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Dagu Implementation Science

Workshop II

June 9-13, 2018

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Purpose of the workshop

To become familiar with concepts and methods within the area of implementation science and to individually develop and defend an implementation science project within the Dagu PhD plans.

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Today

- RECAP IMPLEMENTATION SCIENCE
  - (Re-)INTRODUCTION TO IMPLEMENTATION SCIENCE
  - WHAT INFLUENCES IMPLEMENTATION?

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The available evidence

- Pubmed contains 28 million articles.
- Cochrane (1979): 14 trials published each year.
- There are now 75 trials, and 11 systematic reviews of trials, per day - a plateau has not been reached.

Bastian, PLOS Med, 2010

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(Re)INTRODUCTION TO IMPLEMENTATION SCIENCE

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What does implementation mean?

- Implementation is the process of putting a decision or plan into effect
- Achievement of agreed implementation/project goals

- Implementation concerns people (staff, patients, leaders, administrators....) to change their behavior:
  - Starting to do something new
  - To cease the current behaviour
  - Both

Implementation ≠ Spread

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The challenge

- It has been widely reported that evidence-based practice take on average 17 years to be incorporated into routine general practice in health care

Balas et al 2000, Grant et al 2008, Morris et al 2011

- …and only about half of evidence-based practices ever reach widespread clinical usage

Balas et al 2000

- There is clear need to develop specific strategies to promote the uptake of evidence-based practice into general clinical usage

Moses et al 2015

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WHO guidance on 'how to implement'?

- Content analysis of the implementation sections of 123 WHO guidelines (2007-2015)
- Findings: mentioned implementation techniques 800 times – mostly very briefly
- *Evidence-based active implementation methods were generally neglected /…/ Many guidelines contained implementation sections that were identical to those used in older guidelines produced by the same WHO technical unit.*

Wang et al. Implementation Science, 2016

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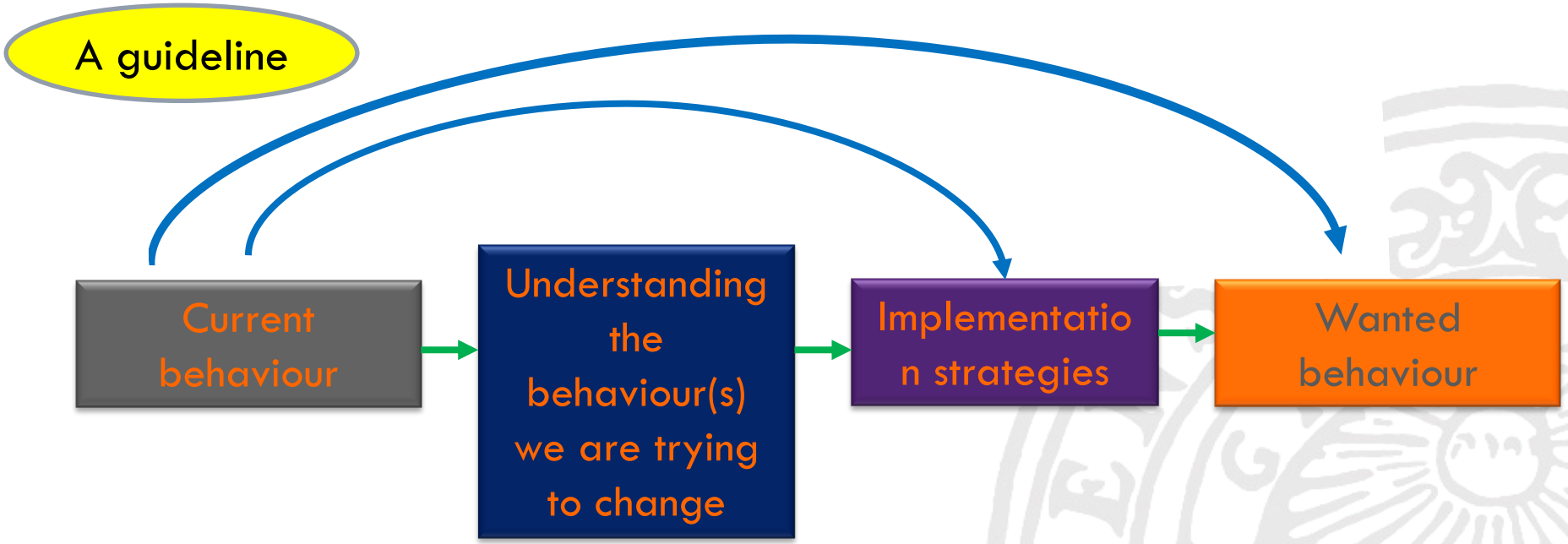
So what happens?

The ISLAGIATT principle



It **S**eemed **L**ike **A** **G**ood **I**dea **A**t **T**he **T**ime

Eccles, BMC Imp Sci, 2012

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Implementation science definition

"Implementation science is the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health care"

Eccles and Mittman, Impl Sci 2006

Implementation science definition cont.

A science creating generalizable knowledge that can answer central questions such as:

- Why do established programs lose effectiveness over time?
- Why do tested programs exhibit unintended effects when transferred to a new setting?
- How can multiple interventions be effectively packaged to capture cost efficiencies and to reduce the splintering of health systems into disease-specific programs?"

Malaria Free Future

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So what does it do?

'supports innovative approaches to identifying, understanding, and overcoming barriers to the adoption, adaptation, integration, scale-up and sustainability of evidence-based interventions, tools, policies, and guidelines'

National Institutes of Health, 2015

How can your thesis inform:

1. the MoH?
2. the scientific community?
3. The global level stakeholders?

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So what does it do? Cont.

- Develop reliable strategies for improving health related processes and outcomes; facilitate widespread adoption of these strategies.
- Produce insights and generalisable knowledge regarding implementation process, barriers, facilitators, strategies.
- Develop, test and refine implementation theories and hypotheses; methods and measures.

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Concepts

Evidence/Knowledge/Innovation

- New treatment for patients
- New service delivery model (team based, triage etc)

Implementation strategy

- Help clients and providers to use what is new
- Enable organizations to change their service delivery model
- Enable what is new to reach policy

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Concepts cont.

Implementation/implementation strategy

- Actions and supports provided to enable people or organizations to change

  E.g. new wound care project team, training, providing feedback.

Implemented

- Establish a change in practice, or to a service, or to a patient or population.

  E.g. routine wound-care procedure

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Concepts cont.

Sustainability

- Will it last? Can the change or results be maintained?

Spread or scale-up

- Copying something found effective + the implementation strategy in another place or with more patients

Efficacy * Implementation (in context) = Effectiveness

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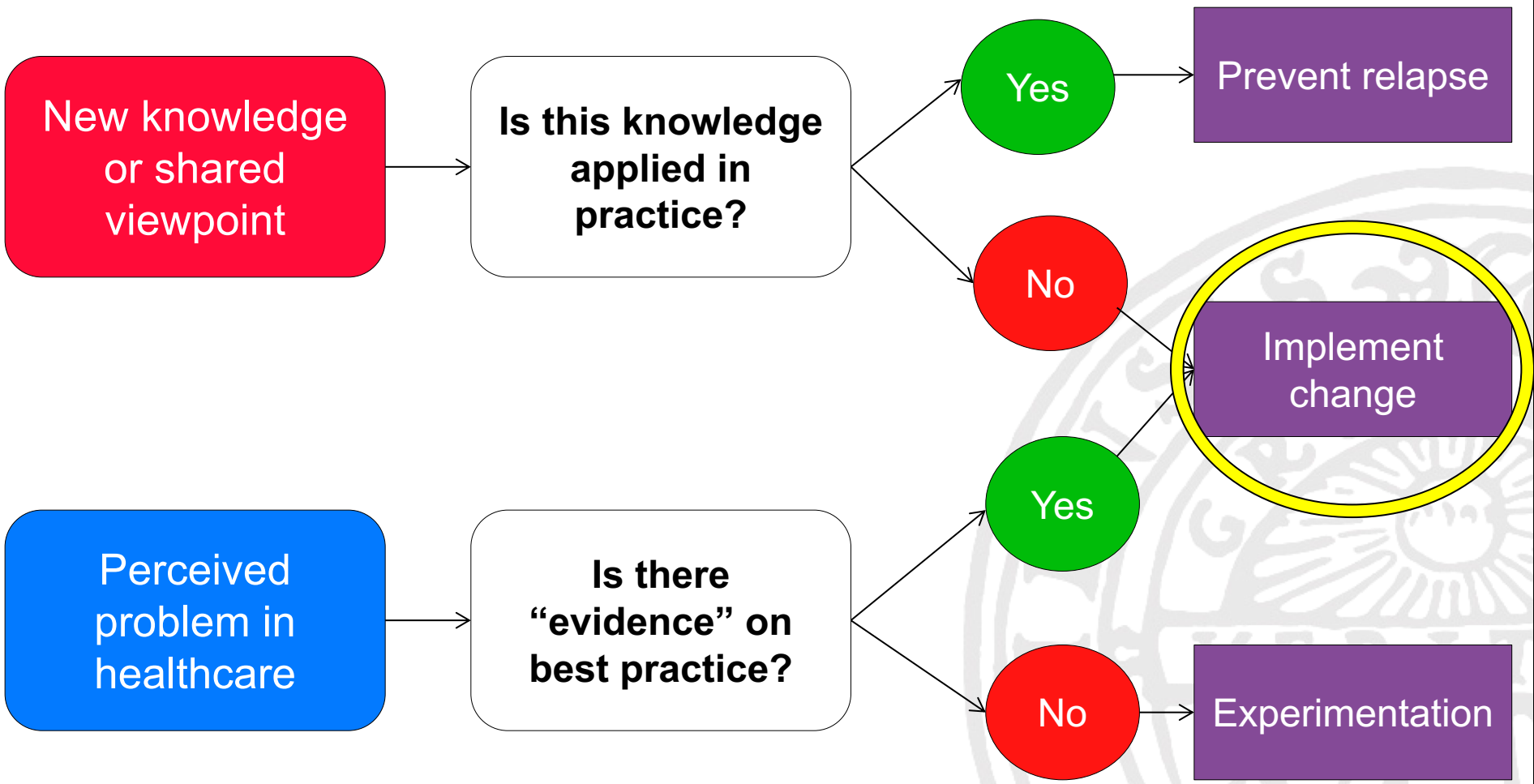
Implementation: when?



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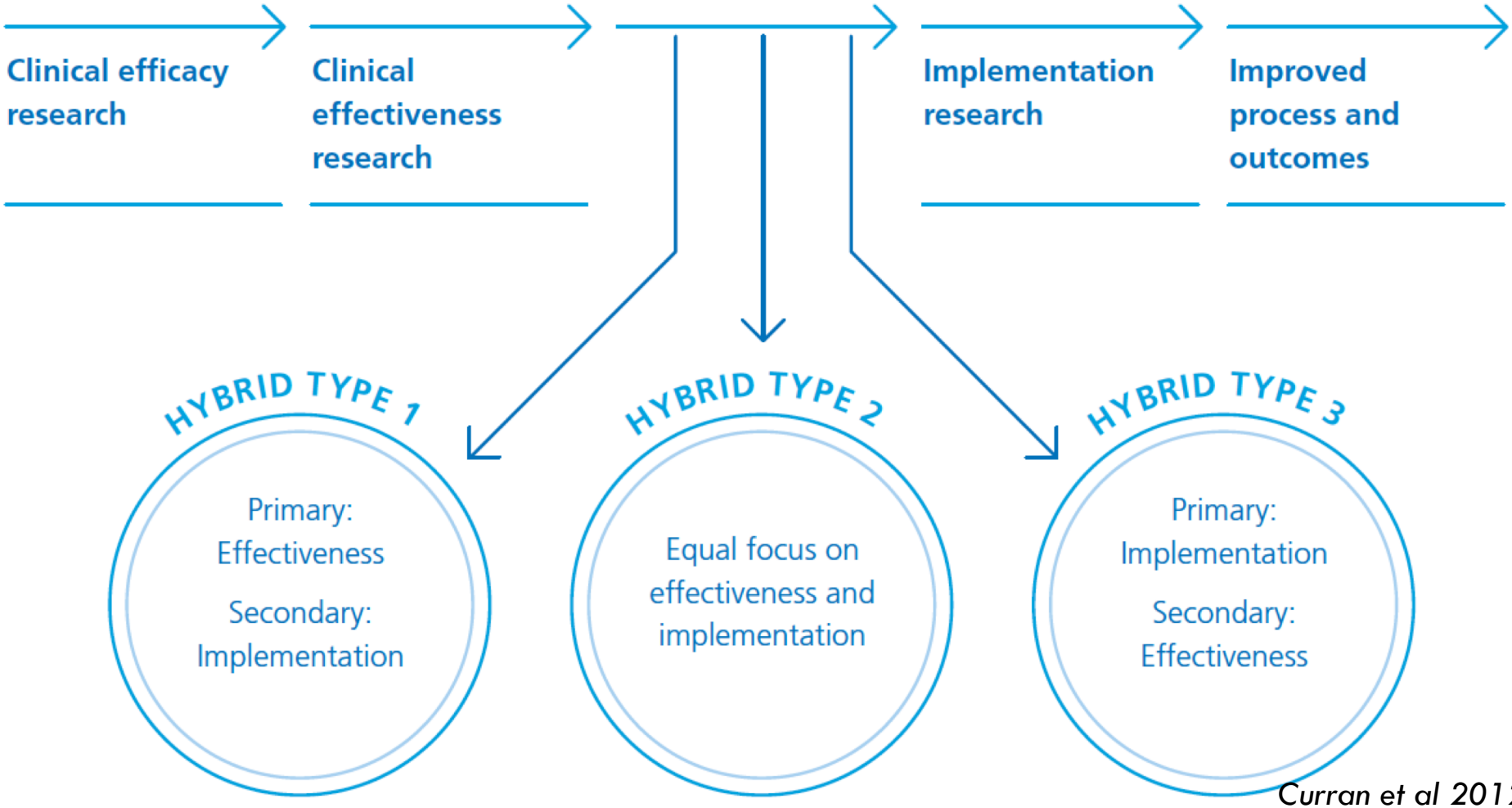
Design features of effectiveness vs implementation research

	Effectiveness research	Implementation research
Aim: evaluate a/an	Clinical intervention (i.e. clinical/therapeutic practice, or delivery system/organizational arrangement, or health promotion activity)	Implementation strategy (or a "bundle" of implementation strategies)*
Typical unit of analysis	Patient	Healthcare professional, clinical unit, system
Typical outcomes	Clinical outcomes (e.g. patient symptoms and functioning, quality of life, cost effectiveness)	Provider and/or system level behaviours (e.g. rates of adoption, fidelity to clinical intervention)
Typical unit of randomisation	Patient, clinical unit	Healthcare professional, clinical unit, system

**In addition to evaluating an implementation strategy, implementation research might be concerned with, for example, identifying barriers and facilitators to implementation and developing and/or testing implementation theories*

Effectiveness-implementation hybrid designs

Where in the continuum does OHEP fit?



Curran et al 2012

Social or system interventions for perinatal survival cont.

Reduce perinatal mortality in principle, but lack evidence of effect at a population level

- Task shifting providers of obstetric care
- Transport systems for access and emergency transfer
- Maternity waiting homes
- Conditional cash transfers or voucher systems for maternity care
- Training health workers in essential newborn care
- Training and support for traditional birth attendants

Appropriate design: *Hybrid type 1*

Osrin and Prost. Arch Dis Child. 2010

Social or system interventions for perinatal survival cont.

Lack strong evidence of effect on perinatal mortality at a population level, but are unequivocally beneficial for other reasons

- Institutional perinatal care audit
- Elimination or reduction of user fees
- Counting perinatal deaths: strengthening systems to report stillbirths and neonatal deaths

Appropriate design: *Hybrid type 2*

Osrin and Prost. Arch Dis Child. 2010

Social or system interventions for perinatal survival

Definitely reduce perinatal mortality at population level

- Education for women
- Birth preparedness on the part of women & their families
- Skilled care at delivery ('skilled birth attendance')
- Institutional delivery where basic emergency obstetric care is available and comprehensive care is available through a transfer system
- Home visits after delivery by community health workers
- Community mobilisation initiatives to build awareness of perinatal health and link families and health facilities

Appropriate design: *Hybrid type 3*

Osrin and Prost. Arch Dis Child. 2010

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Bridging the gap

Bridging the know-do gap is one of the most important challenges for public health in this century. It also poses the greatest opportunity for strengthening health systems and ultimately achieving equity in global health.

WHO, Bridging the "Know–Do" Gap, 2006

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Yet…

- 97% of research grants for improved child health in "developing" countries focus on developing new technologies compared to researching how available technologies should be delivered/utilized

Leroy et al. Am journal of public health 2007

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Types of implementation research

1. Quantify gap between routine and potential care with proven or promising interventions,
2. Barrier analyses to understand hinders for change to occur
3. Describe what they do to implement a change
4. Enable successful adaptation and implementation of interventions
5. Assess implementation and outcomes
6. Understand sustainability of changes

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Challenges

How to …

- Measure implementation in healthcare (knowledge/skills/practice)
- Tailor implementation strategies
- Include context in the planning and evaluation
- Measure fidelity of planned interventions
- Achieve sustainable improvement

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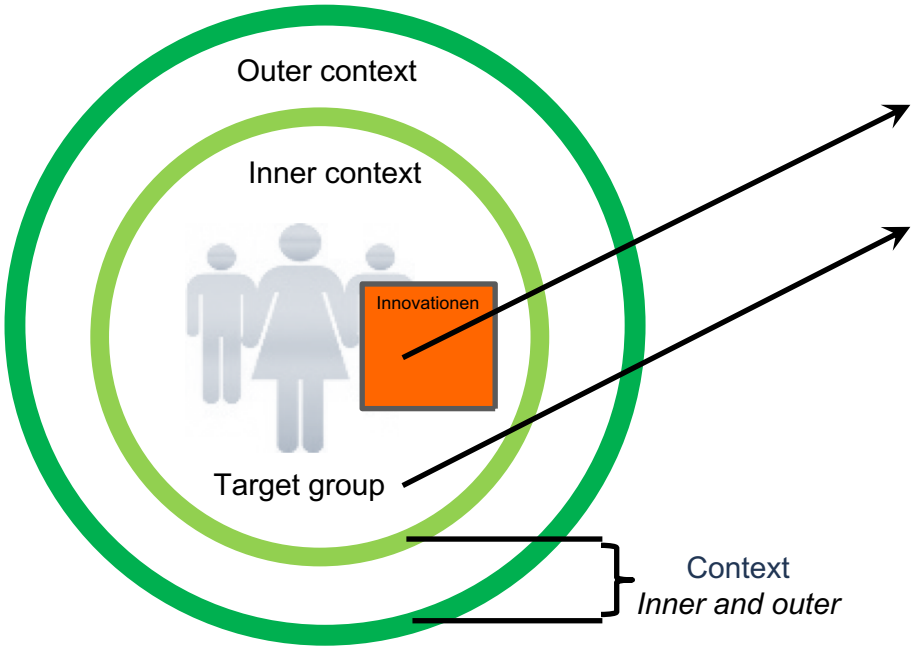
What influences implementation?



Characteristics of the **INNOVATION**

Characteristics of the **USER**

Characteristics of the **CONTEXT** in which the innovation is implemented

Consolidated Framework for Implementation Research – CFIR. Damschroder et al., 2009, Imp Sci
Integrated Promoting Action on Research Implementation in Health Services – i-PARIHS. Harvey and Kitson, 2015, Imp Sci

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Characteristics of the innovation

CFIR and i-PARIHS

- Underlying knowledge sources
- Clarity of the innovation
- Degree of fit with existing practice and values (compatibility or contestability)
- Degree of novelty
- Useability
- Relative advantage
- Trialability
- Observable results

Consolidated Framework for Implementation Research – CFIR. Damschroder et al., 2009, Imp Sci
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Characteristics of the users

CFIR and i-PARIHS cont.

- Motivation
- Values and beliefs
- Goals
- Skills and knowledge
- Time, resources and support
- Local opinion leaders
- Collaboration and teamwork
- Existing networks
- Learning environment
- Power and authority
- Presence of boundaries

Several 'layers'

- health workers/patients
- Individual/group level

Consolidated Framework for Implementation Research – CFIR. Damschroder et al., 2009, Imp Sci
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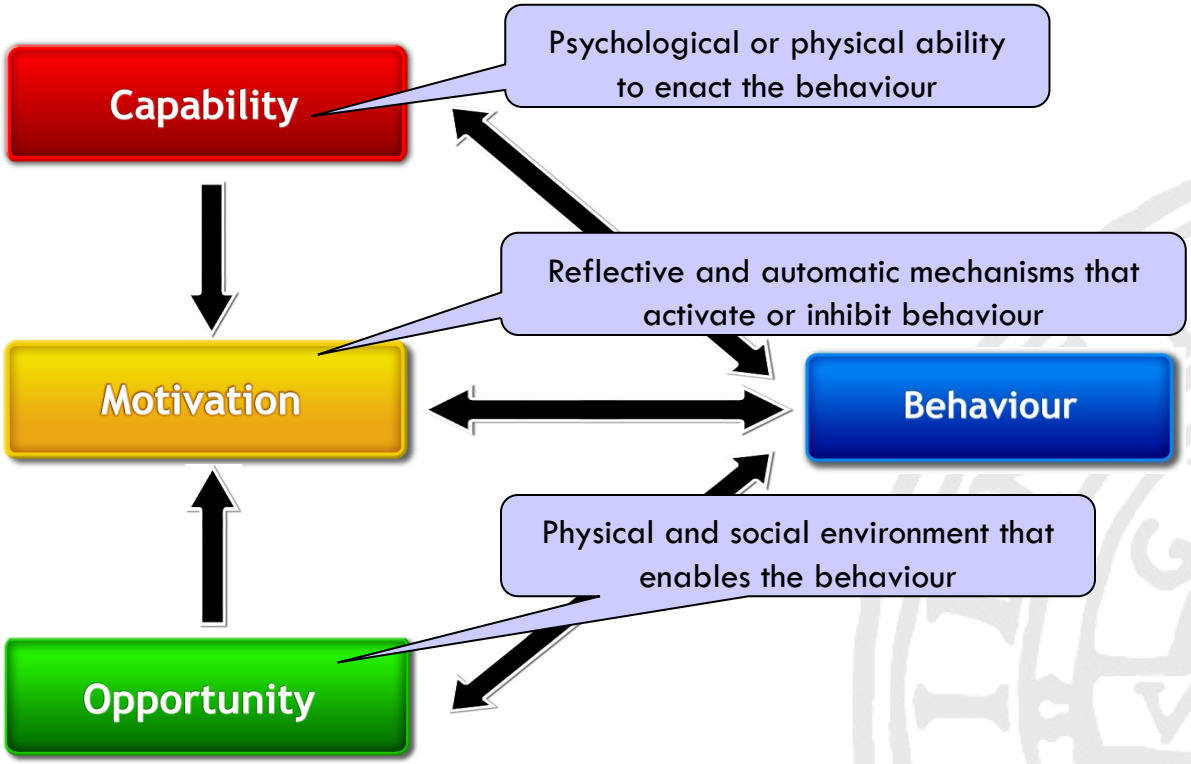
Changing behaviours

The COM-B model – behavioural analysis



Michie et al, Implementation Science, 2011

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Characteristics of the inner context

CFIR and i-PARIHS cont.

- Formal and informal leadership support
- Culture
- Past experience of innovation and change
- Mechanisms for embedding change
- Evaluation and feedback processes
- Organisational priorities
- Leadership and senior management support
- Culture
- Structure and systems
- History of innovation and change
- Absorptive capacity
- Learning networks

(practice setting/organizational level)

Consolidated Framework for Implementation Research – CFIR. Damschroder et al., 2009, Imp Sci
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Characteristics of the outer context

CFIR and i-PARIHS cont.

- Organisational priorities
- Policy drivers and priorities
- Incentives and mandates
- Regulatory frameworks
- Environmental (in)stability
- Inter-organisational networks and relationships

Consolidated Framework for Implementation Research – CFIR. Damschroder et al., 2009, Imp Sci
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The implementation strategy

'methods or techniques used to enhance the adoption, implementation, and sustainability of a clinical program or practice'

Proctor et al, Implement Sci, 2103

As far as optimizing quality and safety of patient care is concerned, there is no convincing evidence that any particular strategy is more effective than another in any particular situation.

80% initatating – 20% maintainance

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ASSIGNMENT

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Info about assignment

Oral presentation Wednesday 13th June

2 page document

- Title
- Aim and research question
- Background and rationale for the study
- Theory/framework, study design
- Methods, ethical considerations and timeline

Resources: USB, supervisors and ambulating Anna

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Key (reviewer) questions

- Does the research clearly aim to answer a question concerning implementation?
- Does the research clearly identify the primary audiences for the research and how they would use the research?
- Is there a clear description of what is being implemented (for example, details of the practice, programme, or policy)?
- Does the research involve an implementation strategy? If so, is it described and examined in its fullness?

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Key (reviewer) questions

- Is the research conducted in a "real world" setting? If so, is the context and sample population described in sufficient detail?
- Does the research appropriately consider implementation outcome variables?
- Does the research appropriately consider context and other factors that influence implementation?
- Does the research appropriately consider changes overtime and the level of complexity of the system, including unintended consequences?