Using the Theoretical Domains Framework to design interventions

Designing a practice improvement strategy

Simon French

NHMRC Primary Health Care Fellow
Senior Research Fellow
Centre for Health, Exercise and Sports Medicine
University of Melbourne
s.french@unimelb.edu.au
Greetings from Melbourne Australia... up, over
Australian early days...

*Research must be actively pursued and developed and as fast as new knowledge is acquired it must be applied*

Commonwealth Minister for Health, William (Billy) Hughes, 1936
Developing theory-informed behaviour change interventions to implement evidence into practice: a systematic approach using the Theoretical Domains Framework

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 modes 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 for guiding researchers through a comprehensive intervention.
Problem Analysis

• Systematically identify:
  o evidence-practice gap
  o barriers and facilitators to change

• Select evidence-based behaviour change techniques that address barriers and facilitators

• Combine techniques into a deliverable intervention

• Test feasibility and acceptability

• Evaluate in a randomised trial
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 of implementation interventions requires a systematic approach with a strong rationale
  - Use systematic approach to address professionals, patients, 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

Why use a theory driven approach?

- Poor justification of choice of intervention and use of theory in implementation research (Davies 2010)
- Implementation interventions should be underpinned by appropriate theory
- 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?

1. Theory
2. Evidence
3. Practical issues
Implementation interventions: How to choose?

• Theory
  o understand factors that might influence behaviour
  o underpin choice of possible techniques
  o clarify how such techniques might work

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

• Practical issues
  o which components are feasible with available resources
  o which are likely to be acceptable in the relevant setting and to the targeted health professional group
Designing an implementation intervention: Which intervention components?

<table>
<thead>
<tr>
<th>Barrier is . . .</th>
<th>Consider . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of knowledge</td>
<td>Education session</td>
</tr>
<tr>
<td></td>
<td>Decision aids</td>
</tr>
<tr>
<td>Perception / reality mismatch</td>
<td>Audit and feedback</td>
</tr>
<tr>
<td></td>
<td>Reminders</td>
</tr>
<tr>
<td>Lack of motivation</td>
<td>Incentives / sanctions</td>
</tr>
<tr>
<td>Beliefs / attitudes</td>
<td>Peer influence</td>
</tr>
<tr>
<td></td>
<td>Opinion leaders</td>
</tr>
<tr>
<td>Systems of care</td>
<td>Process redesign</td>
</tr>
</tbody>
</table>
Our approach to intervention development

- **Define behaviour**
- **Understand behaviour**
- **Change behaviour**

**Evidence**
- Descriptive research: interviews, survey
- Evaluative research: Design and test targeted, theory-informed intervention in cRCT

**Theory**
- Practical considerations

---

The University of Melbourne
MONASH University
Theoretical Domains Framework

- Skills
- Knowledge
- Beliefs about capabilities
- Social/Professional role and identity
- Beliefs about consequences
- Goals
- Reinforcement
- Memory, Attn & decision processes
- Intentions
- Behavioural regulation
- Optimism
- Emotion
- Social influences
- Environmental context and resources

Michie et al 2005, J Qual Safe Health Care
Cane, O'Connor, Michie. 2012 Implement Sci
Designing the intervention

**Step 1:** Who needs to do what differently?
1. Identify the evidence-practice gap
2. Specify behaviour change
3. Specify health professional/setting

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

**Step 3:** Which intervention components could overcome the modifiable barriers and enhance the enablers?
1. Use chosen theory to identify potential behaviour change techniques
2. Identify evidence
3. Feasible, locally relevant, and acceptable intervention

**Step 4:** How will we measure behaviour change?
1. Identify mediators of change to investigate proposed pathways of change
2. Appropriate outcome measures
3. Feasibility of outcomes to be measured
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 intervention: example 1

**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 intervention: example 2

**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

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

**Step 4:** How will we measure behaviour change?
Take home messages

• 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
  o may be iteratively adjusted and refined to suit other contexts and settings
Acknowledgements

• Monash University – Australasian Cochrane Centre
  o Sally Green, Joanne McKenzie, Denise O’Connor

• Collaborators
  o Jeremy Grimshaw, Susan Michie, Jill Francis

• Australian National Health and Medical Research Council
  o Project Grant funding
  o ECR Primary Care Fellowship