

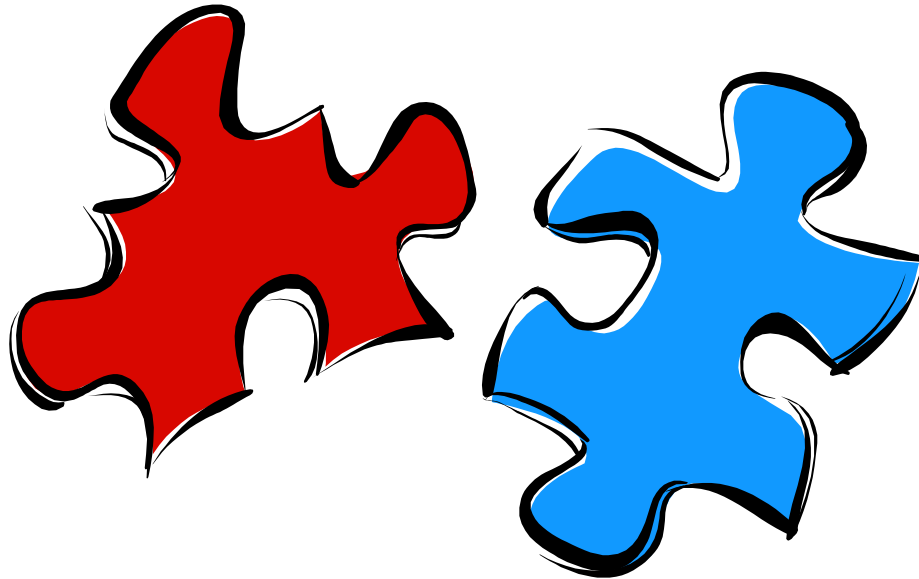
Making sense of Implementation

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Combine evidence to ...

- implement an effective clinical intervention
- using an effective Knowledge Translation strategies



Knowledge Translation Strategies

- Knowledge synthesis tools
 - Clinical practice guidelines
 - Patient decision aids
 - Clinical decision support systems
- Knowledge Translation tools
 - Education
 - Audit and feedback
 - Key opinion leaders
 - Facilitation

Clinical practice guidelines

Benefits of guidelines

- facilitate use of research evidence
- define best practices
- increase consistency
- improve quality of care
- support patient information

Limitations of guidelines

- uncertain quality and sources of evidence
- development time, costs
- subject to political power
- not standards of care



Consistent leakage from guidelines

Leakage from research publication to guideline utilisation occurs in a wide variety of clinical settings and progressively at all steps of the awareness-to-adherence pathway.

Median adherence =34%

guidelines are insufficient to implement research

there may be different factors influencing clinicians at each step of this pathway

Recommendations to improve guideline adherence need to be tailored to each step.

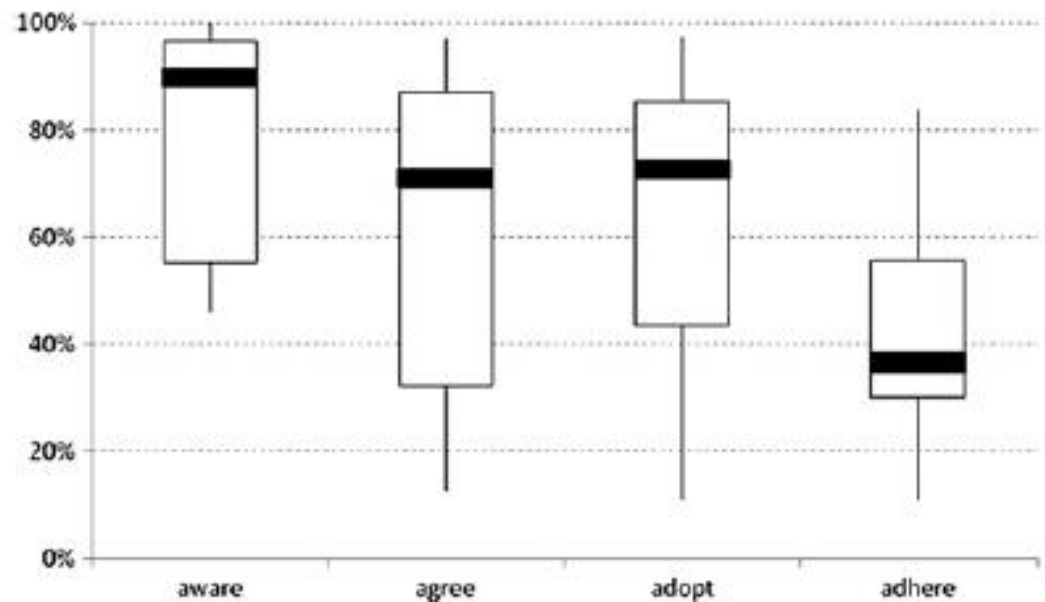


Figure 7 Box and whisker plot for all absolute rates.

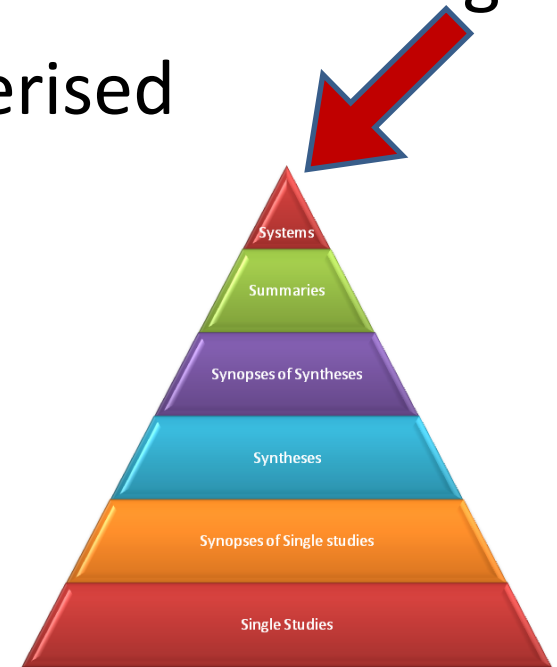
Postgrad Med J 2011;**87**:670–679. doi:10.1136/pgmj.2010.116012

Patient decision aids

- Translate evidence to inform patients of options re benefits, harms, risks
- Guide (shared) decision making
- Inform, improve participation in decision making
- Aligns actions with patient values, wishes
 - Option grids
 - Risk calculators
 - side effect charts

Clinical decision support systems

- CDSS = electronic systems to aid decision making
- Match individual data to computerised knowledge databases
 - If...then rules
 - risk estimation tools
- ‘Push’ information to clinicians
 - Alerts, reminders
- ‘Pull’ information repositories
- Maximal benefit when linked with electronic patient records



Effectiveness of KT tools

Tool	Lead Author, Source, Year	Risk Difference
Educational Meetings	Forsetlund , Cochrane, 2009	6% IQR: 1.8 to 15.9%
Educational Outreach visits (face-to-face meetings)	O'Brien, Cochrane, 2007	5.6% IQR: 3 to 9%
Printed Educational Materials	Giguere, Cochrane, 2012	2% Range: 0 to 11%
Local opinion leaders	Flodgren, Cochrane, 2011	12% Range 15 to 72%
Point of care computer reminders	Shojania, Cochrane, 2009	5.6% IQR: 2 to 19.2%
Audit and feedback	Ivers, Cochrane, 2012	4.3% IQR: 0.5 to 16%

Do these risk differences measure a clinically important difference?

An explanation

- large variation in observed effects within each KT intervention
- effects of interventions may vary in relation to the amount and direction of the (hypothesised) mechanism of action
- this may be mediated by the underlying barriers in a study

There may be different mechanisms of action – these are likely to be confounding within and across reviews

Local opinion leaders

Intervention	Comparator	Risk Difference
Local Opinion Leader	No intervention	9% IQR: -0.15 to 0.38
Local Opinion Leader	*Single intervention	14% IQR: 0.12 to 0.17
Local Opinion Leader + *single /more intervention/s	Same *single/ more intervention/s only	10% IQR: -0.08 to 0.25
Local Opinion Leader as part of multiple interventions	No intervention	10% IQR: -0.04 to 0.72
Local Opinion Leader	ALL	12%

Activities of Opinion Leaders = informal contact, formal talks and tutorials, community meetings, task forces, outreach activities, consultations, interactive workshops, signed statement ; offered by individuals and teams, for between 1 week and 18 months

***Single interventions** = audit & feedback, chart reminders, faxed evidence summaries, educational materials, seminars, lectures

Challenge of interpretation

Many KT interventions are complex

- difficult to turn off, on
- delivered in different ways, using different activities
- may be automatically adapted to suit context
- offered with other interventions

There is still uncertainty about how /why they work

Building an Implementation plan

Knowledge	Local Context	Barriers	Implement
Research evidence	Local, national policy	Lack of awareness	Engage stakeholders
	Organisational setting	Lack of agreement	Leadership & support
Clinician knowledge, skills	Environment resources	Low self-efficacy	Change management
	Staffing profile	Environmental factors	Stable teams
Patient values, choices	Work practices	Patient factors	Education & training
<i>Synthesised evidence + gap between what is known & done</i>	<i>Audit, data, observations of issue + Key stakeholders identified</i>	<i>Strategies to address turn barriers into facilitators</i>	<i>Ready to go with tailored intervention and key KT tools and strategies</i>

To improve healthcare

We need to change behaviour of people who;

- Are healthy
 - stop smoking, eat less, exercise more
- Are ill
 - adhere to health advice, take tablets
- Deliver health care
 - Integrate research evidence, keep up to date

How do people change behaviour?

Implementation relies on behaviour change

- What theories explain how individuals change?
- How do groups change?
- What strategies are most useful in specific contexts?

*Drugs --- **physiology** --- outcomes*

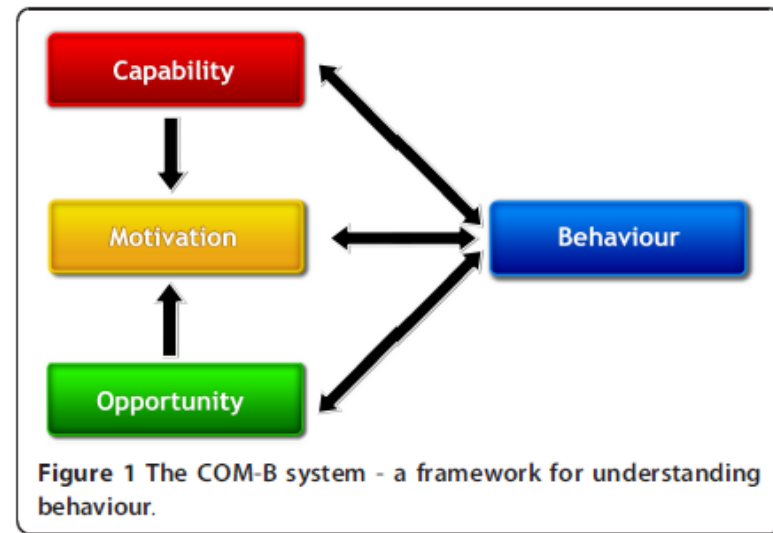
*Complex interventions --- **behaviour** --- outcomes*

*BUT physiology is more consistent across humans than
behaviour*

COM - B model

3 necessary & sufficient pre-requisites

1. Capability = skills + knowledge
 - individual's psychological & physical capacity to engage
2. Motivation = intention
 - reflective & automatic patterns & emotions that energise & direct behaviour
3. Opportunity = no constraints
 - environmental factors that make it possible to engage



Michie et al, 2011

Power of psychological theory

Psychological theory = explanation of human behaviour

Useful for

- design and development of interventions
- measurement , implementation, interpretation of studies
- understanding why interventions work (or not)
- guiding adaption, tailoring of interventions

BUT

- many shared and overlapping constructs
- idiosyncratic theoretical elaboration, explanation

Theoretical Domains Framework

Practical integration by 18 theorists, 16 researchers, 30 health psychologists of

- 33 behaviour change theories
- 128 explanatory constructs

into accessible format of 12, updated to 14 'related theoretical constructs'

Useful to

- Identify barriers for health behaviour change
- Explain behaviours within complex interventions
- Guide design of behaviour change interventions

Theoretical Domains Framework

1. Knowledge
2. Skills
3. Social/professional role & identity
4. Beliefs about capabilities
5. Optimism
6. Beliefs about consequences
7. Reinforcement
8. Intentions
9. Goals
10. Memory, attention & decision processes
11. Environmental context & resources
12. Social influences
13. Emotion
14. Behavioural regulation

Cane, O'Connor & Michie, 2012

TDF – qualitative framework

TDF can inform interview guide, and content analysis

- Understand mechanisms of behaviour
- Investigate behavioural components as barriers / facilitators for specific intervention, context
- English / Dutch (adaptable) TDF questionnaire

Benefits of using theory

With a better understanding and consistent application of theory;

1. Complex interventions likely to be more effective when they specifically address behaviour change
2. Theory based interventions (that work) build the evidence of understanding about how behavioural interventions work

Strategy to use psychological theory

Design a (behaviour change) complex intervention

- Identify nature of behaviour to be changed
 - determine appropriate model, theory
- Specify component behaviours in interventions
- Refine, tailor specifics of the intervention
 - to match target population, context
- Document what works, in what circumstances
 - basis for intervention design and development

The Knowledge to Action Cycle

