alternate and people have to do it. That will make it I think more regular and people probably will have to do it. It's not an optional thing, it's a mandatory thing."	P13	

Theme	Sub-theme	Sample quote	Participant
	Scheduling and frequency	"there's a schedule and there's time frames for people to meet, I think once that's written into the yearly schedule of events, I think that people will participate in it"	P1
		"you would know in advance that you're going to have these meetings on the set Fridays in the year. . . . you do need a designated go to person in that particular area. To design the scheduled meetings and to fix them in the calendar."	P12
		"Yeah, probably doesn't need to be every month [. . .] we will run out of topics at this tempo"	P7
		"Because you know it's a busy place, always people have their own own jobs to do, their own lives to do. So if they don't have a schedule to do it . . . then it's going to disappear if you don't have a person who is going to take care of it."	P6

DISCUSSION

This study sought to identify the barriers and facilitators to attending and presenting at Evidence Rounds. Our study demonstrated that attendance levels at Evidence Rounds were determined by the availability and workloads of staff, the organisational climate, the attendance of others (colleagues and senior-level staff), level of interest in the topic and extrinsic factors such as certificates of attendance and continuing education units from a professional body. Our findings agreed with evidence from other studies that the provision of refreshments may be associated with increased HCP attendance at educational events (Cosimini 2016; Segovis 2007). Staffing issues also influenced decisions to present at Evidence Rounds. Even though evidence was presented by 3 HCPs per session, a lot of preparatory work was required from each individual. Another important finding was that some staff were motivated by a strong interest in the topic, a need to set an example for less experienced HCPs or the desire to experience presenting in this unique initiative. Our study found multi-dimensional factors that can be both barriers and enablers to different individuals, at different times and under different circumstances. For example, an individual's level of self-confidence in presenting in front of others could either encourage or discourage potential presenters from taking part. We wanted to improve our understanding of HCPs' perspectives of Evidence Rounds as a dissemination strategy. We asked multiple questions to gain insight into their preferred modes of delivery when receiving communication and disseminated

information. One important finding is that participant feedback did not identify a single mode of delivery of information that would have engaged all staff. Therefore, our decision to employ a multi-component strategy was appropriate for our target population despite a lack of evidence that this is the most effective approach (Squires 2014; Suman 2016).

Finally, we asked HCPs about their perceptions of the sustainability of Evidence Rounds and how they would make future initiatives more sustainable. Sustainability is difficult to measure (Rabin 2016) so our qualitative approach allowed us to gain an understanding of context to help others select appropriate strategies during implementation to improve sustainability. Qualitative studies can provide valuable insights into contextual factors and intervention features which influence the success of KT interventions (Yost 2015). Perhaps the most striking finding is the influence of resources and particularly the HCPs themselves, on sustainability. Their availability, schedules and workloads, level of interest and motivation, the engagement of senior-level staff and their willingness to lead and become champions for initiatives were hugely important factors. These results corroborate suggestions that behaviour change theory may be useful to positively impact implementation processes.

Overall, our study findings were consistent with a mixed methods study also conducted in Ireland, to reach consensus on priorities for clinical learning environments for postgraduate medical education (Kilty 2017). Among the most important domains identified by participants in that study were: support for residents; opportunities to learn with senior doctors; engagement in clinical teams; organisational and working conditions.

Strengths and Limitations

Evidence Rounds was an example of pragmatic, community-engaged dissemination and implementation research (Holt 2017; Blachman-Demner 2017) in which the community is the target population of HCPs. It came about because key stakeholders within our target audience approached staff at the National University of Ireland,

Galway having identified a need for support in translating research evidence into practice. One of our authors (AC) was recruited as a PhD student to take on this project as a part of her PhD research, having had experience of implementing Evidence in Practice Groups with HCPs as part of CEBIS in the UK. The key strength of this study is the rich data from our focus groups and interviews, which provides context and contributes to the development of evidence about HCP perspectives on the implementation of KT strategies. Research has consistently shown that contextual factors in a given setting play a large role in the success or failure of these types of activities. We employed qualitative methods of research as a means to gain understanding of interactions between individuals, organisations and their unique contexts (Novotná 2012). The key finding of studies that have undertaken process evaluations is not only the significance of contextual factors but the fact that they can often have the most significant impact on the intervention (May 2016). This information could be used to generate insights that decision-makers can use to plan, develop and implement their own initiatives. Notwithstanding, this study has some limitations. Despite our best efforts, recruitment of participants was low. Several factors could have attributed to this for example, the department where most staff worked was above capacity during the period when the focus groups were held. Nevertheless, one-to-one interviews were offered as an alternative.

It is not clear whether our participants were a representative sample of the population. More than half had presented or were involved in the co-design or implementation of the initiative. Therefore, this group may be more invested in Evidence Rounds than other potential participants. We did not capture the perspectives of healthcare professionals who did not attend Evidence Rounds. The inclusion criteria for our study specified that participants must have attended at least one group session.

Another limitation of the study is that the main researcher who implemented the initiative also moderated the focus groups and interviews and was involved in analysis and interpretation. Participants may have felt reluctant to share negative perceptions. To address this concern, at the start of each interview or focus group we emphasised that both positive and negative feedback was being sought to

continue the initiative and make it more effective or to make recommendations for future initiatives.

In one systematic literature review, the authors reported that a timeframe of two or more years is required to examine the sustainability of evidence based interventions (Wiltsey-Stirman 2012). Tricco and colleagues (2016) reported that the KT interventions included in their scoping review focused on sustainability ranged from 61 to 522 weeks (Tricco 2016). Our initiative was implemented over 9 months so this timeframe may not be adequate for optimal conditions to ask participants questions about sustainability.

Another limitation of our study is that we did not use theory in our investigation of barriers. The use of a validated tool such as the Theoretical Domains Framework [Michie 2005; Atkins 2017; Cane 2012) would have allowed us to map our barriers to pre-specified behaviour change domains.

Implications for Research and Practice

Further research might explore how to leverage social media platforms to effectively communicate and disseminate evidence to a targeted population. Evidence Rounds was an initiative for HCPs in Ireland, which is classified as a high income country (World Bank 2017). Questions remain as to how the perspectives of health care professionals working in low and middle income countries might differ from those of our participants. Another important issue for future research is to determine how to integrate the values and preferences of patients, carers or the public, into initiatives like Evidence Rounds to inform and improve the decision-making process (Kelly 2015). Further, our findings may have implications for the understanding of how behaviour change theory might be used to optimise initiatives and strengthen capacity to improve the implementation of evidence.

The findings of this study uncovered a number of important points to inform individuals planning, developing or implementing initiatives aimed at HCPs. We encourage others to consider interprofessional and multiple professional/disciplinary platforms for these types of initiatives as this approach was valued highly by staff.

Those planning similar initiatives may consider multi-component strategies. Our HCPs found more benefit relating to the provision of patient care in group sessions focusing on the best available evidence than on previous events like journal club which critically appraised single articles. Effective communication and dissemination aimed at HCPs requires careful consideration of a number of factors including the mode of delivery, scheduling, frequency, and organisational, departmental and individual-level preferences. Feedback during implementation from the target population may guide decisions to maintain, remove or modify aspects of the strategy. Others implementing similar initiatives may consider factoring in the provision of support and training for presenters who need help with critical appraisal, data presentation, statistical inference etc. The development of a plan for presenters and attendees would be ideal to build organisational capacity. Our health service staff did not feel that they have the skills to perform adequate searches on clinical topics or questions. Like other authors, we recommend the involvement of information specialists, librarians or individuals with experience of designing and conducting search strategies (Klerings 2015). We also recommend involving and collaborating with guideline developers to increase the likelihood of implementation of research findings.

CONCLUSIONS

We set out to identify barriers and facilitators to attending and presenting at group sessions from the perspectives of HCPs, to gain an understanding of their views of Evidence Rounds as a dissemination strategy and to generate insights to improve the sustainability of future initiatives. The results of this study and our analysis have extended our understanding and may be useful for guiding the development and implementation of future KT strategies for HCPs. Although each individual, population and organisation has a unique context, and HCPs invariably work in complex systems, this paper may help others to understand factors that can impact the implementation of initiatives to disseminate key research findings and promote evidence informed practice.

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CHAPTER 5: DISCUSSION AND CONCLUSIONS

DISCUSSION

This research explored the potential of two methods of disseminating and translating evidence: ‘Summary of findings’ tables; and a multicomponent strategy. In this chapter, I draw together the principal findings from Chapters 2, 3 and 4 and discuss them in relation to current literature in the field and each other. I examine the strengths and limitations of the work and finally, explore implications for clinical practice and future research in this area.

Summary of key findings and thesis contributions

The aim of this PhD research was to extend the existing body of literature on dissemination, implementation and KT, by exploring methods of disseminating and translating research findings to HCPs and other stakeholders. This was achieved by addressing five objectives.

Objective 1: to assess studies of the effectiveness of ‘Summary of findings’ tables for communicating key findings of systematic reviews of healthcare interventions

The systematic review in Chapter 2 was developed from a published protocol (Conway 2017- see Appendix 2.1) written during the course of this PhD. To my knowledge, it is the first systematic review to assess studies of the effects of ‘Summary of findings’ tables as an intervention. The review provides a narrative synthesis of results from three trials. The first of its two comparisons is based on data from two small studies reported in a single article (Rosenbaum 2010), which compared systematic reviews with ‘Summary of findings’ tables to systematic reviews without ‘Summary of findings’ tables. There was low to very low certainty evidence for intervention effects across all outcomes. The studies found that only one outcome, user understanding, may be improved slightly by the inclusion of a ‘Summary of findings’ table with a systematic review when compared to a systematic review alone.

In the second comparison, for which one study was identified (Carrasco-Labra 2016), two versions of ‘Summary of findings’ tables with different content and formatting

were compared (see Chapter 2 for a description of how the tables differed). The new version was found to probably improve user understanding and accessibility of the key findings of systematic reviews when compared to the current one (moderate level evidence).

Other summarisation products derived from systematic reviews have shown promise at translating findings to users. In a randomised trial involving 193 members of the public, Santesso (2015) compared two versions of plain language summaries and found that one improved participants' understanding and was more preferable to users. Like our comparison of two 'Summary of findings' tables, this trial demonstrated that making the message of the summary clearer through content and formatting modifications can positively impact user outcomes and so, careful consideration should be paid to presentation. A systematic review by Petkovic (2016) assessed the effects of systematic review summaries on policymakers and health services managers. The authors included three trials with 455 participants relating to 'Summary of findings' tables. Only one of those trials met the inclusion criteria for my systematic review in this thesis (Carrasco-Labra 2016), and its effects were discussed in Chapter 2. The other two trials included by Petkovic featured interventions that did not meet the inclusion criteria of my systematic review.

Objective 2: to plan, design and implement a multicomponent, evidence-informed, theory-driven initiative, called Evidence Rounds, to disseminate and translate evidence, and promote implementation and evidence-informed practice

Previous research has demonstrated the value of evidence-based practice in hospital settings. Emparanza (2015) established an evidence-based practice unit at a Spanish hospital, which had positive effects on mortality rates and length of stay. Jernberg (2011) found that adopting evidence-based treatments for ST-elevation myocardial infarction (STEMI) patients at a Swedish hospital reduced mortality. In collaboration and partnership with an implementation team and my co-authors on the report of this study (that has been published), I rolled out and implemented Evidence Rounds at University Hospital Galway between July 2016 and March 2017. This was preceded by a lengthy planning phase, including meeting with key individuals at the

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hospital, choosing the implementation team, developing the website and preparing materials, working with presenters to prepare them for the first group session etc. The first component, group sessions, consisted of a presentation by a team of three HCPs and immediately after, a discussion forum to explore the potential impact of the evidence on local practice. The group sessions were the key feature of the initiative and the focus of all other activities. The second component, a dedicated website, was developed to function as a repository for slides and additional information related to the group sessions. In the third component, I provided support as a KT Specialist to staff including designing and performing literature searches, reviewing presentation slides, helping with the interpretation of numerical data etc. These extra steps reflected the results from Forsetlund (2009), which showed that educational meetings on their own are not likely to change practice. The implementation team, in particular through their roles as champions and opinion leaders amongst their colleagues (the target audience), was crucial to the whole process. If I had not forged productive relationships with these clinicians, changes to clinical practice would have been more difficult to achieve, or may not have happened. In a systematic review, Colquhoun identified four tasks that should be factored in when designing interventions aimed at HCPs for translating research into practice: identifying barriers, choosing components, theoretical considerations and involvement of the target audience (Colquhoun 2017). I considered each of these factors prior to and during the development of my initiative. Bornbaum and colleagues developed a comprehensive list of tasks undertaken by knowledge brokers and performed a thematic analysis that identified three main domains knowledge management, linkage and exchange, and capacity building (Bornbaum 2015). My role in Evidence Rounds involved many of the listed tasks, including identifying and linking with key stakeholders, defining topics and specific research questions, carrying out search strategies, disseminating relevant evidence to stakeholders, helping with the interpretation of research and monitoring the process of implementation. Chapters 3 and 4 provide the first reports of this original initiative, which was devised and evaluated over the course of this PhD research.

Objective 3: to describe the processes, mechanisms and contextual factors involved in the implementation of Evidence Rounds

In the multiple methods paper in Chapter 3, I employed a) Lavis's organising framework for knowledge transfer (Lavis 2003); b) the TIDieR checklist (Hoffman 2014); and c) a process-oriented logic model (W. K. Kellogg Foundation 2004). All these tools made it possible to factor in the contextual influences of the initiative. Ward (2009) has commented that Lavis's framework presupposes successful transfer of knowledge once user needs are met rather than attributing this to the knowledge itself. Ward fails to acknowledge that although Lavis focuses on contextual factors, the nature of the knowledge including its quality and applicability is central to one of the five key questions of his framework: What should be transferred to decision-makers? The 12-item TIDieR checklist (Appendix 3.1) was used to report the processes and mechanisms of the initiative in sufficient detail so as to enable others to reproduce the elements presented. The logic model also facilitated the understanding of our complex initiative and was helpful for visualising how it might work.

Tilson (2014a) similarly described the Physical therapist-driven Education for Actionable Knowledge translation (PEAK) program in a mixed methods study to enable evaluation and reproducibility of its components. There were 148 attendances at Evidence Rounds group sessions recorded on sign-in sheets. For one month before, during and one month after the final session the website recorded 188 unique visitors, 331 visits and 862 page views. These attendance figures and website analytics provide evidence that stakeholders were engaging with group sessions and the online repository.

Objective 4: to capture follow-up data regarding the impact of Evidence Rounds on clinical practice

I followed up with the implementation team at 3 and 16 months after the final group session, to identify actions that had been taken because of the Evidence Rounds. The multiple methods paper in Chapter 3 outlines examples of follow-up data for a

number of chosen topics. The combination of Evidence Rounds and subsequent activities from the implementation team led to multiple changes in the delivery of care to mothers and infants. For example, as a result of the group session on the topic of premedication for non-emergency neonatal intubation, patient medical treatment regimens were changed, and plans for staff training and audit and feedback were put in place. Nonetheless, behaviour change and action were not consistent goals identified in group sessions. For example, in one session covering the topic of medical management of patent ductus arteriosus (PDA) in preterm infants, the evidence confirmed to HCPs that their current practice was aligned with the best recommendations. Importantly, I also asked them to identify actions that had not been taken and barriers and facilitators to those actions. Where actions were desirable but not taken, barriers included time constraints, and a lack of education and skills training. Their identified facilitators included having a dedicated person and protected time to update and implement guidelines, further education and audit and feedback to monitor practice. Barriers and facilitators to change can be characterised by the level at which they occur, such as innovation, individual professional, patient, social context, organisational context and economic and political context (Grol 2004). All the determinant factors identified by the Evidence Rounds implementation team were at an organisational level. In a cross-sectional study by Brown, a survey was used to explore nurses' perspectives of evidence-based practice. The 458 respondents identified the main barriers to evidence-based practice as a lack of time, lack of authorisation to change practice, lack of support from other staff and a lack of awareness of evidence (Brown 2008).

Objective 5: to explore the perspectives of the key stakeholder group (HCPs) who attended or participated in Evidence Rounds, and identify their preferences to inform the development of future initiatives

In Chapter 4, I reported the conduct of focus group and interviews with 13 HCPs. Using *a priori* and thematic development, framework analysis revealed five key domains:

1. Barriers and facilitators to attendance

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2. Barriers and facilitators to presenting
3. Organisational readiness for change
4. Communication and dissemination of information
5. Sustainability.

The focus groups and interviews revealed that stakeholder views of the Evidence Rounds initiative were largely positive with minor criticisms. They provided recommendations for improving Evidence Rounds and future initiatives such as scheduling and frequency, rotation of presenters, maintaining interest and subject saturation.

Tilson (2014b) carried out a mixed methods feasibility study which included focus groups and interviews with 18 physical therapists to explore aspects such as their perspectives, knowledge, skills and self-reported behaviours. Tilson used a modified version of the Classification Rubric for EBP Assessment Tools in Education (CREATE) framework to choose quantitative outcome measures from validated tests such as the Modified Fresno Test, EBP Beliefs Scale, EBP Implementation Scale and the EBP Confidence Scale. Tilson also used the CREATE framework to choose interview questions (Tilson 2011; Tilson 2014b). The focus group and interview questions in this study were developed using McCormack's broad goals for dissemination (McCormack 2013) and additional questions were chosen to identify barriers and facilitators and explore HCP perspectives on sustainability and capacity building. Similar to my findings for the Evidence Rounds, the participants in Tilson's study valued the opportunity for collaboration with colleagues brought about by the initiative.

The research presented in Chapters 2, 3 and 4 explored two different strategies or methods for disseminating evidence to target users and promoting evidence-informed practice. Both methods have the ultimate goal of bridging the gap between research and practice, resulting in the implementation of key findings from high quality research. However, they approach the problem in different ways. 'Summary of findings' tables address the gap via a summarised product of research findings. They could be considered as a dissemination tool or mode of delivery. Like other summaries, they are not meant to be a substitute for full systematic reviews but

they offer an alternative means when for example, available time or workload reduces a user's ability to use lengthy systematic reviews.

Evidence Rounds on the other hand, employed a multifaceted strategy that aimed to present a comprehensive account of the use of the strategy and the context within which it was implemented.

Both single and multifaceted strategies can be used to disseminate research and move evidence into action and there is debate about which approach is superior (Squires 2014; McCormack 2013; van der Wees 2008). Possibly, neither is better because they address different aspects of the challenges associated with knowledge translation.

Thesis strengths and limitations

Strengths

This thesis makes original contributions to the body of KT, dissemination and implementation research. I chose to focus on two methods of disseminating and translating evidence: 'Summary of findings' tables and a multicomponent initiative.

The 'Summary of findings' tables systematic review (Chapter 2) was conducted using well-established methodology from Cochrane and the GRADE Working Group (Higgins 2016; Schünemann 2013). This review was important because it looked for evidence to support the already widespread recommendation for their inclusion in systematic reviews. The chapter highlights the considerable gaps in the evidence and makes recommendations to help drive future research efforts relating to 'Summary of findings' tables.

Evidence Rounds was an evidence-informed, theory-driven initiative centred on active dissemination and the promotion of evidence-informed practice. The initiative was tailored for its target audience and adapted in accordance with their needs, preferences and contextual factors. Certain strengths increased its acceptability to users and promoted adoption of the initiative. For example, our focus group and interview data showed that participants valued greatly the multidisciplinary and

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interprofessional nature of Evidence Rounds, and identified this approach as beneficial and desirable for future initiatives. According to the HCPs, the group sessions acted as a platform for staff to interact with each other in a way that would not typically happen. In addition, the systematic and transparent approach to searching the literature and screening evidence served to enhance the acceptability and bolster the credibility of the research presented.

The multiple methods approach in the Evidence Rounds study was a strength and enhanced the reporting of this complex initiative. It revealed additional insights which would not have been evident through the use of a single method. For example, the quantitative data (attendance figures and website analytics) shows the level of engagement that HCPs had with the initiative and qualitative data allowed us to explore HCPs perspectives on issues like sustainability. The methodology used has allowed a deeper understanding of the implementation process and the audience (at individual and organisational levels). This study explored the views of the stakeholder group of HCPs. The focus group and interview data presented in the paper include “raw” quotes to illustrate the views of the participants in an authentic way.

A major strength of Evidence Rounds the study of Evidence Rounds is the impact it has had on clinical practice at the hospital and its potential impact to inform other research. Evidence Rounds was successful in helping to address the gap between evidence and clinical practice. As shown in Chapters 3 and 4, this initiative achieved meaningful engagement with HCPs. At the very least, HCP awareness of official guidance and key evidence on topics chosen by them, was increased. This was reported by participants in our focus groups and interviews (Chapter 4). They also reported that discussion between staff about the evidence and its applicability to service users (women and neonates) continued onto the wards. When judged appropriate, key findings were incorporated into existing or new clinical guidelines and implemented into practice ([see Table 3.02](#)).

This research can impact subsequent research in the field of dissemination and implementation or KT. The Evidence Rounds project contributes to knowledge on the general topic of moving evidence into practice by detailing the experience of

implementing one initiative. Insight into stakeholder perspectives was achieved by focus groups and interviews and tables 1 to 5 in Chapter 3 provide an understanding of the nuanced contexts in which they operate as professionals. Knowledge of factors of concern to HCPs as discussed in the focus groups and interviews may help other individuals and teams plan similar initiatives for similar audiences. My intention was to identify lessons learned rather than present the initiative as a glowing success. There may also be learning opportunities for others in the field to inform the design, development and implementation of future and increase their chances of success.

Limitations

This research should be interpreted in light of certain methodological limitations. I used subjective methods to explore methods of dissemination and translation. In the systematic review (Chapter 2), it was not appropriate to carry out a meta-analysis and the findings from the three included studies were synthesised narratively. All three studies were judged to contain moderate to very low certainty evidence, using GRADE criteria (Schünemann 2013). When compared to the comparisons proposed in our protocol (Conway 2017 – see Appendix 2.1), few interventions, comparators and outcomes were covered and only a subsection of our eligible stakeholders took part in the included studies.

In Chapters 3 and 4, I did not use any validated measures to assess outcomes of the initiative. The development of the Evidence Rounds was theory-driven rather than theory-based. The diffusion of innovations theory (Rogers 2003) was used during the planning, design and implementation of the multicomponent initiative, but the theoretical hypotheses were not tested. According to a framework to categorise studies based on their level of theory use (Davies 2010), my study had some conceptual basis on theory without being based explicitly on the theory. Another limitation was that this thesis did not engage with pedagogical theory to inform the development of the initiative. Evidence Rounds was implemented at a single site at

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University Hospital Galway, so, while it largely worked for the target population, I cannot make inferences regarding the external validity of the initiative.

Evidence Rounds was restricted to six group sessions and a short implementation period of nine months, which is not long enough to warrant the evaluation of medium to longer term impact such as their knowledge and skills in relation to evidence-informed practice or improved health outcomes for women and infant service users. It is also unlikely that this was of sufficient duration to allow for the initiative to realise its full potential, become fully integrated or adopted by staff that Rogers (2003) might categorise as late majority and laggards. In this way the potential of Evidence Rounds to demonstrate sustainability may have been restricted. Further, while the initiative is likely to have increased the awareness of our target audience of evidence on topics covered in group sessions, we did not perform pre- and post-testing of their knowledge. In addition, the number of unique visitors recorded using website analytics may be inaccurate because the same individual could potentially access the website multiple times using more than one IP address or computer. This would have resulted in them being counted as more than one user. Conversely, multiple individuals could access it using the same computer or laptop leading to an underestimation of this number. Also, the information presented in Table 3.02 regarding follow up lacks quantitative measures of practice changes following the educational sessions, compared to prior practice.

In the study reported in Chapter 4, focus groups and interviews were conducted with a small sample of only 13 HCPs. The tables presenting direct quotes from participants provide a comprehensive account of first-hand user experiences of the initiative. I did not use behaviour change theory such as the theoretical domains framework (Michie 2005; Atkins 2017) to investigate barriers and facilitators to attending or presenting at Evidence Rounds group sessions. This could have led to further identification of areas that may need to be overcome, for example with regard to attendance and sustainability. In addition, this could have led to the use of a framework such as the behaviour change wheel (Michie 2011) to categorise and make recommendations for the design future initiatives according to the identified barriers and facilitators. The use of behaviour change theory may also have

increased the potential of the initiative to be generalisable to other knowledge translation strategies implemented by other researchers. Nevertheless, a framework approach that incorporated thematic analysis meant a more inductively driven analysis.

Perhaps the greatest limitation of the Evidence Rounds initiative was not involving service users or members of the public. Although HCPs were the target audience and exclusive focus of the initiative, service user values and preferences are an essential part of evidence-informed practice and the application of the evidence to address this aspect was left to the discretion of the HCP rather than integrated into the initiative.

Implications of the PhD research

In this section, I discuss the ‘Summary of findings’ tables (Chapter 2) and Evidence Rounds (Chapters 3 and 4) research separately, starting with their implications for clinical practice and moving on to their implications for researchers and future research.

Implications for clinical practice

The findings of the systematic review in this thesis may help increase practitioners’ awareness of ‘Summary of findings’ tables and their key features. The findings may also show the potential of these summaries as tools to facilitate the use of evidence from systematic reviews and thereby, promote evidence-informed practice. I advise HCPs to consider their use in combination with full systematic reviews of healthcare interventions where possible.

Partaking in initiatives outside of more commonly-offered educational or knowledge translation opportunities (such as journal clubs) may promote evidence-informed practice to HCPs. Evidence Rounds was a novel strategy and, in a short time, contributed to several changes to clinical guidance and practice in the hospital setting. Similar to other projects, our research shows the potential benefits of evidence-informed approaches on patient care (Emparanza 2015; Jernberg 2011).

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I would encourage clinicians to engage individuals with KT experience (including those from other disciplines or non-clinical backgrounds) to boost their implementation efforts. Taking into consideration the time-intensive workload involved in implementing these complex interventions, busy clinical teams may benefit greatly from the knowledge and skills (and potentially the time) these individuals can offer.

Clinical practitioners should not expect initiatives to result in rapid changes. My follow up with the implementation team at three time points revealed that smaller changes happened early and more substantial changes were evident later.

Evidence Rounds had implications for clinical practice relating to the following six topics that are discussed in detail in Chapter 3:

1. Premedication for non-emergency neonatal intubation
2. Timing of umbilical cord clamping
3. Medical management of patent ductus arteriosus in preterm infants
4. Antenatal screening for Group B streptococcus
5. Antenatal steroid use for preterm deliveries less than 37 weeks gestational age
6. Fetal blood sampling

Implications ranged from changes in medical and non-medical treatment of patients, to additional screening offered to pregnant women, to no actions required because it was confirmed that best practice was already in place at the hospital. Overall, Evidence Rounds demonstrated the potential benefits of these types of initiatives on clinical practice despite a very short implementation period. The data from the multiple methods study including the focus groups and interviews that capture the perspectives of the HCPs will be disseminated allowing their voices the potential to shape future initiatives for their group or other groups of HCPs.

Implications for researchers and future research

The findings from the systematic review can help inform researchers developing trials to assess 'Summary of findings' tables. The systematic review in Chapter 2

showed that there are many gaps in the literature relating to the effectiveness of ‘Summary of findings’ tables and more research is needed. I propose that researchers should apply the following considerations when planning future research:

1. Study design

I recommend the conduct of high-quality, adequately-powered, randomised trials to assess the effectiveness of ‘Summary of findings’ tables of systematic reviews of health care interventions. Nevertheless, qualitative research would enhance the understanding of user perceptions and experiences, and identification of real barriers to accessing and using SoF tables. Other types of studies may be useful for assessing the effectiveness of ‘Summary of findings’ tables as dissemination tools. For example, a ‘think-aloud user experience’ methodology, where users speak about their experience as they interact with an intervention (Smith 2013) could bring new insights and aid the development of this summarisation product. Eccles (2017) has described how this method can be used to gain an understanding of users’ thought processes in real time.

2. Intervention and comparisons

Trials focusing on the pre-specified comparisons (see Chapter 2) may add to the little that is already known. The analysis of the Carrasco-Labra (2016) study showed that formatting and content of ‘Summary of findings’ tables can impact outcomes. Therefore, special attention should be paid to ensure that these elements align with the needs and preferences of their target audience.

3. Types of participants

Future research should engage different participant groups e.g. service users, healthcare providers, policy-makers, etc. with varying baseline characteristics including levels of information literacy and health literacy. This will enable researchers to a) align the intervention to specific target audiences by exploring how ‘Summary of findings’ tables might be presented to meet their needs and

preferences and b) assess their effectiveness at communicating key findings to specific types of participants.

4. Outcomes

I recommend that trials of 'Summary of findings' tables consider assessing the following outcomes as outlined in the protocol of the systematic review and previous studies:

1. User understanding of key findings of systematic reviews measured by the ability to correctly answer factual questions about the review
2. Self-perceived understanding of key findings of systematic reviews as reported by the user
3. Self-reported influence on decision-making
4. Time taken to read, summarise and extract relevant information
5. Accessibility of the main findings of the review
6. User satisfaction/preferences/attitudes
7. Additional outcomes deemed relevant and of interest.

Arguably, the most important of these outcomes is user understanding. A lack of understanding of key information from 'Summary of findings' tables will negate the importance of investigating other outcomes. Particular attention should be paid to outcome measurements. For example, time taken to read, summarise and extract relevant information may be best captured using online assessments. The one trial in our included studies that addressed this outcome was reliant on participants' self-reported time and this approach to measurement is vulnerable to misrepresentation or miscalculation (Lagersted-Olsen 2014). In addition, research teams designing these trials should take care that they are actually measuring the outcome of user understanding. In the first randomised trial in the Rosenbaum 2010 paper, the researchers unintentionally measured self-perceptions of user understanding rather than actual user understanding. If the outcomes are assessed using online data collection tools, I recommend extensive piloting because in at least one study, the software development tool failed to assign working versions of tables to participants despite preliminary user-testing.

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In future updates of the systematic review, we hope to include the ongoing trials identified in Chapter 2 and any additional trials (if available) that assess the above-mentioned factors. I advise systematic reviewers to consider the inclusion of 'Summary of findings' tables in their reviews of the effects of healthcare interventions where possible.

Although the research presented as part of the Evidence Rounds project was set in the context of the women and children's division at University Hospital Galway, the findings may have implications for a variety of settings. This work may help inform researchers who are interested in conducting research featuring multifaceted strategies to disseminate evidence and translate research into practice in healthcare settings.

I encourage future research to establish a stronger theoretical basis. Firstly, in terms of pedagogical theory, group sessions could benefit from accounting for how knowledge is transferred in an educational context. Secondly, the use of behaviour change theory such as the theoretical domains framework (TDF) will help researchers to identify the underlying mechanism that could lead to change behaviour.

I collected much more meaningful follow-up data at the 16 month post-initiative time point than at 3 months. I recommend allowing sufficient time for the complex process of implementing evidence to occur in complex settings like health services or systems.

The TIDieR checklist in [Appendix 3.1](#) provides implementation practitioners with guidance for a focused approach to developing an intervention and can be completed either at the planning or design stages or iteratively throughout the implementation process (Hoffman 2014).

CONCLUSIONS

This programme of PhD research has made a number of significant contributions to the field of knowledge translation and dissemination and implementation research, particularly in the exploration of 'Summary of findings' tables and multicomponent strategies. In doing so, the pre-specified aim and objectives of the PhD were

achieved. This thesis highlighted significant gaps in the volume and quality of the evidence to support the use of 'Summary of findings' tables and made recommendations to improve future research. This research demonstrates the advantages of studying complex, multifaceted initiatives in relation to their contexts rather than testing strategies and evaluating outcomes that may not be generalisable to other settings.

As researchers, we have a responsibility to stakeholders including service users and HCPs not only to produce high-quality evidence but also to investigate methods and tools to summarise and synthesise the findings. In this way, evidence can reach more people, and the motivation and ability to apply the evidence is increased. Overall, this thesis made a number of significant contributions to the literature on methods of dissemination and translation to research evidence. In particular the research indicates that both single and multi-component innovations have the potential to act as facilitators and address barriers to evidence use. By highlighting gaps in knowledge around these innovations, this thesis further strengthens the need for research to explore approaches, particularly around the issues of design, development and tailoring to target audiences, to increase the likelihood of adoption and evidence use. Knowledge translation or dissemination and implementation science are dynamic and worthwhile fields of research that can lead to improvements in clinical practice, decision-making and policymaking. Although we focused on two very specific innovations, we identified a number of useful implications for clinical practice and future research which could be broadly transferable to research on other innovations, populations or settings. This research, as presented in this thesis, contributes to the knowledge in this field and may be used to inform future efforts to develop and expand the field.

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Chapter 5: Discussion and Conclusions

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APPENDIX 1.1 COPYRIGHT PERMISSION TO INCLUDE FIGURE 1.2

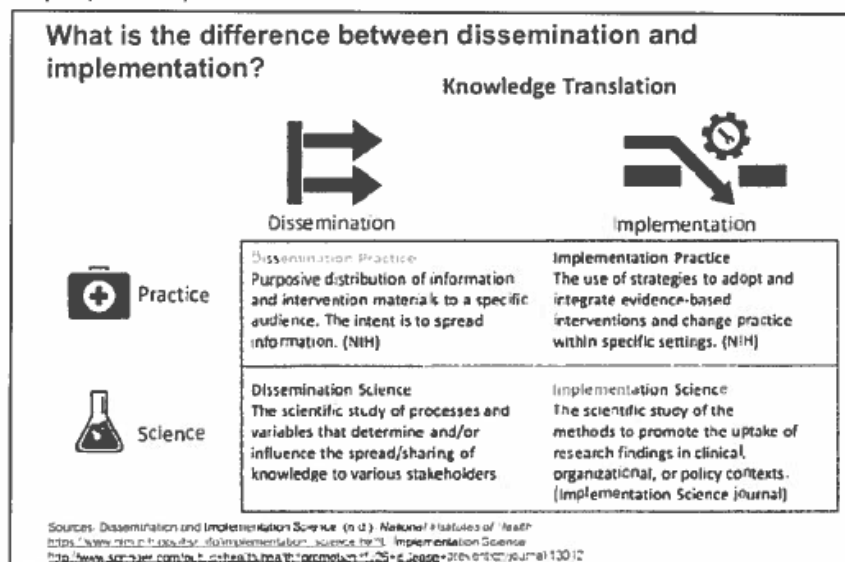
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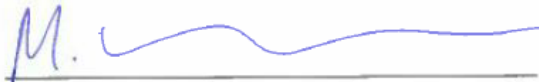
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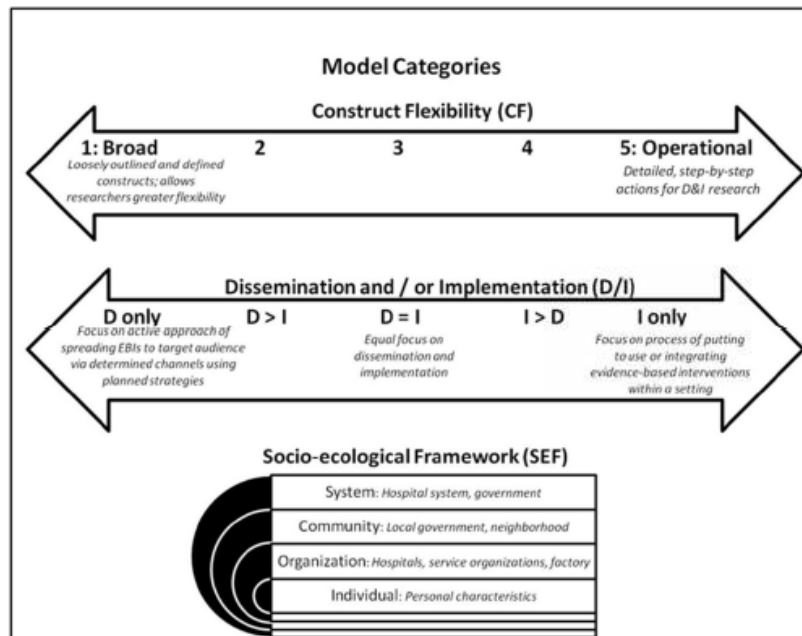
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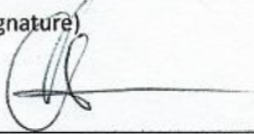
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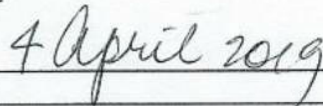
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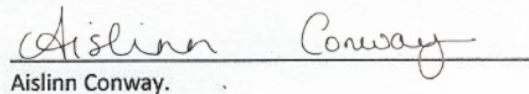
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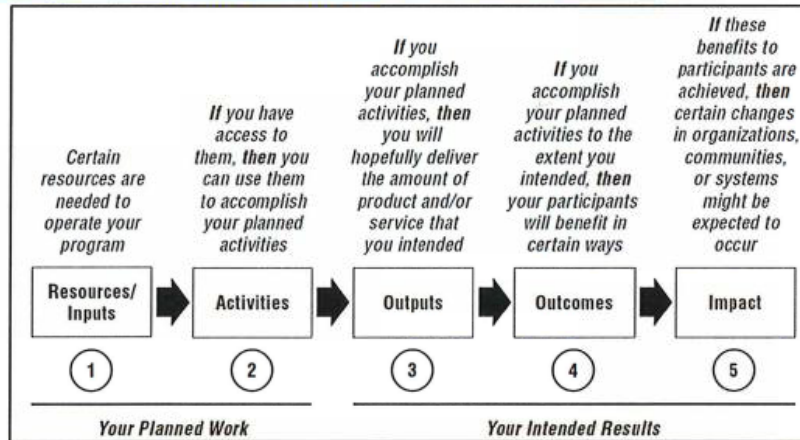
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Aislinn Conway

Date: April 23, 2019

APPENDIX 2.1 SUMMARY OF FINDINGS TABLE (PUBLISHED COCHRANE PROTOCOL)

Conway A, Clarke MJ, Treweek S, Schünemann H, Santesso N, Morgan RL, Darragh M, Maguire LK, Devane D. Summary of findings tables for communicating key findings of systematic reviews. *Cochrane Database of Systematic Reviews* 2017, Issue 2 . Art. No.: MR000044. DOI: 10.1002/14651858.MR000044 .

Background

Systematic reviews of randomised trials of the effects of healthcare interventions are important sources of evidence to inform healthcare decisions (Manheimer 2012). Grimshaw 2012 suggests that systematic reviews and other research syntheses should be the basic unit of knowledge translation. Elsewhere, they have been described as one of the most important tools for getting evidence into practice (Carrasco-Labra 2015). Well-conducted systematic reviews contain the depth of information and optimal methodology to best inform users for the decision-making process (Ganann 2010). The number of available systematic reviews is growing rapidly (Bastian 2010). By October 2016, there were 7066 full Cochrane reviews published in the Cochrane Database of Systematic Reviews (Cochrane 2016). Moher 2007 found superior reporting standards in Cochrane reviews compared with non-Cochrane reviews and Lundh 2009 found that Cochrane reviews were of a higher methodological quality than non-Cochrane reviews. However, despite the quality of evidence offered by systematic reviews, uptake of the main findings can be slow or may not happen (Murthy 2012). Waddell 2001 explored dissemination and uptake problems associated with research evidence, one of which was the increasing volume of available evidence. The overload of information available in print and electronic formats can make it difficult to find answers to healthcare questions about the effectiveness of healthcare interventions. Bastian 2010 counted the publication of 75 trials and 11 systematic reviews of trials daily and highlighted that this number is growing. In a more recent cross-sectional study, Page 2016 counted 682 systematic reviews indexed in MEDLINE in February 2014. This is equivalent to

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more than 8000 each year, or 22 per day. The authors calculated that this represents a three-fold increase on 2004 figures. In a systematic review, Wallace 2012 explored barriers to the use of systematic reviews including; time required to read, the complex nature of their methods and statistics, and lack of user access, perceived usefulness, awareness and training. They identified 28 barriers to the use of research evidence from systematic reviews by decision makers. They divided these barriers into three broad categories: knowledge, attitudinal and behavioural. These factors can have a negative impact on the ability and willingness of potential review users to engage with full versions of systematic reviews. Previous studies exploring information seeking behaviour of physicians revealed the lack of use of current evidence from electronic sources (Dawes 2003; Coumou 2006; Hider 2009). In the systematic review by Dawes 2003, of the 19 included studies, the primary information source for physicians was text sources (textbooks, papers or desk reference) in 13 studies, consultations with colleagues in four studies and electronic sources in one study. It has been recommended that three interventions will improve uptake of systematic reviews: targeted messaging, educational visits and systematic review summaries. In this review, we will focus on systematic review summaries (Wallace 2014). There are several types of summaries of systematic reviews including plain language summaries (clear, concise and jargon-free summaries of the key question and findings of a systematic review (Chandler 2013), GRADE evidence profiles (similar to 'Summary of findings' tables but also featuring a rationale for the quality of evidence rating (Guyatt 2011)), and 'Summary of findings' tables (Guyatt 2008; Manheimer 2012; Carrasco-Labra 2015). 'Summary of findings' tables are a widely-recognised summarisation method. According to the updated Methodological Expectations of Cochrane Intervention Reviews standards, they are recommended as “highly desirable” for inclusion in new Cochrane reviews and in the protocol it is mandatory for authors to put a plan in place for their inclusion (Higgins 2016). Chapter 11 of the Cochrane Handbook for Systematic Reviews of Interventions details how to produce and present 'Summary of findings' tables. They are also increasingly featured in non-Cochrane systematic reviews (Langendam 2013). One mixed-methods study, incorporating a randomised trial and follow-up

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participant interviews, compared providing participants with systematic reviews with and without a 'Summary of findings' table, and 'graded-entry' formats (a 'front-end' summary and a contextually framed narrative report plus the review). There were no differences between groups for the primary outcome of correct responses to a test of key clinical questions on specific topics (adjusted odds ratios (ORs): systematic review with 'Summary of findings' table versus systematic review alone 0.59, 95% confidence interval (CI) 0.32 to 1.07; 'graded-entry' format versus systematic review alone 0.66, 95% CI 0.36 to 1.21). However, graded-entry formats received a higher composite score than systematic reviews alone for their clarity and ease of use (adjusted mean difference (MD) 0.52, 95% CI 0.06 to 0.99). Findings were conflicting with some users finding 'Summary of findings' tables useful for "rapid consultation", while others reported that they were difficult to understand without supplementary information (Opiyo 2013).

Description of the methods being investigated

'Summary of findings' tables are designed to present key findings of systematic reviews in a clear and concise format. The main elements of a 'Summary of findings' table are:

- a description of patient/population/problem, intervention and comparator(s) and all desirable and undesirable outcomes (PICO);
- a description of the study setting;
- the number of participants;
- the number of studies addressing each outcome;
- a measure of the assumed risk in the control group and the corresponding risk in the intervention group;
- the relative effect (risk ratio) or other measures of effect;
- the mean difference or standardised mean difference and confidence interval;
- the certainty of the evidence according to the GRADE classification terms listed in the section 'Summarising and interpreting results';
- a comments section.

Appendices

In this Cochrane review, we will include studies assessing the effects of interactive or static 'Summary of findings' tables as an intervention to communicate key findings of systematic reviews of the effects of healthcare interventions. The interactive format has additional functionality compared to the traditional static version by providing users with an option to view varying depths of information and complexity (DECIDE 2014). We will also include narrative 'Summary of findings' tables where results have not been pooled in a meta-analysis or when units of analysis cannot be compared. These are 'Summary of findings' tables where authors enter a narrative description of the effect of the outcome. The 'Summary of findings' table is evolving in accordance with feedback from users. The GRADEpro Guideline Development Tool (now also called GRADEpro GDT app) is an online software which enables authors of reviews and guideline developers to create their own 'Summary of findings' tables (Treweek 2013). 'Summary of findings' tables can also be created on the Epistemonikos website. More recently, summary of qualitative findings tables have been introduced to summarise the key findings from qualitative evidence syntheses. These involve using the GRADE-CERQual approach to assess the confidence in the evidence for each finding (Lewin 2015).

How these methods might work

The 'Summary of findings' table may have an impact by communicating key findings of systematic reviews of healthcare interventions to patients, healthcare staff, policy makers and other stakeholders by providing a summary with clear information presented in a user-friendly format (Glenton 2006). A recent study found that it is possible for users to understand key findings of Cochrane systematic reviews using summary formats (Maguire 2014). Rosenbaum 2010 conducted a study to design a 'Summary of findings' table for Cochrane reviews that would be useful to stakeholders. They used an iterative process of brainstorming workshops, advisory group feedback and user testing to develop a 'Summary of findings' table. Participants included attendees of a workshop for beginners to evidence-based practice in Norway and, clinicians and research-related professionals from the UK. Most of the changes to the table addressed the issues of usability and usefulness.

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The aim is to resolve “the tension between achieving table precision and table simplicity” (Rosenbaum 2010).

In an unpublished study reported by Langendam 2013, researchers found that the layout of a 'Summary of findings' table for a Cochrane systematic review was clear, helpful for presenting results and increased accessibility of the systematic review. However, these findings related to a very specific participant group made up of members of Cochrane review groups and cannot be assumed to be widely transferable.

Why it is important to do this review

'Summary of findings' tables offer users a reduced volume of information when compared to full systematic reviews based on the same high-quality methodology of the systematic review to support the content. Lavis 2009 highlighted the need for summaries of systematic reviews featuring decision-relevant information. This review will provide a single source of evidence for effectiveness of 'Summary of findings' tables when compared to full versions or summaries of systematic reviews. The potential beneficiaries of this review are systematic review authors because it may provide them with evidence to support the inclusion or exclusion of 'Summary of findings' tables in their reviews. If 'Summary of findings' tables support communication, then this review will also benefit potential users of systematic reviews such as clinicians, guideline developers, healthcare users, policy makers and other stakeholders e.g. charitable organisations, the patient population, the public and individuals or groups who inform them, by providing evidence in a form which allows them to quickly access and understand key findings of future reviews. It may also support these users in making decisions about whether to create 'Summary of findings' tables to disseminate review findings (and potentially other research findings) within their own organisations.

The inclusion of 'Summary of findings' tables in systematic reviews is recommended in publications such as the *Cochrane Handbook of Systematic Reviews of Interventions* (Higgins 2011) and the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) Working Group guidelines (Guyatt 2011; Guyatt 2013a; Guyatt 2013b). This review is timely and important because

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'Summary of findings' tables are commonly used to disseminate the key findings of Cochrane systematic reviews yet there is no systematic review to synthesise the evidence of their effectiveness at communicating review results. Although this systematic review asks a focused question about the effectiveness of 'Summary of findings' tables, it relates to larger problems of healthcare information overload, training requirements for stakeholders in (1) the interpretation and use of statistics and (2) critical appraisal, and (3) the lack of time healthcare professionals have to spend reviewing evidence during decision-making and daily patient management.

Objectives

To assess the effects of 'Summary of findings' tables on communicating key findings of systematic reviews of the effects of healthcare interventions.

This will be achieved by:

- assessing the effects of 'Summary of findings' tables versus full versions of systematic reviews on communicating key findings of systematic reviews of the effects of healthcare interventions;
- assessing the effects of 'Summary of findings' tables plus full review versus full review (no 'Summary of findings' tables);
- assessing the effects of 'Summary of findings' tables versus other summaries of systematic reviews on communicating key findings of systematic reviews of the effects of healthcare interventions;
- assessing the effects of interactive 'Summary of findings' tables versus static 'Summary of findings' tables on communicating key findings of systematic reviews of the effects of healthcare interventions;
- assessing the effects of 'Summary of findings' tables versus other formats of 'Summary of findings' tables on communicating key findings of systematic reviews of the effects of healthcare interventions;
- assessing how particular participant groups e.g. patients, healthcare providers, policy makers, understand and apply the information from the 'Summary of findings' tables.

Methods

Criteria for considering studies for this review

Types of studies

We will consider three types of study design where effects of exposure to 'Summary of findings' tables of systematic reviews of the effects of healthcare interventions on one or more outcome is measured:

- randomised trials;
- non-randomised trials;
- cross-over trials.

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We will follow the Cochrane Effective Practice and Organisation of Care (EPOC) Group definitions of these experimental study types (EPOC 2013a). We will include both published and unpublished studies. We anticipate few randomised trials on this topic because 'Summary of findings' tables are a relatively new intervention. Therefore, we have broadened our inclusion criteria to include the above-mentioned study types to help us determine the potential of 'Summary of findings' tables to communicate key findings of systematic reviews.

Types of data

We will include data from published, unpublished and grey literature comparing standard/static or interactive 'Summary of findings' ('Summary of findings') tables or both, as described by GRADE (Guyatt 2011; Guyatt 2013a; Guyatt 2013b; Agoritsas 2015) with other types of summaries of systematic reviews.

We will include studies that recruit any participant type that uses 'Summary of findings' tables of systematic reviews including: patients, families/carers, healthcare professionals, policy makers, health systems managers, systematic review authors or other stakeholders.

Types of methods

We will include studies that compare:

- the effects of 'Summary of findings' tables versus full versions of systematic reviews on communicating key findings of systematic reviews of the effects of healthcare interventions;
- the effects of 'Summary of findings' tables plus full review versus full review (no 'Summary of findings' tables);
- the effects of 'Summary of findings' tables versus other summaries of systematic reviews on communicating key findings of systematic reviews of the effects of healthcare interventions;
- the effects of interactive 'Summary of findings' tables versus static 'Summary of findings' tables on communicating key findings of systematic reviews of the effects of healthcare interventions.

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Types of outcome measures

Primary outcomes

- User understanding of key findings of systematic reviews measured by the ability to correctly answer factual questions about the review
- Self-perceived understanding of key findings of systematic reviews as reported by the user
- Self-reported influence on decision-making

Secondary outcomes

- Time taken to read summary and extract relevant information
- Accessibility of the main findings of the review
- User satisfaction/preferences/attitudes
- Other outcomes not reported in the protocol whose importance is realised after the protocol is written or when the analysis is done. To address any concerns of bias, a justification of the outcome inclusion will be provided (Kirkham 2010).

Search methods for identification of studies

At least one article has reported that the first evaluation of 'Summary of findings' tables occurred in 2005 (Langendam 2013). Nevertheless, we do not know for certain that 'Summary of findings' tables were not mentioned in the literature prior to 2005. Therefore, we will not apply date restrictions on this search. We will not use language restrictions. A search strategy for PubMed is detailed in Appendix 1 (of this protocol).

Electronic searches

We will run electronic or manual searches of the following online resources:
Electronic databases: the Cochrane Library, the Campbell Collaboration, PubMed, CINAHL, LILACS, Web of Science, SCOPUS, Embase, PsycINFO, Epistemonikos.

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International trials registers such as the Cochrane Central Register of Controlled Trials (CENTRAL), PROSPERO, ClinicalTrials.gov, WHO International Clinical Trials Registry Platform (ICTRP) portal.

Grey literature sources such as reports/dissertations/theses databases and databases of conference abstracts e.g. Cochrane Colloquium abstracts, ETHOS, OpenGrey, ISI Web of Knowledge and websites of key organisations e.g. GRADE, Epistemonikos.

Searching other resources

Reference lists

We will search reference lists of included studies and similar systematic reviews to find additional relevant resources.

Correspondence

If deemed appropriate, we will contact individuals or groups known to have experience or knowledge of 'Summary of findings' tables e.g. researchers, review authors, members of the Developing and Evaluating Communication Strategies to Support Informed Decisions and Practice Based on Evidence (DECIDE) collaboration, GRADE Working Group, and the Cochrane Applicability and Recommendations Methods Group to identify and locate additional resources or studies which have not yet been published or are not readily accessible.

Data collection and analysis

The following methods are based on recommendations described in the *Cochrane Handbook for Systematic Reviews of Interventions* (Higgins 2011) and the Methodological Expectations for the Conduct of Cochrane Intervention Reviews (Higgins 2016). Randomised trials will be analysed separately from the other types of study design.

Selection of studies

Two review authors (Aislinn Conway (AC)) and (Declan Devane (DD)) will independently screen titles and abstracts of all citations identified by searches

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against inclusion criteria based on types of studies, types of interventions and participants. The citations will be sorted into the following groups; 'include', 'full-text review' and 'exclude'. Both authors will review full versions of papers where it is unclear whether prespecified eligibility criteria have been met. If, after discussion, there is still disagreement regarding study selection, a third review author (Mike Clarke (MC)) will be provided with a full-text copy of the article for comment and judgement as to whether to include. Reference management software will be used to import all references from databases and other print and electronic sources into a single place accessible to authors.

Data extraction and management

Two review authors (AC and DD) will independently complete tailored data extraction forms for each of the studies. We will discuss discrepancies and if resolution is not reached, we will consult a third author. Items extracted will include the following.

- Authors
- Year of Publication
- Language
- Setting
- Country
- Study design
- Participants:
 - Professional or non-professional group e.g. patients
 - Level of experience using 'Summary of findings' tables
- Intervention:
 - Characteristics of intervention e.g. format, timing, setting
- Comparison:
- Details of comparison intervention
- Outcomes:
 - User understanding of key findings of systematic reviews measured by the ability to correctly answer factual questions about the review

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- Self-perceived understanding of key findings of systematic reviews as reported by the user
- Self-reported influence on decision-making
- Time taken to read summary and extract relevant information
- Accessibility of the main findings of the review
- User satisfaction/preferences/attitudes
- Length of time during which outcomes were measured after initiation of the intervention
- Whether follow-up occurred, if so, length of follow-up and follow-up points
- Data to assess the risk of bias of included studies e.g. sequence generation, allocation concealment, blinding of study participants and personnel, blinding of outcome assessors, withdrawals or incomplete outcome data, selective reporting or other sources of bias
- Funding sources.

Assessment of risk of bias in included studies

Two review authors (AC and DD) will assess the risk of bias for each study independently. We will use the criteria described in the Cochrane 'Risk of bias' criteria (Higgins 2011) and in section 6.4 of the Data Collection Checklist (EPOC 2010) for randomised trials and the Cochrane EPOC Review Group guidance on risk of bias criteria (EPOC 2015) and the Cochrane EPOC Review Group guidance (EPOC 2013b) if our review includes more than one study design. Our inclusion of non-randomised studies brings a greater potential for bias (Higgins 2011). We will contact study authors when information is missing or if clarification is required. Two review authors will apply the 'Risk of bias' criteria to each study independently and differences will be resolved by consulting a third review author (ST).

The following criteria are recommended for randomised trials (RTs), non-randomised trials (NRTs) and cross-over studies.

Selection bias: Random sequence generation

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The rules for allocating interventions to participants in the studies will be reported so that we can identify whether there is a risk that 'Summary of findings' tables groups and comparison groups may not have been comparable. We will base our judgements on the following criteria.

For randomised trials:

- if sequence generation is truly random (e.g. computer generated random assignment): low risk;
- if sequence generation is not specified and we are unable to obtain relevant information from study authors: unclear risk;
- if there is a quasi-random sequence generation e.g. alternation: high risk.

For non-randomised trials: high risk.

Selection bias: Allocation sequence concealment

Prior to the assignment of interventions to participants, steps should be taken to ensure that knowledge of the allocation sequence is not possible. Studies will be deemed at low risk if they used:

- opaque, sequentially numbered envelopes which were opened sequentially and not re-assigned;
- central randomisation by a third party.
- If the allocation concealment is not specified and we are unable to ascertain whether the allocation concealment was protected before and until assignment, the study will be considered as an unclear risk.
- Non-randomised trials and studies which have inadequacies in their allocation concealment, e.g. if non-opaque envelopes were used, will be considered at high risk.

Performance Bias: Blinding of participants and personnel

It will not be possible to blind participants or personnel to the intervention to which they have been assigned because of formatting differences between systematic reviews, 'Summary of findings' tables and other summaries. Therefore, risk of bias for performance bias will be judged as high risk. Under certain circumstances, it may

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be possible to blind for comparisons of different formats of 'Summary of findings' tables. For example if two static 'Summary of findings' tables are being compared. However, without a detailed description of this to allow assessment, risk of bias will be judged as high risk.

Detection Bias: Blinding of outcome assessors

We will judge the risk of detection bias for studies based on whether the assessors have knowledge of the intervention received by participants, using the following criteria:

- if subjective outcomes were not assessed blindly e.g. self-perceived understanding of key findings of systematic reviews (as reported by the user): high risk;
- if outcomes were assessed blindly: low risk;
- if objective outcomes were not assessed blindly e.g. open-ended questions in user understanding of key findings test: low risk;
- if we cannot ascertain whether assessors were blinded and study authors do not provide information to clarify: unclear risk.

Attrition Bias: Incomplete outcome data

We will explore whether withdrawals or incomplete outcome data due to exclusions or attrition may have occurred in randomised and non-randomised studies (including cross-over trials). We will also investigate the spread of missing data across groups.

The risk of this bias will be judged using the following criteria:

- if 20% or more of the data are missing or if the missing data are not equally spread across groups: high risk;
- if less than 20% of the data are missing and are spread equally across groups: low risk;
- if the percentage of missing data or the spread of missing data are not clear: unclear risk.

Selective reporting bias

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We will investigate whether all outcomes mentioned in methodology sections of randomised and non-randomised studies (including cross-over trials) are reported in results sections. We will assess this using the following criteria:

- if all outcomes in the methodology are not reported in the results or if outcomes reported in the results were not listed in the methodology: high risk;
- if outcomes specified in randomised trial protocols *a priori* are not reported in the results or if outcomes reported in the results are not listed in the protocol: high risk;
- if outcomes are only partly reported in the results or if an obvious outcome is not mentioned in the study: high risk;
- if all outcomes are both listed in the methodology and reported in the results: low risk.

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Other potential sources of bias

We will assess the randomised and non-randomised studies for other potential biases (e.g. recruitment bias: imbalance in patient characteristics) using the following criteria:

- If there is one or more important risks of bias e.g. flawed study design: high risk;
- If there is no evidence of other sources of bias: low risk;
- If there is incomplete information regarding a problem which may lead to bias: unclear risk.

We will further assess cross-over trials using the following criteria outlined in Section 16.4.3 of the *Cochrane Handbook for Systematic Reviews of Interventions*:

- suitability of the cross-over design;
- whether there is a carry-over effect;
- whether only first period data are available;
- whether the analysis is correct;
- comparability of results with those from parallel-group trials.

Measures of the effect of the methods

Dichotomous data (correct/incorrect answers on tests of understanding of key findings of systematic reviews) will be determined using a risk ratio (RR) with a 95% confidence interval (CI).

Ordinal scale data outcomes reported in this way will be collapsed into dichotomous outcomes.

Continuous data will be analysed using mean difference (MD) with the 95% CI if the measurement scale is the same. If the scale is different, standardised mean differences (SMD) with 95% CIs will be used.

Unit of analysis issues

Randomised trials will be analysed separately from the other types of study design.

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Cluster-randomised trials included in the systematic review will be identified as such. We will report the baseline comparability of clusters and consider statistical adjustment if it may help to reduce an imbalance.

We will estimate the intraclass correlation coefficient (ICC) as described by **Higgins 2011** using information from the study if it is available or, from an external estimate obtained from a similar study. If we do this, we will conduct sensitivity analyses to explain variation in ICC values.

Studies with multiple intervention groups we will include and analyse groups which are relevant to our review. However, all intervention groups will be clearly listed in the 'Characteristics of included studies' table. To avoid "double counting" data for studies that could contribute more than one control group, we will combine comparison groups to create a single pair-wise comparison (Higgins 2011).

Dealing with missing data

We will contact authors when a gap is identified in studies. If we decide that there may be reasons to impute missing data e.g. to explore the impact of missing data in the sensitivity analysis, we will discuss the potential harms and benefits of this. If the missing data are substantial, analysis with imputed data may be futile.

We will narratively explore the potential impact of missing data in the discussion section of the review.

Assessment of heterogeneity

We have specified that we will include non-randomised trials in this review which may lead to increased statistical heterogeneity. We will assess heterogeneity by visually inspecting a forest plot of included studies. The location of point estimates, the degree to which confidence intervals overlap and the presence and results of meta-analysis will be taken into account. Next, we will test for the presence of heterogeneity using the Chi² test. If the P value is low (less than 0.10), the likelihood of heterogeneity will increase.

We will quantify the extent of heterogeneity by calculating an estimation of the I² statistic. We will follow the guidance outlined in Section 9.5.2 of the **Higgins 2011**:

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- 0% to 40%: might not be important;
- 30% to 60%: may represent moderate heterogeneity*;
- 50% to 90%: may represent substantial heterogeneity*;
- 75% to 100%: considerable heterogeneity*.

*The importance of the observed value of I^2 depends on (i) magnitude and direction of effects and (ii) strength of evidence for heterogeneity (e.g. P value from the Chi^2 test, or a confidence interval for I^2). If our I^2 value indicates that heterogeneity is a possibility and either the Tau^2 is greater than zero, or the P value is low (less than 0.10), heterogeneity may be due to a factor other than chance.

If we identify methodological or statistical heterogeneity, we will not pool results into a meta-analysis. Instead we will carry out a narrative synthesis, grouping trials with similar populations and interventions together to attempt to identify reasons for heterogeneity.

Assessment of reporting biases

If 10 or more studies are included in a meta-analysis, we will create a funnel plot to investigate whether bias may exist unless all studies are of a similar size. We will use the funnel plot test proposed by Egger 1997. If we notice asymmetry we cannot conclude that reporting biases exist however, we will consider the sample sizes and presence and possible influence of outliers. We will discuss potential explanations such as publication bias or poor methodological quality of included studies and subsequently perform a sensitivity analysis.

Data synthesis

We will use Review Manager software (RevMan 2014) to conduct our statistical analysis and undertake meta-analysis if it is deemed appropriate. Considering the differences in the participant groups, the comparisons and the outcomes in this review, we will use a random-effects model. The pooled estimate of the effects will estimate the mean effects across the groups, comparisons and methods of outcome evaluation. Both within-study and between study variability will be addressed. If we

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do not deem it appropriate to conduct meta-analyses we will present a systematic, narrative summary of the results.

'Summary of findings' table

Two review authors (AC, DD) will assess the quality of the evidence. Based on the methods described in Section 8.5 of Chapter 12 of the *Cochrane Handbook for Systematic Reviews of Interventions* (Higgins 2011) and by GRADE (Guyatt 2013a; Guyatt 2013b), we will create 'Summary of findings' tables for the main comparisons of the review: 'Summary of findings' tables versus full versions of systematic reviews; 'Summary of findings' tables plus full review versus full review (no 'Summary of findings' tables); 'Summary of findings' tables versus other summaries of systematic reviews; and interactive versus static 'Summary of findings' tables.

We will present the following primary and secondary outcomes for each comparison: user understanding of key findings of systematic reviews, self-perceived understanding of key findings of systematic and self-reported influence on decision-making, time taken to read summary and extract relevant information, accessibility of the main findings of the review, user satisfaction/preferences/attitudes and other outcome(s) of main interest, as outlined in the section on Types of outcome measures. We will describe the study settings and number of participants and studies addressing each outcome. For each assumed risk cited in the table(s), we will provide a source and rationale, and the GRADE system will be used to assess the quality of the evidence using GRADEpro software or the GRADEpro GDT app. If meta-analysis is not appropriate or the units of analysis cannot be compared, we will present results in a narrative 'Summary of findings' table format (using Chan 2011 for guidance). If we do this, the imprecision of the evidence will be an issue of concern due to the lack of a quantitative effect measure.

Subgroup analysis and investigation of heterogeneity

If visual inspection of forest plots, Chi² test, I² statistic and Tau² indicate that statistical heterogeneity could be present, a subgroup analysis will be carried out.

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A subgroup analysis will be deemed appropriate if included studies satisfy criteria to assess credibility of subgroup analyses (Oxman 1992; Sun 2010).

The following are our *a priori* subgroups:

- different participant groups e.g. patients, policy makers or healthcare professionals;
- intervention characteristics e.g. different formats of 'Summary of findings' tables, different summarisation products;
- type of study.

Sensitivity analysis

We will use the GRADE approach (Guyatt 2008) to assess the level of quality of the evidence and thereby, interpret the results. This involves the GRADE classification terms: high, moderate, low or very low. GRADE is characterised by eight criteria for authors to consider (Schünemann 2013).

Risk of bias (potential to reduce level of quality of evidence by one or two levels)

Inconsistency of results (potential to reduce level of quality of evidence by one or two levels)

Indirectness of evidence (potential to reduce level of quality of evidence by one or two levels)

Imprecision of results (potential to reduce level of quality of evidence by one or two levels)

Risk of publication bias (potential to reduce level of quality of evidence by one or two levels)

Magnitude of effect (potential to increase level of quality of evidence by one or two levels)

Dose response gradient (potential to increase level of quality of evidence by one level)

Influence of residual plausible confounding (potential to increase level of quality of evidence by one level)

We will downgrade randomised trials by one, two or three levels according to the severity of the study limitations (the first five factors listed above). We will upgrade

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non-randomised trials if their results show large effects and bias is not evident, or we will downgrade them if they demonstrate limitations as listed above.

We will use [The GRADEpro Guideline Development Tool](#) to create a 'Summary of findings' table incorporating our results.

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Contributions of authors

DD, MC and AC devised the study. AC drafted the protocol and DD, ST, NS, RM and LM reviewed the protocol. AC developed the search strategy and will conduct the search. DD and AC will select the studies, assess risk of bias and certainty of the evidence.

Declarations of interest

The authors declare no financial conflict of interest. However, some are members of the GRADE working group (HS, NS, RM) the DECIDE project (ST) and the Cochrane Collaboration. These authors who may be authors of potentially eligible studies will not have any role in study selection, risk of bias and certainty of evidence assessments.

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External sources

National University of Ireland, Galway and the Health Research Board Trials Methodology Research Network, Ireland

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Appendices (protocol)

1 PubMed search strategy

Platform: part of the Entrez series of databases provided by the NLM National Center for Biotechnology Information (NCBI)

Years of coverage: generally 1946 to the present, with some older material

Date conducted: 13/01/2016

#1 "summary of findings" OR summary-of-findings

#2 table OR tables OR tabulate* OR tabular

#3 #1 AND #2

Limits: none

No. of hits: 100

APPENDIX 2.2 ELECTRONIC DATABASES SEARCH STRATEGIES

Database: PubMed

Platform or provider name: National Library of Medicine (NLM) National Center For Biotechnology Information (NCBI)

Dates of coverage: generally 1946 to the present when available, with some older material

Limits or filters used: none

Date of latest search: 30/01/2018

No. of hits: 194

Search	Query
#1	summary of findings
#2	"summary of findings"
#3	summary-of-findings
#4	#2 OR #3
#5	table OR tables OR tabulate* OR tabular
#6	#2 AND #5

Database: Cochrane Library

Platform or provider name: Wiley Online Library

Dates of coverage: see the following link for details:

www.cochranelibrary.com/about/about-the-cochrane-library.html

Limits or filters used: title, abstract and keyword fields

Date of latest search: 30/01/2018

No. of hits: 256

Search	Query
#1	"summary of findings" (Word variations have been searched)
#2	summary-of-findings
#3	#1 or #2
#4	table or tables or tabulate* or tabular
#5	#3 and #4

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#6	summary of findings:ti,ab,kw
#7	summary-of-findings:ti,ab,kw
#8	#6 or #7
#9	table or tables or tabulate* or tabular:ti,ab,kw
#10	#8 and #9

Database: Campbell Collaboration

Platform or provider name: Campbell Collaboration online library

Dates of coverage: May 2004 to present

Limits or filters used: none

Date of latest search: 30/01/2018

No. of hits: 2

Search	Query
#1	"summary of findings"
#2	summary-of-findings
#3	summary of findings
#4	table OR tables OR tabulate* OR tabular
#5	table OR tables OR tabulate OR tabulates OR tabulated OR tabular
#6	#3 AND #5
#7	summary of findings table OR summary of findings tables

Database:CINAHL Complete

Platform or provider name: EBSCOhost

Dates of coverage: from 1937 (for some journals) to present

Limits or filters used: none

Date of latest search: 30/01/2018

No. of hits: 72

Search	Query
#1	"summary of findings"
#2	summary-of-findings

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#3	#1 OR #2
#4	table OR tables OR tabulate* OR tabular
#5	#3 AND #4

Database: LILACS

Platform or provider name: BIREME

Dates of coverage: From 1982 to present

Limits or filters used: none

Date of latest search: 31/01/2018

No. of hits: 1

Search	Query
#1	"summary of findings"
#2	summary-of-findings
#3	table OR tables OR tabulate* OR tabular
#4	#1 AND #3

Database: Web of Science Core Collection

Platform or provider name: Clarivate Analytics

Dates of coverage: from 1800 (for some journals) to present

Limits or filters used: TS field code used. This searches the following fields; title, abstract, author keywords, keywords plus.

Date of latest search: 31/01/2018

No. of hits: 276

Search	Query
#1	TS="summary of findings"
#2	TS=summary-of-findings
#3	#1 OR #2
#4	TS=(table OR tables OR tabulate* OR tabular)
#5	#3 AND #4

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Database: Scopus

Platform or provider name: Elsevier

Dates of coverage: from 1823 (for some journals) to present

Limits or filters used: none

Date of latest search: 31/01/2018

No. of hits: 351

Search	Query
#1	"summary of findings"
#2	summary-of-findings
#3	#1 OR #2
#4	table OR tables OR tabulate* OR tabular
#5	#3 AND #4

Database: Embase

Platform or provider name: Elsevier

Dates of coverage: from 1974 (for some journals) to present

Limits or filters used: none

Date of latest search: 31/01/2018

No. of hits: 335

Search	Query
#1	'summary of findings'
#2	summary-of-findings
#3	table OR tables OR tabulate* OR tabular
#4	#1 AND #3

Database: Epistemonikos

Platform or provider name: www.epistemonikos.org

Dates of coverage: information not available

Limits or filters used: title and abstract fields

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Date of latest search: 31/01/2018

No. of hits: 130

Search	Query
#1	"summary of findings" (title/abstract)
#2	summary-of-findings (title/abstract)
#3	#1 or #2
#4	table OR tables OR tabulate* OR tabular (title/abstract)
#5	(title:"summary of findings") OR abstract:("summary of findings")) OR (title:(summary-of-findings) OR abstract:(summary-of-findings)) AND (title:(table OR tables OR tabulate* OR tabular) OR abstract:(table OR tables OR tabulate* OR tabular))
#6	"summary of findings" (title/abstract) AND table OR tables OR tabulate* OR tabular (title/abstract)
#7	#6 and #2

Database: Trip Database Pro

Platform or provider name: Trip Database Ltd.

Dates of coverage: some records as far back as 1946 but the majority are from 2000 onwards

Limits or filters used: PICO search intervention field

Date of latest search: 31/01/2018

No. of hits: 9

Search	Query
#1	summary of findings table or "summary of findings tables"
#2	(summary of findings table) or (summary of findings tables) in PICO, search intervention field

Database: PsycINFO

Platform or provider name: Ovid

Dates of coverage: from 1806 (some journals) to present

Limits or filters used: AF = any field

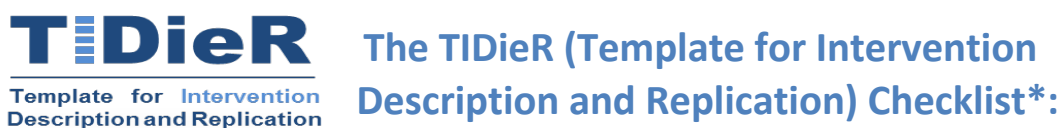
Appendices

Date of latest search: 31/01/2018

No. of hits: 314

Search	Query
#1	"summary of findings".af
#2	summary-of-findings.af
#3	#1 OR #2
#4	(table or tables or tabulate* or tabular).af
#5	#1 AND #4

APPENDIX 3.1 COMPLETED TIDIER CHECKLIST



Information to include when describing an intervention and the location of the information

Item number	Item	Description
BRIEF NAME		
1.	Provide the name or a phrase that describes the intervention.	Evidence Rounds
WHY		
2.	Describe any rationale, theory, or goal of the elements essential to the intervention.	<p>Evidence Rounds was a multi-component initiative to disseminate evidence to HCPs and promote evidence-informed practice. Our implementation strategy featured interprofessional group sessions and other modes of delivery. Debate continues about the best implementation strategies aimed at HCPs. In an overview of systematic reviews by Squires and colleagues [1], the authors did not find evidence to recommend multi-component over single-component strategies. Others propose that multi-component strategies are more likely to address the needs of diverse HCPs within complex settings [2, 3, 4].</p> <p>Forsetlund et al. [5] found that while educational meetings alone were not likely to change practice, when combined with other interventions they can lead to small but positive impacts on practice and patient outcomes, especially when related to serious outcomes.</p> <p>In a Cochrane systematic review, Reeves and colleagues assessed the effects of interprofessional education [6] . All of the included studies compared interprofessional education to no education rather than single professional education. The majority of studies reported increased positive outcomes.</p>

		<p>Nevertheless, due to the heterogeneity of interventions and outcome measures, and the quality of the evidence (which was graded as low or very low), it is not possible to reach conclusions with high levels of certainty.</p> <p>The implementation of the initiative and specifically the strategy to engage HCPs was informed by the Diffusion of Innovations theory by Rogers [7]. Our goals were aligned with the broad goals of dissemination to HCPs identified in a systematic review by McCormack [4] namely, to increase the reach of the evidence, and to increase the ability and motivation to use the evidence.</p> <p style="text-align: center;"><u>References</u></p> <ol style="list-style-type: none"> 1. Squires J, Sullivan K, Eccles M, Worswick J, Grimshaw J. Are multifaceted interventions more effective than single component interventions in changing health-care professionals' behaviours? An overview of systematic reviews. <i>Implement Sci.</i> 2014;9(1):152. doi: 10.1186/s13012-014-0152-6. 2. Harvey G, Kitson A. Translating evidence into healthcare policy and practice: single versus multi-faceted implementation strategies – is there a simple answer to a complex question? <i>Int Health Policy Manag.</i> 2015;4(3):123-126. doi:10.15171/ijhpm.2015.54. 3. Harvey G, Kitson A. Single Versus Multi-Faceted Implementation Strategies – Is There a Simple Answer to a Complex Question? A Response to Recent Commentaries and a Call to Action for Implementation Practitioners and Researchers. <i>International Journal of Health Policy and Management.</i> 2016;5(3):215-217. 4. McCormack L, Sheridan S, Lewis M, Boudewyns V, Melvin CL, Kistler C, Lux LJ, Cullen K, Lohr KN. Communication and Dissemination Strategies To Facilitate the Use of Health-Related Evidence. Evidence Report/Technology Assessment No. 213. AHRQ Publication No. 13(14)-E003-EF. Rockville, MD: Agency for Healthcare Research and Quality; November 2013. www.effectivehealthcare.ahrq.gov/reports/final.cfm 5. Forsetlund L, Bjorndal A, Rashidian A, Jamtvedt G, O' Brien MA, Wolf FM et al. Continuing education meetings and workshops: effects on professional practice and health outcomes. <i>Cochrane Database of Systematic Reviews</i> 2009, Issue 2. Art. No.: CD10.1002/14651858.CD003030.pub.2. 6. Reeves S, Perrier L, Goldman J, Freeth D, Zwarenstein M. Interprofessional education: effects on professional practice and healthcare outcomes (update). <i>Cochrane Database of Systematic Reviews</i> 2013, Issue 3. Art. No.: CD002213. DOI: 10.1002/14651858.CD002213.pub3.
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		7. Rogers EM. Diffusion of Innovation. 3rd ed. London: The Free Press; 1983.
WHAT		
3.	Materials: Describe any physical or informational materials used in the intervention, including those provided to participants or used in intervention delivery or in training of intervention providers. Provide information on where the materials can be accessed (e.g. online appendix, URL).	<p>Physical materials:</p> <ul style="list-style-type: none"> • laptop, projector, cables, presenter remote, printer, paper, ink cartridges • audio recording equipment, extension lead <p>Informational materials:</p> <ul style="list-style-type: none"> • Evidence Rounds website: www.evidencerounds.com (includes repository of presentation slides, event schedule, search strategies, additional information, supplementary links to resources to help users search for and critically appraise evidence) • promotional posters, participant recruitment posters, signage • participant information leaflets and consent forms for focus groups and interviews <p>A budget contributed towards facilitator costs, catering services, printing, website development and hosting services.</p>
4.	Procedures: Describe each of the procedures, activities, and/or processes used in the intervention, including any enabling or support activities.	<ol style="list-style-type: none"> 1. <i>Selection of clinical question or topic</i> – HCPs invited to submit and when necessary, gain consensus on suggestions 2. <i>Recruitment of staff to present</i> - 3 HCPs presented evidence at each group session. Staff either volunteered or members of the implementation team contacted specific staff to invite them to present based on their area of expertise 3. <i>Search for evidence and screening</i> - One of the researchers (AC) performed focused literature searches and initial sifting of obviously irrelevant results. The HCPs who were presenting then screened remaining results to narrow it down to approximately 4 resources each which they judged to be the best available evidence or key official guidance on the topic. Each resource was considered in terms of relevance, level of evidence and currency. 4. <i>Presentation preparation</i> <ul style="list-style-type: none"> • each presenter was assigned records to present according to their preferences of study design or level of experience • presenters used appropriate critical appraisal tools to identify strengths and limitations • presenters decided whether to briefly present local audit data to ground the research and make it more meaningful to attendees

		<ul style="list-style-type: none"> • decision about whether topic warranted invitation to HCPs from outside of departments to attend when perceived as advantageous • provision of ongoing enablement and support to presenters e.g. critical appraisal help, extraction and visualisation of data etc. • presenters had opportunity to plan the final part of the presentation focusing on: <ul style="list-style-type: none"> ○ briefly summarising the key findings of the evidence ○ exploring the relevance and applicability of evidence to local context ○ identifying potential barriers & facilitators to implementing the evidence. <p><i>5. Evidence Rounds group sessions</i></p> <p>Each monthly session had the following structure:</p> <ul style="list-style-type: none"> • overview of official guidance and summarisation and critical appraisal of key evidence • discussion of relevance and applicability of evidence to local practice • if applicable, identification of potential barriers and facilitators to implementation of evidence • if applicable, discussion and decision making regarding actions to be taken in light of the evidence and assignment of actions to responsible persons
WHO PROVIDED		
5.	For each category of intervention provider (e.g. psychologist, nursing assistant), describe their expertise, background and any specific training given.	Presenters and other members of the implementation team were qualified medical doctors, nurses or midwives. The initiative was led by a knowledge translation specialist who has experience of collaborating with HCPs to promote evidence-informed practice in women and children’s divisions at hospitals. Specific training: <ul style="list-style-type: none"> • Postgraduate Diploma in Research Methods in Health Sciences (University of Warwick, UK) • Knowledge Translation Professional Certificate (St. Michael’s Hospital Toronto, Canada)
HOW		
6.	Describe the modes of delivery (e.g. face-to-face or by some other mechanism, such as internet or telephone) of the	The Evidence Rounds initiative featured multiple modes of delivery. Individual and group planning meetings took place face-to-face. Preparatory activities for presenters took place during group or one-to-one meetings, via telephone or by email. Presentations were delivered in group settings. Presentation slides and additional information was made available online via the dedicated website. Personalised

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	intervention and whether it was provided individually or in a group.	certificates of attendance or participation were delivered via email. Posters were used throughout for promoting group sessions and recruiting participants for focus groups and interviews, both of which took place face-to-face.
WHERE		
7.	Describe the type(s) of location(s) where the intervention occurred, including any necessary infrastructure or relevant features.	Each group session was delivered in a classroom located adjacent to the neonatal department of the hospital. The classroom featured adequate seating capacity and audio-visual technology to display presentation slides. Interviews and focus groups took place in the maternity boardroom, maternity classroom or in HCP offices within the department. A few preparatory meetings for presenters took place in the hospital canteen or a nearby café to align with staff lunchtimes.
WHEN and HOW MUCH		
8.	Describe the number of times the intervention was delivered and over what period of time including the number of sessions, their schedule, and their duration, intensity or dose.	Six group sessions were delivered over nine months. As requested by staff, Evidence Rounds group sessions were scheduled during lunchtimes. Each session lasted approximately 1.5 hours (including post-presentation discussion). Before each session email reminders were sent to potential attendees by HCP members of the implementation team and in some cases they delivered in-person reminders on the hospital wards.
TAILORING		
9.	If the intervention was planned to be personalised, titrated or adapted, then describe what, why, when, and how.	As was initially planned, Evidence Rounds was adapted throughout its duration in response to the needs and expressed preferences of the audience, and the local context. All feedback from attendees was considered and acted upon if appropriate and possible, at the earliest opportunity so that subsequent delivery was improved.
MODIFICATIONS		

<p>10.†</p>	<p>If the intervention was modified during the course of the study, describe the changes (what, why, when, and how).</p>	<p>The initiative was modified throughout the course of the study in accordance with feedback from users and observations. For example:</p> <ul style="list-style-type: none"> • specific patient cases were not a formal part of the presentation • local audit data was collected retrospectively and reported at 3 of the 6 sessions • a brief “Quick guide for presenters” was uploaded to the website in response to frequently asked questions • social network accounts on Facebook, Twitter and LinkedIn were abandoned due to lack of interest. Additional effort was put into posters, website information, email correspondence and face-to-face interactions • the schedule of group sessions was altered to accommodate staff holidays, exams and other educational events to optimise attendance. Therefore, the initiative was delivered over 9 rather than 6 months • certificates of participation and attendance were introduced in response to a request from staff after the second session • in the final group session, one of the presenters was not working as a HCP at the hospital. He is the author of 2 papers that were going to be discussed so he was identified as the best person to present the findings. He is an author on this paper (DD) • during one of the group sessions, an attendee requested the circulation of a topic suggestion sheet so that individuals who for whatever reason did not want to make suggestions in front of their colleagues, could contribute.
<p>HOW WELL</p>		
<p>11.</p>	<p>Planned: If intervention adherence or fidelity was assessed, describe how and by whom, and if any strategies were used to maintain or improve fidelity, describe them.</p>	<p>We did not assess adherence or fidelity. However, core components of the initiative were identified before the first session and adhered to throughout the duration. Those components were:</p> <ol style="list-style-type: none"> 1. clinical question or topic focused approach to deciding on the content of group sessions 2. literature searches carried out by an experienced professional 3. the goal to include the best available evidence 4. monthly group sessions 5. discussion forum after presentations to discuss the possibility of resulting actions 6. multidisciplinary and interprofessional target audience
<p>12.†</p>	<p>Actual: If intervention adherence or fidelity was</p>	<p>N/A</p>

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	assessed, describe the extent to which the intervention was delivered as planned.	
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** **Authors** - use N/A if an item is not applicable for the intervention being described. **Reviewers** – use '?' if information about the element is not reported/not sufficiently reported.

† If the information is not provided in the primary paper, give details of where this information is available. This may include locations such as a published protocol or other published papers (provide citation details) or a website (provide the URL).

‡ If completing the TIDieR checklist for a protocol, these items are not relevant to the protocol and cannot be described until the study is complete.

* We strongly recommend using this checklist in conjunction with the TIDieR guide (see *BMJ* 2014;348:g1687) which contains an explanation and elaboration for each item.

* The focus of TIDieR is on reporting details of the intervention elements (and where relevant, comparison elements) of a study. Other elements and methodological features of studies are covered by other reporting statements and checklists and have not been duplicated as part of the TIDieR checklist. When a **randomised trial** is being reported, the TIDieR checklist should be used in conjunction with the CONSORT statement (see www.consort-statement.org) as an extension of **Item 5 of the CONSORT 2010 Statement**. When a **clinical trial protocol** is being reported, the TIDieR checklist should be used in conjunction with the SPIRIT statement as an extension of **Item 11 of the SPIRIT 2013 Statement** (see www.spirit-statement.org). For alternate study designs, TIDieR can be used in conjunction with the appropriate checklist for that study design (see www.equator-network.org).

APPENDIX 3.2 QUICK GUIDE FOR PRESENTERS



Guidance for Evidence Rounds Presenters

Checklist of Information to Know about your Chosen Resources*	
General background information	author, year of publication, country/countries where it took place (if a trial/study)
Study design	Eg. RCT, systematic review, cohort study etc.
Patient/population/problem	<ul style="list-style-type: none"> • Total number and number in each group/arm • Inclusion and exclusion criteria • If systematic review, total number of included studies and total number of study participants across all studies
Intervention	Dosage, administration, frequency, concurrent patient management that may influence outcomes
Comparison(s)	As above
Outcomes	Both primary and secondary & how they were measured
Key findings	In text body and key tables/graphs etc.
Strengths of the study/review	Find a critical appraisal tool (suitable for your study design) at the following link:
Limitations of the study/review	http://www.evidenceroounds.com/resourcesandtools-criticallyappraise Use it to identify the main strengths and limitations
Applicability to the local context	


*Not applicable to guidance documentation


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When Creating your PowerPoint Slides:

- Use a plain white background on all slides
- If using images, please ensure that you have the necessary permissions to do so. The finished presentation will be uploaded to the Evidence Rounds website so all copyright and licensing laws must be adhered to. It will be possible to access a bank of images so email evidencerounds@gmail.com if you are unsure or need help sourcing an image.
- You can insert screenshots of key tables/figures/graphs etc. from the resources. Just make sure to reference them underneath.
- On slides where you are discussing a particular resource, the title of the slide should state the surname of the lead author, *et al* (in italics) if applicable, and year of publication. Example of format: Ohlsson *et al*, 2015.
- On slides where you are discussing a particular resource by a professional organisation, the title of the slide should include the professional body and its acronym in brackets followed by the year. Example of format: Royal College of Obstetricians and Gynaecologists (RCOG), 2014
- Include a reference slide at the end of your section to confirm which resources you have selected and discussed
- Aim for roughly 10-12 slides, you will have approximately 12 mins each to present

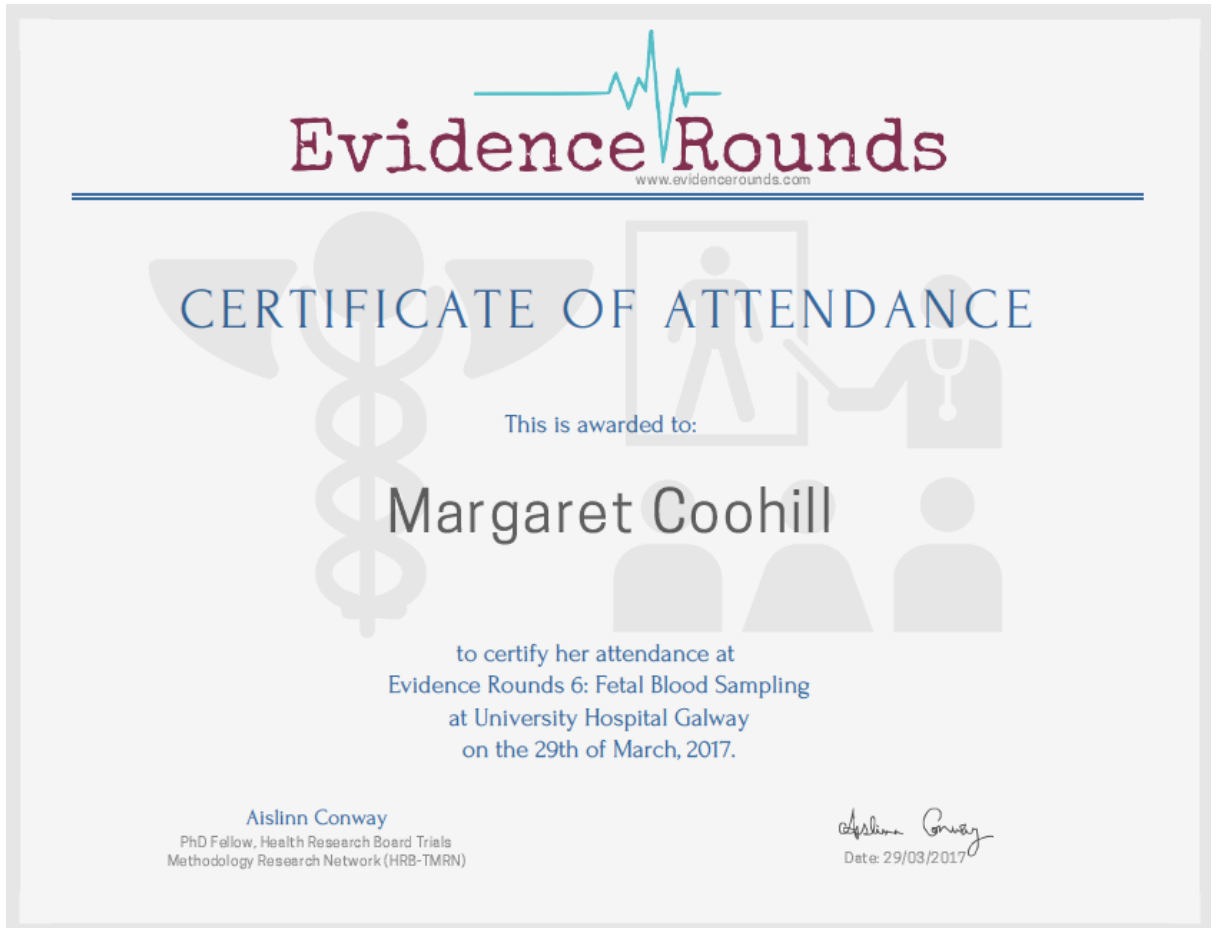
APPENDIX 3.3 SAMPLE POSTER PROMOTING EVIDENCE ROUNDS

<p>IN THE MATERNITY CLASSROOM</p>	<p> Evidence Rounds INTERDISCIPLINARY SESSION 6 FETAL BLOOD SAMPLING</p>	<p>Wednesday MAR. 29TH 2017</p>
<p>LUNCH PROVIDED BY MR. WAFFLE</p>	<p>FROM 12.30-13.30 ALL STAFF AND STUDENTS WELCOME</p>	



 TMRN <small>Health Research Board Tasmanian Medical Research Network</small>	 Saolta <small>Single Affinity Group (SAG) - Healthcare Research Network</small>	 OÉ Gaillimh NUI Galway	<p>WWW.EVIDENCEROUNDS.COM ✉ EVIDENCE.ROUNDS@GMAIL.COM ☎ 087-3349755 (AISLINN)</p>
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APPENDIX 3.4 SAMPLE CERTIFICATE OF ATTENDANCE





APPENDIX 3.5 SAMPLE CERTIFICATE OF PARTICIPATION








APPENDIX 3.6 KTPC TEMPLATE

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Knowledge Translation Planning Template©

INSTRUCTIONS: This template was designed to assist with the development of Knowledge Translation (KT) plans for research but can be used to plan for non-research projects. The Knowledge Translation Planning Template is universally applicable to areas beyond health. Begin with box #1 and work through to box #13 to address the essential components of the KT planning process.

(1) Project Partners	(2) Degree of Partner Engagement	(3) Partner(s) Roles	(4) KT Expertise on Team
<div style="text-align: center; margin-bottom: 10px;">  </div> <ul style="list-style-type: none"> <input type="checkbox"/> researchers <input type="checkbox"/> consumers - patients/families <input type="checkbox"/> the public <input type="checkbox"/> decision makers <input type="checkbox"/> private sector/industry <input type="checkbox"/> research funding body <input type="checkbox"/> volunteer health sector/NGO <input checked="" type="checkbox"/> practitioners <input checked="" type="checkbox"/> other <div style="text-align: right; margin-top: 10px;">  </div>	<div style="text-align: center; margin-bottom: 10px;">  </div> <ul style="list-style-type: none"> <input type="checkbox"/> from idea formulation straight through <input checked="" type="checkbox"/> after idea formulation & straight through <input type="checkbox"/> at point of dissemination & project end <input type="checkbox"/> beyond the project <p><small>Consider: Not all partners will be engaged at the same point in time. Some will be collaborators, end users or audiences, or people hired to do specific activities.</small></p>	<div style="text-align: center; margin-bottom: 10px;">  </div> <p><small>(1) What do the partner(s) bring to the project?</small></p> <p><small>(2) How will partner(s) assist with developing, implementing or evaluating the KT plan?</small></p> <p><small>Action: Capture their specific roles in letters of support to funders, if requested.</small></p>	<div style="text-align: center; margin-bottom: 10px;">  </div> <ul style="list-style-type: none"> <input type="checkbox"/> scientist(s) with KT expertise <input type="checkbox"/> consultant with KT expertise <input checked="" type="checkbox"/> knowledge broker/specialist <input type="checkbox"/> KT supports within the organization(s) <input type="checkbox"/> KT supports within partner organization(s) <input type="checkbox"/> KT supports hired for specific task(s)

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(5) Knowledge Users (KUs)

(6) Main Messages

(7) KT Goals

(8) KT Strategy(s)

Which KUs or audiences will you target?

- researchers
- health practitioners or service providers
- public
- media
- patients/consumers
- decision makers
- in organization
- in community
- policy makers
- private sector/industry
- research funders
- venture capitalists
- volunteer health sector/NGO
- other: specify ► _____

Consider: Have you included any of your audiences on your research team? If so, who and why (be strategic)?

What did you learn, or what do you anticipate learning?

Audience 1 _____

Audience 2 _____

Audience 3 _____

OR

No idea yet; messages will emerge during research through collaboration with partners.

Consider: What can you feasibly do within this project, given time and resources? Aim for defining your Single Most Important Thing (SMIT) or Bottom Line Actionable Message (BLAM).

What are your KT Goals for each KU/audience?

Audiences 1 2 3

↓ ↓ ↓

Generate... awareness

interest

practice change

behaviour change

policy action

impart... knowledge

tools

Inform... research

product

patent

other ► _____

Consider: KT is applicable to all research; even single studies are shared via journal articles. However, intent to change practice, behaviour or policy must be supported by a body of high quality research evidence (synthesis). Always consider legal and ethical principles in your KT efforts.

What KT strategy(s) will you use?

Audiences 1 2 3

↓ ↓ ↓

Mostly Effective*

- interactive small group
- educational outreach
- reminders
- IT decision support
- multi-prof collaboration
- mass media campaign
- financial incentive
- combined interventions

Mixed Effects*

- conferences (didactic)
- opinion leaders
- champions
- educational materials
- patient-mediated interview
- performance feedback
- substitution of tasks
- peer reviewed publication

Limited Effects*

- CQI - Continuous Quality Improvement


Effects Unsupported by Synthesis*

- press release
- patent license
- arts-based KT
- social media
- networks
- communities of practice
- Café Scientifique
- webinar
- other ► _____

Consider: Multifaceted/combined KT strategies are more effective than single strategies.

NOTES

(9) KT Process



When will KT occur?


integrated iKT³ – researchers and research users will collaborate to shape the research process, e.g., setting the research questions, deciding the methodology, involvement in data collection and tools development, interpretation of findings and dissemination of research results

end of grant KT³ – KT undertaken at the completion of the research process

both

Comment on the specifics of your KT procedures; describe how you are using iKT:

(10) KT Impact & Evaluation



(a) Where do you want to have an impact?

healthcare/well-being outcomes

(clinical) practice

policies/systems

research & knowledge

(b) How will you know if you achieved your KT goal(s)? Consider:

reach indicators (# distributed, # requested, # downloads/hits, media exposure)⁴

usefulness indicators (read/browsed, satisfied with, usefulness of, gained knowledge, changed views)⁴

use indicators (# intend to use, # adapting the information, # using to inform policy/advocacy/enhance programs, training, education, or research, # using to improve practice or performance)⁴

partnership/collaboration indicators (# products/services developed or disseminated with partners, # or type capacity building efforts, social network growth, influences, collaborativeness)⁴

practice change indicators (intent or commitment to change, observed change, reported change)

program or service indicators (outcome data, documentation, feedback, process measures)

policy indicators (documentation, feedback, process measures)





knowledge change (quantitative & qualitative measures)

attitude change (quantitative & qualitative measures)

systems change (quantitative & qualitative measures)

(c) Guiding Questions for Evaluation⁵

- 1) What internal/external factors do you need to consider? Where is the energy for this work? How have similar initiatives been evaluated in the past? *(link this to partners, KUs)*
- 2) Who values the evaluation of this initiative? What are they saying they need from this evaluation? *(link this to partners, KUs)*
- 3) Why are you evaluating? For program growth or improvement, accountability? Sustainability? Knowledge generation? (e.g., to know if the KT strategy met the objectives)
- 4) How will literature or existing theories inform how you evaluate the initiative?
- 5) Which questions/objectives are critical? *(link this to KT goals, process, impact)*
- 6) Will you focus on process or outcome information? What are your pre-determined outcomes? How will you capture emergent outcomes?
Does this information already exist in your system? *(link to methods, process, impact)*
- 7) Will methods be quantitative, qualitative or mixed? Do tools exist or will you need to create your own? *(link to KT methods)*
- 8) What perspective or skill set do you need to help you reach your evaluation objectives? *(link to partners, KUs)*
- 9) How do your stakeholders wish to receive this information so that it will be valuable and useful to them? How will you engage them throughout? *(link to partners, KUs)*

 (1.1) Resources	 (1.2) Budget Items	 (1.3) Implementation
What resources are required? <input type="checkbox"/> board <input checked="" type="checkbox"/> financial <input checked="" type="checkbox"/> human <input checked="" type="checkbox"/> IT <input checked="" type="checkbox"/> leadership <input type="checkbox"/> management <input checked="" type="checkbox"/> volunteer <input checked="" type="checkbox"/> web <input type="checkbox"/> worker <input type="checkbox"/> other: (list) ▲	What budget items are related to the KT plan? <input type="checkbox"/> accommodation <input type="checkbox"/> art installation <input type="checkbox"/> evaluation specialist <input checked="" type="checkbox"/> graphics/imagery <input type="checkbox"/> knowledge broker <input type="checkbox"/> KT specialist <input type="checkbox"/> mailing <input type="checkbox"/> media release <input type="checkbox"/> media product (e.g. video) <input type="checkbox"/> networking functions <input type="checkbox"/> open access journal <input type="checkbox"/> plain text writer Estimated costs for items listed ▲	Describe how you will implement your KT strategy(s): What processes/procedures are involved? If practice or behaviour change is the focus, how will you ensure the knowledge (intervention) you are transferring retains quality, fidelity, sustainability? ▲
	<input type="checkbox"/> production/printing <input type="checkbox"/> programming <input type="checkbox"/> public relations <input type="checkbox"/> reimbursements for partners (e.g. time, parking, travel) <input type="checkbox"/> tech transfer/commercialization <input type="checkbox"/> teleconferencing <input type="checkbox"/> travel: conferences <input type="checkbox"/> travel: meetings/educational purposes <input type="checkbox"/> web 2.0 (e.g. blogs, podcasts, wikis) <input type="checkbox"/> webinar services <input checked="" type="checkbox"/> website development <input type="checkbox"/> venue <input checked="" type="checkbox"/> other: (list) ▲ Catering services NOTE: Be sure to include all KT costs in your budget for funders	

Barwick, M. (2008, 2013). Knowledge Translation Planning Template. Ontario: The Hospital for Sick Children.
 1) Grol & Grimshaw 2003 The Lancet. 362(9391): 1225. 2) KT strategies may have support from individual studies. 3) CHR <http://www.chr.ca/e/29418.html>. 4) Sullivan, Strachan, & Timmons. Guide to Monitoring and Evaluating Health Information Products and Services. <http://www.inforhealth.org/hipnet/MEGUIDE2007.pdf>. 5) Parker, K (2013). KT and Evaluation. Unpublished, courtesy of Knowledge Translation Professional Certificate, Learning Institute, Hospital for Sick Children.
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APPENDIX 3.7 SAMPLE TOPIC SEARCH PLAN



Evidence Rounds

Session 4: Antenatal Screening for Group B Streptococcus - Search Plan

Topic	Antenatal Screening for Group B Streptococcus
Submitted by	Dr xxxxxxxx with consensus agreement from Evidence Rounds 3 attendees
Objective	This search will be conducted to find relevant resources for the fourth Evidence Rounds session
Searcher	Aislinn Conway

PICO Element	Description	Free Text Search terms	Thesauri Terms
Problem	Group B Streptococcus	Search string #1 Group B Search string #2 strep OR streptococcus OR streptococcal OR streptococcus	<i>MeSH</i> : "Streptococcus agalactiae"[Majr:NoExp] CINAHL headings: - EMTREE: 'Streptococcus agalactiae'/mj
Intervention	Antenatal screening	Search string #1 Antenatal OR pregnancy OR pregnancies OR gestation OR prenatal Search string #2 Screening OR screenings OR diagnosis OR diagnoses	<i>MeSH</i> : "Prenatal Diagnosis"[Majr:NoExp] "Mass Screening"[Majr:NoExp] CINAHL headings: prenatal diagnosis EMTREE: 'mass screening'/mj 'prenatal screening'/mj

Appendices

Comparison	No screening	A search string will not be entered for this field	N/A
Outcome	Any	A search string will not be entered for this field	N/A

Additional information				
Time	Last 10 years			
Study Designs	Preferably systematic reviews but any.			
Scoping search	No			
Thesauri to be checked	MeSH, Emtree, CINAHL Headings			
Databases	<ul style="list-style-type: none"> • Cochrane Library • PubMed • CINAHL Complete • EMBASE • Other websites and sources eg. Google, NICE, DynaMed 			
Any other resources	On request			
Database coverage dates	To be recorded			
Dates of searches	To be recorded			
Limits/filters	English language resources only			
Search filters		Guidelines	Systematic Reviews	Randomised Trials
	Pu b M ed	Link: https://www.cadth.ca/resources/finding-	Link: https://www.nlm.nih.gov/bsd/pubmed_subsets/sysreviews_strategy.html	Link: http://work.cochrane.org/pubmed

Additional information			
		evidence/strings-attached-cadths-database-search-filters#guide	
No. of records retrieved from each database	To be recorded		
Reference manager software	Endnote X7		
Authors to be contacted for further details?	On request		
Sifting	Yes		
Additional information	<p>Current practice at UHG is to take a risk-based approach rather than universal screening.</p> <p>Low vaginal swab (LVS) & rectal swab is thought to be the most accurate screening method.</p> <p>Recurrence rates, appropriateness, timing and technique.</p> <p>Heavy colonisation represents a higher risk. Midstream specimen of urine (MSU) test is offered to all women undergoing their first pregnancy. If GBS in urine this is indicative of heavy colonisation.</p> <p>Research questions:</p> <ul style="list-style-type: none"> • What is the optimal timing for screening? General thinking = 35-37 wks • What are the rates of recurrence of GBS? • What are the long term effects on infants who have been treated with antibiotics for GBS? 		

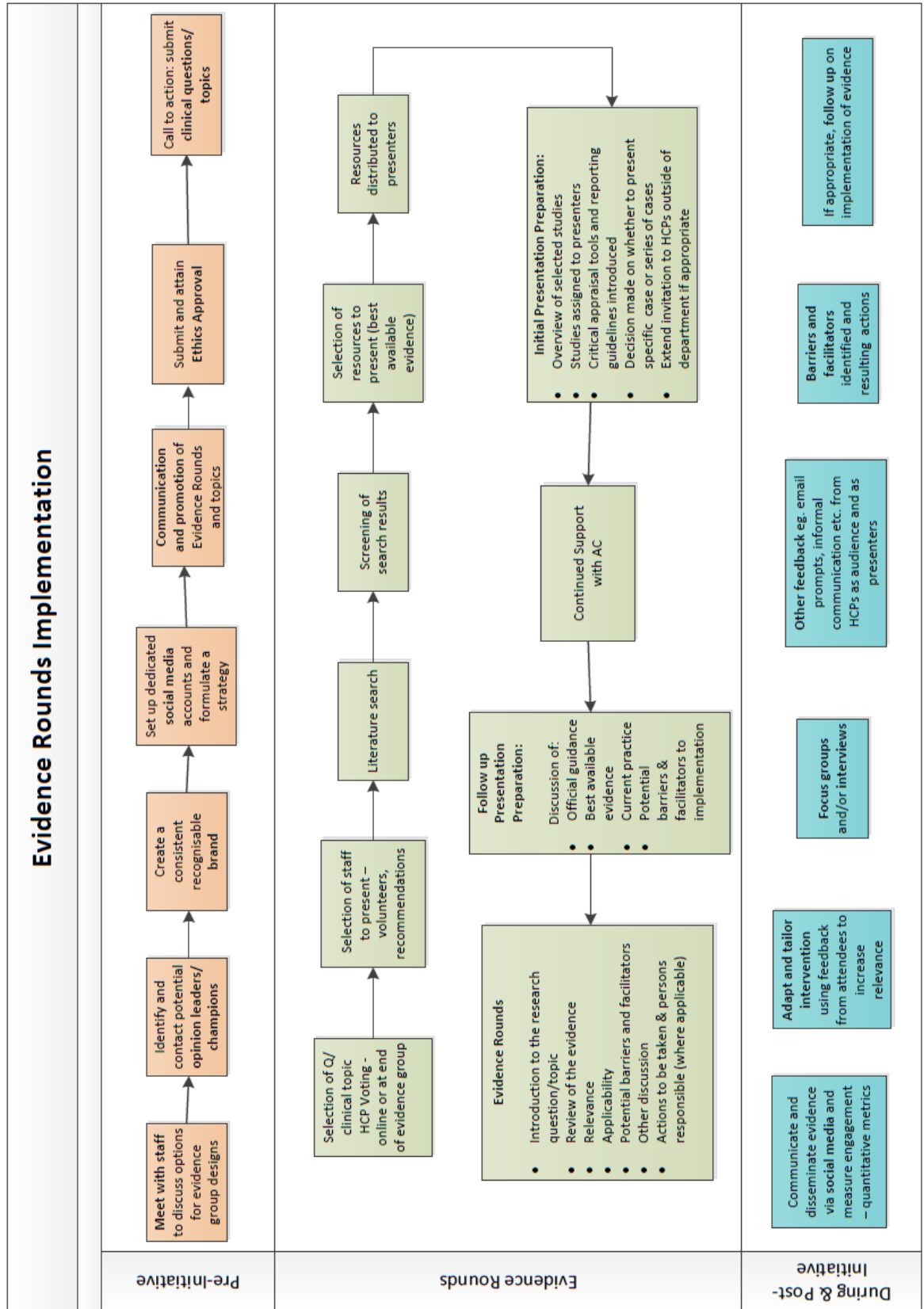
Appendices

Additional information	
	<ul style="list-style-type: none">• Should women with prolonged SROMs at term (of unknown GBS status) be offered screening? <p>Should women be offered a patient information leaflet to inform them?</p>

Reasons for resource exclusion will include:

- Participant type: Non-human
- Publication type: eg. letter, editorial, conference abstract, poster, case report, case series.
- Language: Non-english
- Resources with expired links
- Studies from developing/resource-poor countries

APPENDIX 3.8 PLAN – VISIO



APPENDIX 3.9 COPYRIGHT PERMISSION TO INCLUDE APPENDIX 3.6.

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WHEREAS, Publisher desires to obtain and use a knowledge translation planning template (a copy of which is attached hereto as Appendix A) ("Work") for the English print and electronic formats of the 2019 Thesis of Aislinn Conway ("the Purpose");

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The parties hereto have executed this Agreement, effective the last date below:

The Hospital for Sick Children
555 University Avenue
Toronto, Ontario M5G1X8

Signature: 
By: Kelly McMillen
Date: May 3, 2019

Aislinn Conway
BORN Ontario - CHEO Research Institute,
401 Smyth Road, Ottawa ON K1H 8L1.

Signature: 
Date: May 6, 2019

APPENDIX 4.1 FOCUS GROUPS AND INTERVIEW GUIDE



Topic	Question
Introduction	<ol style="list-style-type: none"> 1. Can you please introduce yourself and state your job title and department?
Barriers and facilitators to attending and presenting at Evidence Rounds	<p><i>Attendance:</i> You have attended at least one Evidence Rounds session.</p> <ol style="list-style-type: none"> 2. Why did you decide to attend? 3. What factors have enabled/would enable you to attend? 4. Certificates of attendance / participation were requested by staff and have been sent to those who attended the last 3 sessions. Do you think they may motivate staff to attend? 5. Lunch from Mr Waffle is provided at each session. What do you think about this? 6. What factors have prevented/would prevent you from attending? <p><i>Participation (presenting):</i></p> <ol style="list-style-type: none"> 7. Why did you decide to present? <p style="text-align: center;"><u>or</u></p> <p>What has prevented you from presenting?</p>
Sustainability Capacity building	<p>The next Evidence Rounds session, will be the sixth and final one that I will be working on.</p> <ol style="list-style-type: none"> 8. Would you like to see it continue into the future? 9. If so, what do you think will have to happen for it to be delivered over the long-term? 10. If not, and we asked you to design it, what would you like to have instead?
Dissemination goal 1: Increasing the reach to a variety of audiences	<ol style="list-style-type: none"> 11. How did you first hear about Evidence Rounds? 12. Are you aware of the dedicated Evidence Rounds website?

Topic	Question
	<p>13. If so, have you visited it and what do you think about it?</p> <p>As well as the website, I also communicated and disseminated information and evidence to you using:</p> <ul style="list-style-type: none"> • email reminders from your colleagues • additional emails from myself • posters hung in staff areas to notify staff of upcoming sessions • a desktop shortcut to the website has been added to the pc in the neonatal unit • Social media accounts on Facebook and Twitter <p>14. How did you find these?</p> <p>15. Which was most/least useful?</p> <p>16. Can you suggest other methods that might be useful to you?</p> <p>17. Other staff have suggested using WhatsApp groups or webtext. What do you think about these?</p>
<p>Dissemination goal 2: Increasing <i>motivation</i> to use and apply the information</p>	<p>18. What do you think of Evidence Rounds and applying evidence to your practice?</p>
<p>Dissemination goal 3: Increasing the <i>ability</i> to use and apply the evidence</p>	<p>19. Do you think initiatives like Evidence Rounds increase your ability to use and apply the evidence? If yes, what specifically? If not, why not?</p>
<p>Ending</p>	<p>20. Overall, what do you think worked well in relation to Evidence Rounds and what might be improved for future initiatives?</p>

APPENDIX 4.2 PARTICIPANT INFORMED CONSENT PACKAGE



INFORMED CONSENT FORM FOR HEALTH CARE PROFESSIONALS

This informed consent form is for health care professionals (HCPs) at University Hospital Galway who are invited to participate in the following study:

Study Title	Evidence Rounds: a targeted initiative to disseminate research evidence to health care professionals
Researchers	Aislinn Conway & Professor Declan Devane
Funding/Sponsorship:	<ul style="list-style-type: none"> • Nursing & Midwifery Planning & Development Unit (NMPDNU) Nursing and Midwifery Innovation Initiatives Funding • Health Research Board Trials Methodology Research Network • National University of Ireland Galway

This Informed Consent Form has two parts:

- Participant Information Leaflet (containing details of the study)
- Participant Consent Form (to sign if you choose to participate)



Part I: Participant Information Leaflet

Introduction

Title of study

Evidence Rounds: a targeted initiative to disseminate research evidence to health care professionals

Study objective

This study aims to improve the understanding of determinants as experienced by health care professionals (HCPs) in relation to attending and participating in initiatives such as Evidence Rounds.

Invitation to take part in the study

You are being invited to participate in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. This Participant Information Leaflet will inform you about the purpose, and the potential risks and benefits of the study. If you agree to participate you will be required to sign a Participant Consent Form. If you do not understand any of the words or concepts used, please let us know and we will be happy to make clarifications or answer questions at anytime.

Purpose of the research

Research Question

What are the barriers and facilitators experienced by HCPs in relation to attending and participating in targeted educational initiatives to promote evidence informed practice?

Background

The focus of dissemination research is on examining strategies used to communicate and spread information to targeted users. In studying Evidence Rounds as a multi-component dissemination strategy, this doctoral project aims to examine the process of designing, implementing and developing an initiative targeted at health care professionals to promote and facilitate evidence informed practice at University Hospital Galway (UHG). We want to learn more about the barriers and facilitators to initiatives such as Evidence Rounds experienced by you so that we can have a greater understanding of how to design and implement successful initiatives in the future. Your participation is likely to help us find out more about how to implement initiatives to communicate and disseminate research evidence to HCPs.

Participant Selection

You are being invited to take part in this research study because you have attended at least one Evidence Rounds session. We are asking you to help us learn more about communicating and disseminating evidence to health care professionals. Your experience as a health care professional can contribute much to our understanding and knowledge of implementing initiatives to reduce the knowledge to action gap and promote evidence informed practice.

Duration of Study:

This research will involve your participation in a focus group and/or an interview each

of which may last up to one hour.

Participation- what it involves

Your participation in this research is entirely voluntary. You should only take part in this research if you do wish to do so, and choosing to refuse participation will not lead to any negative consequences or have any bearing on work-related evaluations or reports. You may stop participating in the focus group/interview at any time.

If you accept our invitation, you will be provided with a copy of this information leaflet to read and you will be asked to sign a Participant Consent Form. We will contact you to arrange a suitable time, date and location for a one to one interview and/or a focus group with 2-8 other professionals. Aislinn Conway and a moderator will guide this discussion. We will start by making sure that you are comfortable with participation. At this point, we can also answer questions or provide clarifications about the research.

Principle topics for discussion include: your experience of having attended or taken part in Evidence Rounds and your perceptions of barriers and facilitators to your participation in an initiative like this.

All interviews will be audio-recorded and written notes will be taken. You do not have to share any information that you are not comfortable if you are not comfortable doing so. If you do not wish to answer a question during the discussion, you may say so and the interviewer will move on to the next question. You do not have to give us a reason for not responding to a question, or for refusing to take part. You may change your mind later and stop participating, even if you agreed earlier.

Reimbursements

You will not be offered any monetary incentive to take part in this research. We do not anticipate that any reimbursements for expenses incurred as a result of participation in the research will be required.

Confidentiality

We will not ask you to share personal and confidential information. The research team will protect your privacy and confidentiality at all stages of the research process. We will not share information about you to anyone outside of the research team. Any information about you will have a number on it instead of your name. Only the researchers will know what your number is and we will ensure that it will not be shared with or given to anyone else. The research findings will be shared more broadly, for example, through publications and conferences. The entire focus group/interview will be audio-recorded. The information recorded is confidential, and no one except the research team and a transcriber will have access. The digital recordings and electronic files will be kept on a password-protected computer in NUI Galway

The following applies if you are participating in a focus group:

We will ask each of you to keep what was said in the group confidential. You should know, however, that we cannot stop or prevent participants who were in the group from sharing things that should be confidential.

Who to Contact

If you have any questions, please contact:

Name: Aislinn Conway, PhD Fellow

Address: Health Research Board Trials Methodology Research Network, 1st floor
School of Nursing and Midwifery, National University of Ireland, Galway

Appendices

Email: a.conway18@nuigalway.ie

This proposal has been reviewed and approved by Galway Clinical Research Ethics Committee, whose task it is to make sure that research participants are protected.

Thank you for taking time to read this information leaflet



Part II: Participant Consent Form (non-medical research)

Participant Identification Number: _____ (to be completed by researcher)

I have been invited to participate in this study focusing on an initiative to disseminate research evidence to health care professionals. I have read the participant information leaflet. I have had the opportunity to ask questions about it. Any questions I have asked have been answered to my satisfaction. By providing my details in the table below I am voluntarily consenting to be a participant in this study.

Participant Details	
Name (Print)	
Signature	
Date (dd/mm/yyyy)	

Statement by the Researcher/person taking consent

I have provided the information leaflet to the potential participant at least 24 hours prior to seeking consent and to the best of my ability and made sure that the participant understands the study.

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

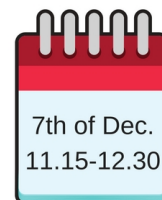
Details of Researcher/Person Taking Consent	
Name (Print)	
Signature	
Date (dd/mm/yyyy)	

APPENDIX 4.3 PARTICIPANT RECRUITMENT LETTER

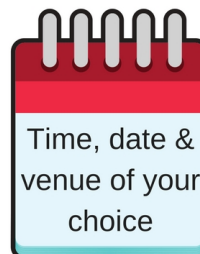
Dear xxxxxxxxxxxx



Focus Groups (Maternity Boardroom)



and/or
Interviews



To find out more or accept the invitation contact Aislinn by email at a.conway18@nuigalway.ie or phone 087 3349755

In collaboration with HSE staff, I have been organising Evidence Rounds for almost 5 months and it is now time to evaluate the initiative. I am organising focus groups and interviews with HSE employees which will be a central part of my PhD project.

I would really appreciate it if you would take part as your perspective is very important. You are invited to take part in a focus group (see schedule in image above) or an interview which will last for a maximum of one hour and can be arranged at a time, date and venue to suit you.

We are asking you to help us learn more about communicating and disseminating evidence to health care professionals (HCPs). Your experience as a HCP can contribute much to our understanding and knowledge of implementing initiatives to reduce the knowledge to action gap and promote evidence informed practice.

I have attached an informed consent form. It contains 2 sections:

1. the participant information leaflet (more details on the study, why it is being carried out and what participation would involve from you)
2. the participant consent form (requires your name, signature and date. If you participate, this will be given to you to complete before the focus group and/or interview)

I hope that you can take part. Please contact me using the details below if you require more information or to accept the invitation.

Kind regards
Aislinn

Aislinn Conway

PhD Fellow

National University of Ireland, Galway | Ollscoil na hÉireann, Gaillimh
Health Research Board – Trials Methodology Research Network (HRB-TMRN)
Moyola Building | Áras Moyola
University Road | Bóthar na hOllscoile
Galway | Gaillimh
Ireland | Éire