

Designing implementation interventions: A systematic and theory informed method

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METHODOLOGY

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Developing theory-informed behaviour change interventions to implement evidence into practice: a systematic approach using the Theoretical Domains Framework

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Abstract

Background: There is little systematic operational guidance about how best to develop complex interventions to reduce the gap between practice and evidence. This article is one in a Series of articles documenting the development and use of the Theoretical Domains Framework (TDF) to advance the science of implementation research.

Methods: The intervention was developed considering three main components: theory, evidence, and practical issues. We used a four-step approach, consisting of guiding questions, to direct the choice of the most appropriate components of an implementation intervention: Who needs to do what, differently? Using a theoretical framework, which barriers and enablers need to be addressed? Which intervention components (behaviour change techniques and mode(s) of delivery) could overcome the modifiable barriers and enhance the enablers? And how can behaviour change be measured and understood?

Results: A complex implementation intervention was designed that aimed to improve acute low back pain management in primary care. We used the TDF to identify the barriers and enablers to the uptake of evidence into practice and to guide the choice of intervention components. These components were then combined into a cohesive intervention. The intervention was delivered via two facilitated interactive small group workshops. We also produced a DVD to distribute to all participants in the intervention group. We chose outcome measures in order to assess the mediating mechanisms of behaviour change.

Conclusions: We have illustrated a four-step systematic method for developing an intervention designed to change clinical practice based on a theoretical framework. The method of development provides a systematic framework that could be used by others developing complex implementation interventions. While this framework should be iteratively adjusted and refined to suit other contexts and settings, we believe that the four-step process should be maintained as the primary framework to guide researchers through a comprehensive intervention

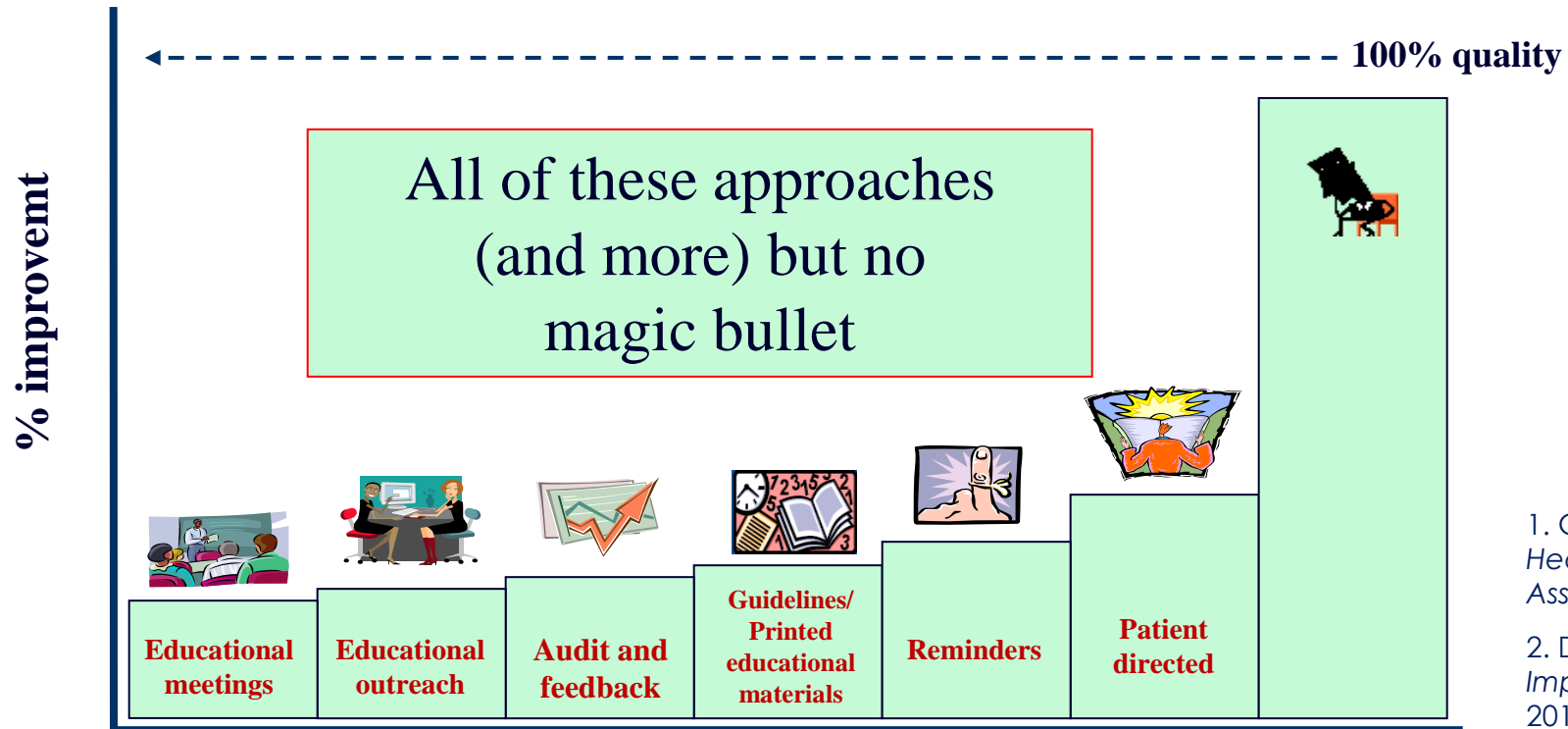
The quality problem...

- Clinical research consistently producing new findings
- Findings won't change outcomes unless adopted:
 - e.g. recent Australian study, patients received recommended care in only 57% of healthcare encounters¹
- “poverty of research” to inform decisions about how to improve the delivery of health care ²
- Don't know what works, when, why and with who...

1. Runciman et al *Med J Aust* 2012;197:100-5

2. Grol et al *BMJ* 2008;336: 74-76

So how can knowledge be translated?

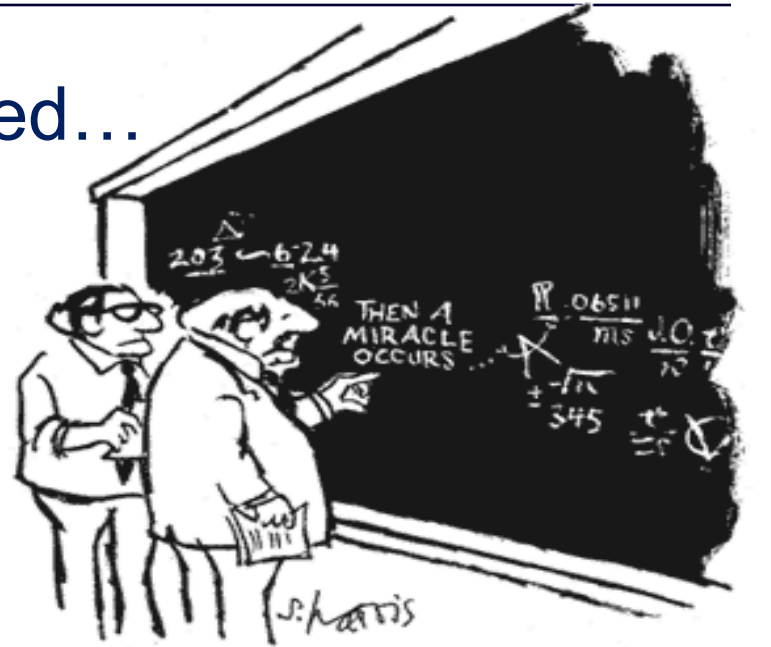


1. Grimshaw et al
Health Tech Assess, 2004;8:1-84

2. Davies et al
Implement Sci, 2010;5:14

Practice change is complex...

So, more careful planning needed...



"I THINK YOU SHOULD BE MORE EXPLICIT HERE IN STEP TWO."

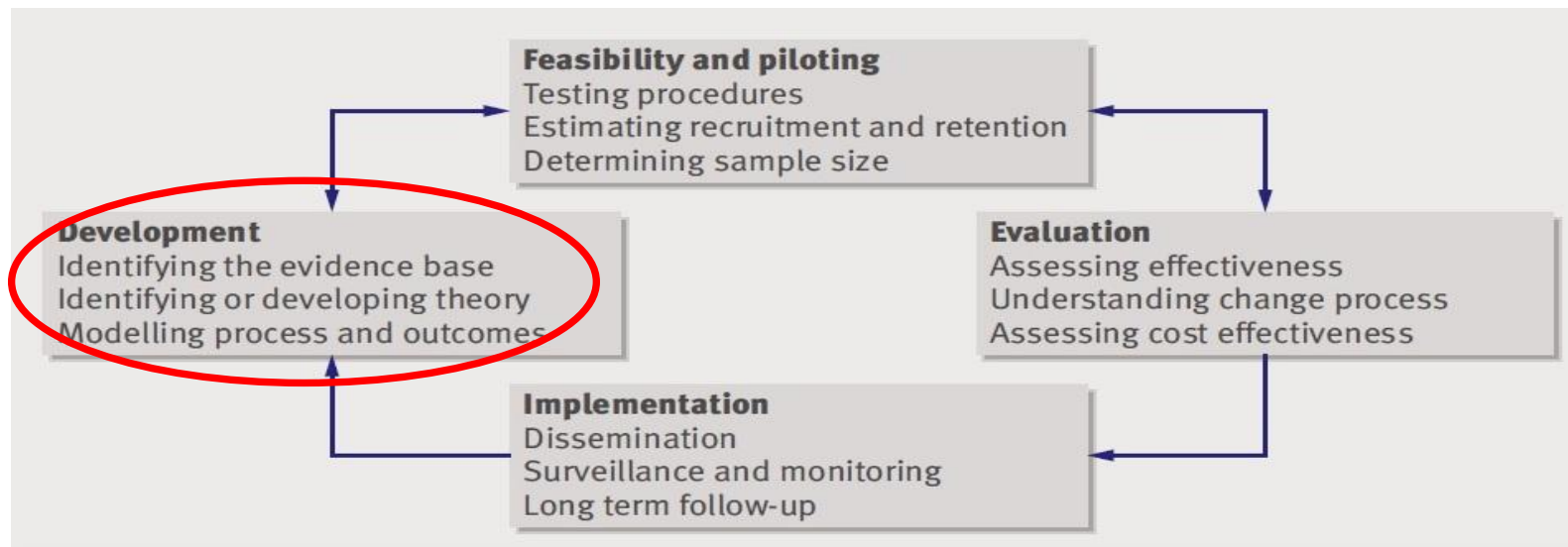
Implementation interventions

- ❑ Usually complex interventions designed to change clinical behaviour (organisational, practitioner or patient/consumer)
- ❑ Lack of a clear rationale for their development
- ❑ Little systematic guidance about how best to develop
- ❑ Design requires a systematic approach with a strong rationale to address professionals, consumers, teams, organisations and wider systems

Grimshaw et al *Health Technol Assess* 2004;8:iii-iv,1-72

UK Medical Research Council:

Developing and evaluating complex interventions



Craig et al Developing and evaluating complex interventions: the new Medical Research Council guidance. *BMJ* 2008;337:a1655

Why use a theory driven approach?

- ❑ Poor justification of choice of intervention and use of theory in implementation research (Davies 2010)
- ❑ A good theory:
 - Helps to prevent overlooking factors that may be important determinants of practice
 - Link theory to outcomes and can explore why, or why not, the intervention was effective
- ❑ A better theoretical underpinning of studies would make this body of research more useful

Davies, Walker & Grimshaw *Imp Sci* 2010

Implementation interventions: How to choose?

□ Theory

- understand factors that might influence behaviour
- underpin choice of possible techniques
- clarify how such techniques might work

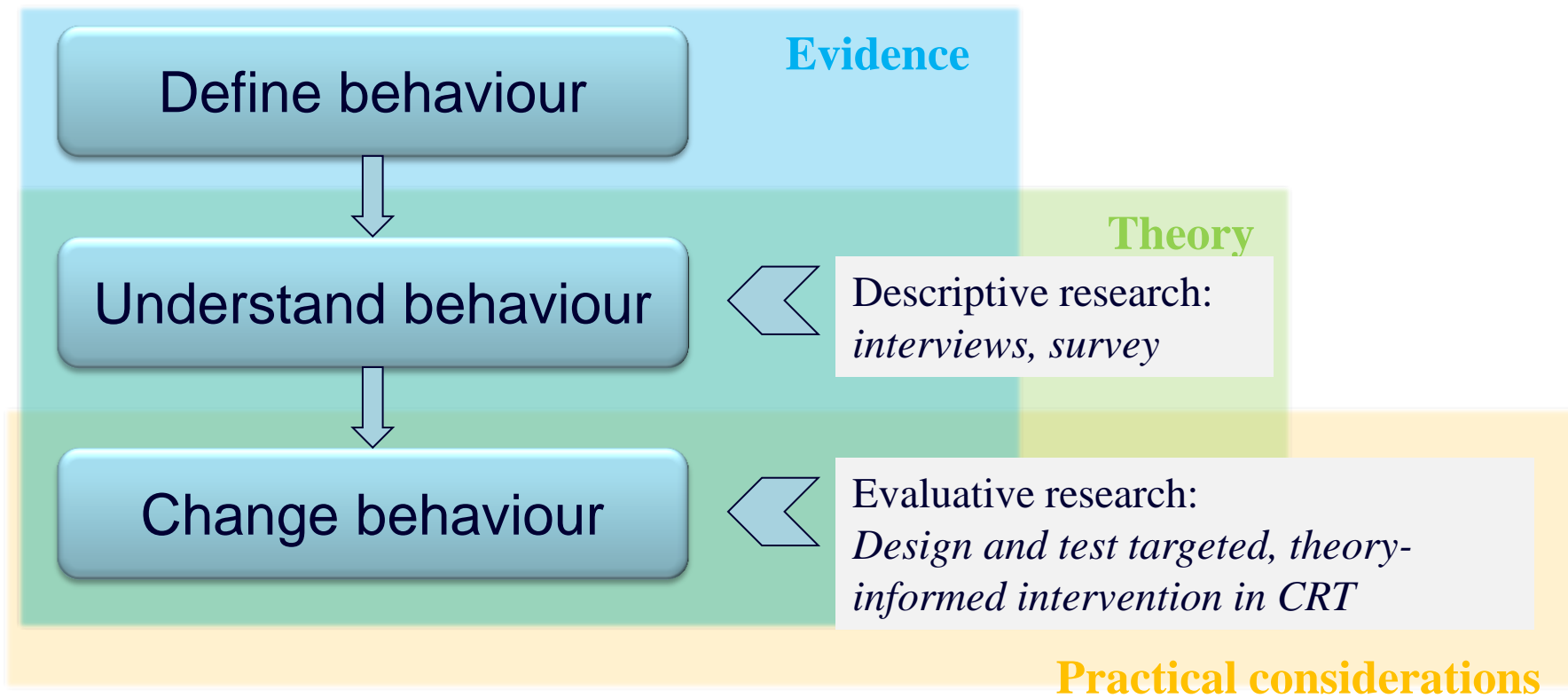
□ Evidence

- inform which clinical behaviours should be changed
- which potential behaviour change techniques and modes of delivery are likely to be effective

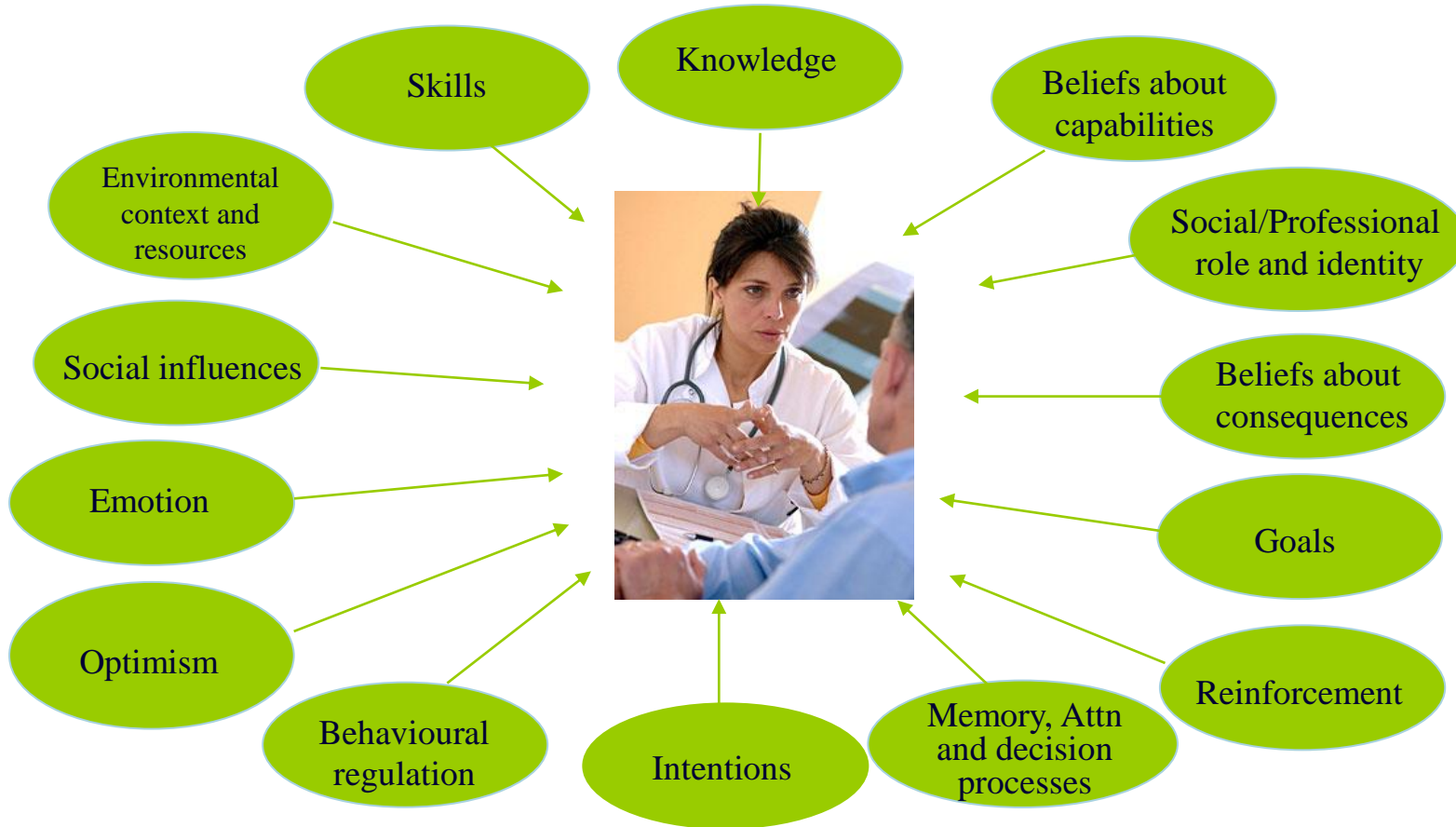
□ Practical issues

- which components are feasible with available resources?
- likely to be acceptable in the relevant setting and to the targeted health professional group?

Our approach to implementation intervention development



Theoretical Domains Framework



Michie et al 2005, *J Qual Safe Health Care*

Cane, O'Connor, Michie. 2012 *Implement Sci*

Step 1: Who needs to do what differently?

Step 2: Using a theoretical framework, which barriers and enablers need to be addressed?

Step 3: Which intervention components could overcome the modifiable barriers and enhance the enablers?

Step 4: How will we measure behaviour change?

1. Identify the evidence-practice gap
2. Specify behaviour change
3. Specify health professional/setting

1. Select theory(ies) likely to inform the pathways of change
2. Use theory(ies), or framework, to identify possible barriers and enablers
3. Use qualitative/quantitative methods to identify

1. Use chosen theory to identify potential behaviour change techniques
2. Identify evidence
3. Feasible, locally relevant, and acceptable intervention

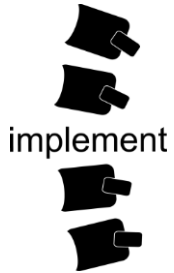
1. Identify mediators of change to investigate proposed pathways of change
2. Appropriate outcome measures
3. Feasibility of outcomes to be measured

Example: acute low back pain



Key recommendations:

- X-rays are not required, except when fracture is suspected
- Patients with acute non-specific LBP should be given advice to stay active



Designing the implementation intervention: example

Step 1: Who needs to do what differently?

GPs need to order less x-rays for people with acute low back pain

Step 2: Using a theoretical framework, which barriers and enablers need to be addressed?

Skills & Beliefs about capabilities: related to negotiating with/reassuring patients that plain x-ray is unnecessary

Step 3: Which intervention components could overcome the modifiable barriers and enhance the enablers?

Modelling;
Behavioural rehearsal;
Role play

Step 4: How will we measure behaviour change?

Attendance at interactive workshops; Self-report of viewing DVD;
Scores on self-efficacy items

Designing the implementation intervention: example

Step 1: Who needs to do what differently?

Beliefs about the role of the GP when managing acute low back pain: x-ray and giving advice to stay active

Step 2: Using a theoretical framework, which barriers and enablers need to be addressed?

Professional role and identity

Step 3: Which intervention components could overcome the modifiable barriers and enhance the enablers?

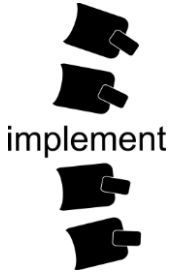
Persuasive communication: Respected senior clinician presents persuasive message about role of GP to minimise harm (from unnecessary irradiation) and encouraging patients to stay active

Step 4: How will we measure behaviour change?

Provide opportunities for social comparison: Small group discussion of own practice among peers

The IMPLEMENT Intervention

- Designed to address barriers & enablers to uptake of the guideline
- Series of behaviour change techniques delivered via interactive facilitated workshops, e.g.:
 - Information provision
 - Model/demonstrate the behaviour
 - Persuasive communication
 - Role play
- 2X workshops, 3 hours duration



Take home messages

- Implementation needs to be informed by implementation research
- More rigorous approach required for the development and evaluation of implementation interventions
- This four step method is a conceptual aid, rather than a rigid prescription
 - may be iteratively adjusted and refined to suit other contexts and settings

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