What is the endpoint of ‘translational research’? The example of polypharmacy

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Two potential translational blocks, impeding the translation of:

- **T1**: Basic science discoveries into human studies
- **T2**: Clinical studies into clinical practice

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Sung, et al. Central challenges facing the national clinical research enterprise. *JAMA* 2003

Woolf. The meaning of translational research and why it matters. *JAMA* 2008
To address T2: support behaviour change

- Supporting **clinical staff** to do things differently
- What works? Evidence needed
- Clinical practice guidelines – not enough
- Knowledge and Motivation – often not enough
- Need **theory-based behaviour change interventions**

Sung, et al. Central challenges facing the national clinical research enterprise. *JAMA* 2003
Woolf. The meaning of translational research and why it matters. *JAMA* 2008
T2: Who is missing?

- Behaviour of patients and members of the public influence health outcomes

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Clinical science and knowledge

Translation of new knowledge into clinical practice

Population: Engagement with new knowledge, shared decisions, adherence, self-management

Improved health
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Harvard Clinical and Translational Science Center

https://catalyst.harvard.edu/pathfinder/

Clinical and Translational Research Spectrum:

- T1: Translation to Humans
- T2: Translation to Patients
- T3: Translation to Practice
- T4: Translation to Population Health

Improved global health
Polypharmacy: ≥ 4 prescribed medications

- Requires action by:
  - Healthcare professionals (e.g., GPs, community pharmacists): appropriate prescribing, appropriate dispensing

- Patients: adherence

Study aims: To complete the translational pathway by generating evidence to inform the design of interventions targeting both healthcare professionals (HCPs) and patients
Methods

1. Healthcare professional (HCP) study:
   ■ Semi-structured interviews with general practitioners (GPs) and community pharmacists, based on the Theoretical Domains Framework (TDF)
   ■ Findings mapped to Behaviour Change Techniques (BCTs) to design intervention to support appropriate prescribing/dispensing

2. Patient study:
   ■ TDF-based focus groups with older people (>65 years) receiving ≥4 medications
   ■ Findings mapped to BCTs to design an intervention to support adherence to polypharmacy
HCP Study findings: Important domains

- Skills
- Knowledge
- Beliefs about capabilities
- Professional role & identity
- Beliefs about consequences
- Motivation & goals
- Memory, attention & decision processes
- Nature of the behaviour
- Behavioural regulation
- Emotion
- Social influences
- Environmental context & resources

15 GPs
15 pharmacists

HCP Study findings: BCTs

4 BCTs: Action planning, Prompts/cues, Demonstration of behaviour, Salience of consequences
Patient Study findings: Important domains

Skills
Knowledge
Beliefs about capabilities
Professional role & identity
Beliefs about consequences
Motivation & goals
Memory, attention & decision processes
Nature of the behaviour
Behavioural regulation
Emotion
Social influences
Environmental context & resources

7 focus groups
50 participants

Patient Study findings: BCTs

11 BCTs: Action planning, Prompts/ cues, Information about health consequences, Feedback on behaviour, Goal-setting (outcome), Review of outcome goal, Goal-setting (behaviour), Review behaviour goal, Restructuring the physical environment, Social support (unspecified) and Self-monitoring of behaviour.
Updates and Conclusions

Two interventions, designed with input from providers and patients, exemplify research to the endpoint of the translational pathway (including patient behaviour) to improve health outcomes.

Both interventions were delivered and feasibility-tested.

Patient intervention has been funded for pilot trial, project commenced 1 Dec2017 (PI: Carmel Hughes).

HCP intervention: pilot trial proposal under review for funding (PI: Carmel Hughes).
References


