

## Ride the Knowledge Wave 6 – #EIE2021

### Current frontiers in Implementation Science

#### Presenters:

**Presentation 1:** Dr Alexandra Ziemann (Centre for Healthcare Innovation Research, City, University of London); Dr Andrew Sibley (Wessex Academic Health Science Network); Dr Sarah Robens & Dr Sam Tuvey (South West Academic Health Science Network); Prof Harry Scarborough (Centre for Healthcare Innovation Research & Cass Business School, City, University of London) – **U.K.**

**Presentation 2:** Dr Leti van Bodegom-Vos, Tessa Rietbergen, Jessica de Graaf, Elske van den Akker-van Marle & Perla Marang-van de Mheen (Department of Biomedical Data Sciences, Leiden University Medical Centre); Ron Diercks (Department of Orthopaedics, University Medical Centre Groningen); Enrike van der Linden-van der Zwaag & Rob Nelissen (Department of Orthopaedics, Leiden University Medical Center); the SMART study group – **Netherlands**

**Presentation 3:** Ass. Prof. Lydia Kwak, Christina Björklund, Irene Jensen & Anna Toropova (Karolinska Institutet); Gunnar Bergström (Karolinska Institutet & Högskola i Gävle); Liselotte Schäfer Elinder (Karolinska Institutet & Stockholm Region); Charlotte Wåhlin (Linköping University); Kjerstin Stigmar (Skåne University Hospital & Lund University); Byron Powell (Washington University) – **Sweden / U.S.A.**

**Presentation 4:** Carrie-Ann Black (King's College London, South London and Maudsley NHS Foundation Trust and National Institute for Health Research); Prof Nick Sevdalis & Dr Lucy Goulding (King's College London – **U.K.**)

**Presentation 5:** Dr Christina Kien & Ursula Griebler (Danube University Krems); Marie-Therese Schultes & Monika Finsterwald (University of Vienna) – **Austria**



## **Presentation 1: Successful strategies to spread a national medicines optimisation programme across the English NHS - A Qualitative Comparative Analysis**

Dr Alexandra Ziemann (Centre for Healthcare Innovation Research, City, University of London); Dr Andrew Sibley (Wessex Academic Health Science Network); Dr Sarah Robens & Dr Sam Tuvey (South West Academic Health Science Network); Prof Harry Scarbrough (Centre for Healthcare Innovation Research & Cass Business School, City, University of London) – **U.K.**

### *Research Aim*

Spreading complex innovations beyond their initial piloting into mainstream services across multiple different contexts remains a challenge. We aimed at identifying spread strategies leading to successful spread of a national medicine optimisation programme across 15 regions in the English National Health System (NHS).

### *Methods*

The study applied a mixed-method, comparative case study design analysing a national medicines optimisation programme that was spread across the English NHS between 2018 and 2020. The programme aimed at improving the electronic transfer of information on patients' medicines after discharge from hospitals to the patients' nominated community pharmacy. In a first step, we conducted semi-structured interviews with 18 operational and senior management staff involved in spreading the programme at 15 Academic Health Science Networks (AHSN). The 15 AHSNs have the official mandate from NHS England to facilitate the spread of national programmes at the regional level. Interviews were transcribed verbatim and analysed together with further implementation documents to derive qualitative themes on strategies applied to spread the national programme. In a second step, we applied a Qualitative Comparative Analysis (QCA) to identify any causal links between the qualitative spread strategy themes and quantitative spread outcome metrics reported by AHSNs to the National Metrics Dashboard. Successful spread was defined as 50% of regional NHS organisations having adopted the national programme at the end of the programme period. The QCA was aimed at identifying (combinations of) particularly successful spread strategies and any sufficient or necessary strategies leading to successful spread.

### *Key Findings*

As AHSNs are facilitating and not 'doing' spread, commonly applied spread strategies were focussing on relational and communication strategies to engage their regional NHS system organisations and support them in embedding the programme. Strategies were also focusing on fostering intersectoral collaboration between hospitals and community pharmacy. There was considerable variation in spread success across the 15 regions (25%-63%). We found that the combination of two strategies were essential to the successful spread: a non-delayed start into the spread programme and employing a (senior, regional) clinical expert, in this case a pharmacist, at the AHSN to facilitate the spread of the programme. Neither of these factors alone led to successful spread and the absence of either one led to unsuccessful spread.

### *Discussion*

How are spread strategies different from implementation strategies? What role can regional spread strategies play in reducing national variance in spread success?

## Presentation 2: De-implementation of Magnetic Resonance Imaging (MRI) and arthroscopies in degenerative knee disease

Dr Leti van Bodegom-Vos, Tessa Rietbergen, Jessica de Graaf, Elske van den Akker-van Marle & Perla Marang-van de Mheen (Department of Biomedical Data Sciences, Leiden University Medical Centre); Ron Diercks (Department of Orthopaedics, University Medical Centre Groningen); Enrike van der Linden-van der Zwaag & Rob Nelissen (Department of Orthopaedics, Leiden University Medical Center); the SMART study group – **Netherlands**

### *Research Aim*

Dutch “Choosing Wisely” recommendations were developed to reduce routine use of MRI and arthroscopy in degenerative knee disease. An active de-implementation strategy was developed to effectuate these CW-recommendations in orthopaedic practice. This study aims to evaluate the effectiveness of the developed de-implementation strategy.

### *Methods*

The de-implementation strategy is executed in 13 orthopaedic centres distributed across the Netherlands in 2017. The effectiveness of the strategy was evaluated in a difference-in-difference time trend analysis using monthly patient data from Dutch Hospital Data (from January 2016 till December 2018). The analysis involved 13 Dutch participating (intervention) hospitals and varying numbers of non-participating (control) hospitals (n=49 in 2016, n=55 in 2017 and n=54 in 2018).

### *Key Findings*

We identified 136,446 patients with degenerative knee disease, 32,163 of whom were patients in the 13 orthopaedic centres that received the de-implementation strategy. The percentage of patients with degenerative knee disease and an MRI/arthroscopy declined significantly (respectively,  $\beta = -0.15$ ,  $p < .001$  and  $\beta = -0.19$ ,  $p < .001$ ) across the Netherlands throughout the study period. The decline in the percentage of patients with degenerative knee disease and an MRI or an arthroscopy before and after the execution of the de-implementation strategy did not differ significantly between the intervention and control hospitals. It seems that the observed reduction in the intervention hospitals was due to a general downward trend in MRI and arthroscopy use in degenerative knee disease rather than the result of the de-implementation strategy.

### *Discussion*

What factors could have been responsible for the secular time trend? Can we keep control groups naïve for de-implementation goals?

## **Presentation 3: Understanding implementation mechanisms: a methodological presentation with focus on conceptualisation and specification of strategies, mechanism, and outcomes**

Ass. Prof. Lydia Kwak, Christina Björklund, Irene Jensen & Anna Toropova (Karolinska Institutet); Gunnar Bergström (Karolinska Institutet & Högskola i Gävle); Liselotte Schäfer Elinder (Karolinska Institutet & Stockholm Region); Charlotte Wåhlin (Linköping University); Kjerstin Stigmar (Skåne University Hospital & Lund University); Byron Powell (Washington University) – **Sweden / U.S.A.**

### *Research Aim*

Using our ongoing implementation research study in schools, we will present how we conceptualized the implementation mechanisms that we are testing in our randomized waiting-list controlled trial, which compares the effectiveness of two implementation strategies for implementing the Guideline for the prevention of mental ill-health at the workplace in schools.

### *Methods*

Through a stepwise approach we conceptualized potential implementation mechanisms through which we hypothesize that our implementation strategies will work. In step 1, barriers and facilitators were identified, in step 2 implementation strategies were chosen to target the pre-identified barriers and facilitators, in step 3 implementation mechanisms were specified. Mechanisms include hypothesized mediators originating from the individual behaviour change theory COM-B in combination with the Theoretical Domains Framework. Moreover, we specified potential moderators, including implementation leadership, which may impact the level of influence of the strategies.

### *Key Findings*

This presentation will have a methodological focus.

### *Discussion*

What are key challenges when specifying implementation mechanisms? What are the dos and don'ts of testing implementation mechanisms?

## **Presentation 4: What are the relationships between contexts, mechanisms and outcomes which underpin the ‘dynamic sustainability’ of a complex health care intervention across a system?**

Carrie-Ann Black (King’s College London, South London and Maudsley NHS Foundation Trust and National Institute for Health Research); Prof Nick Sevdalis & Dr Lucy Goulding (King’s College London – **U.K.**

### *Research Aim*

Whilst there is agreement within the implementation science arena that sustainability is a key outcome, limited attention has been given to understanding how to sustain complex interventions in practice. Historically, the emphasis has been on evaluating and exploring the initial implementation, with time and budgetary constraints often meaning that longer term sustainability has not been a focus. To understand what affects the determinants of sustainability, we need to understand the relationships between determinants. To address this gap, we present a review of the evidence base which aims to contribute to our understanding of these determinants and how they interrelate in different contexts.

### *Methods*

A systematic realist review of the literature was undertaken, to examine the relationships between contexts, mechanisms and outcomes which underpin the ‘dynamic sustainability’ of a complex health care intervention across a system. Papers were thematically analysed and synthesised to create a series of Context-Mechanism-Outcome Configurations (CMOCs). Testable hypotheses based on these configurations were derived for further research.

### *Key Findings*

539 studies were screened, of which 17 studies were included in the review. Projects were initiated in a variety of healthcare settings and represented a range of complex interventions. The findings include a series of 17 CMOCs each illustrating how, triggered by specific contextual factors a combination of programme resource and stakeholder reasoning led to specific outcomes.

### *Discussion*

How should we be assessing dynamic sustainability? Who should be assessing dynamic sustainability?

## Presentation 5: Measuring Implementation Outcomes

Dr Christina Kien & Ursula Griebler (Danube University Krems); Marie-Therese Schultes & Monika Finsterwald (University of Vienna) – **Austria**

### *Research Aim*

The aim of the presentation is to discuss measurement issues in implementation science, with a special focus on instruments that measure implementation outcomes. Specifically, the presentation will focus on (1) identifying and assessing psychometrically sound existing instruments that measure implementation outcomes in a particular language and (2) translating and validating well-established English implementation instruments for their use in German speaking countries.

### *Methods*

- (1) Based on a systematic review, we identified instruments that are available in German language and measure at least one construct described in the Consolidated Framework for Implementation Research (Damschroder et al., 2009) or Implementation Outcomes Framework (Proctor et al., 2011). We rated their psychometric properties using evidence-based assessment criteria (Lewis et al., 2015, 2019).
- (2) Following cross-cultural survey guidelines, we translated the English versions of three implementation outcome measures (Acceptability of Intervention Measure, Intervention Appropriateness Measure and Feasibility of Intervention Measure, Weiner et al., 2017) into German. Subsequently, we tested their structural validity and internal consistency in two different samples of secondary (n=142) and primary (n=61) schoolteachers.

### *Key Findings*

Our studies showed that (1) there is a lack of psychometrically sound implementation measures in the German language and (2) our translated versions of three implementation measures can successfully be applied in health promotion research.

### *Discussion*

What are the most relevant measurement issues in implementation science and how can they be tackled? Do measurement issues differ across contexts (setting, interventions, countries, ...)?