Implementation research: past, present & future

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#implementationscience
Evidence base

Framing – conceptual territory

Applying (what we think) we know
• Horses for courses

• Blending implementation practice & research

• Closing the gap between what we know – what is practiced/delivered

• Linear versus complicated
Getting a new idea adopted, even when it has obvious advantages, is difficult.....

Everett M Rogers
Traditional & historical view

- Focus on individual (behaviour)
  - Skilling practitioners up
  - As ‘rational actors’

- Evidence as a product (e.g. guideline), which has common meaning

- Linear – logical view of evidence use (*push*): researchers ➔ publication ➔ practitioners

- Lack of consideration of the influence of context of practice/service delivery) (*pull*)
Two communities

Researchers

Knowledge Creation → Knowledge validation → Knowledge Dissemination → Knowledge adoption

Users

Research priorities

Nutley et al 2000; 2008
In reality...

- Research is only 1 source of information used
- It gets transformed – individually and/or collectively [– and if contrary will be ignored]
- Viewed differently by individuals & groups of...
- Action occurs in social and organisational structures – which can be more or less facilitative
- i.e. implementation is not a one-off event – it’s a process

“Actual knowledge exchange systems ...are complex because they are made up of complex human actors. This may seem obvious, but the literature is rife with oversimplifications”

(Contandropoulous et al 2010, Milbank Quarterly)
Organisational excellence model

- Research informed practice lies with service delivery organisations, their leadership, management, structure and culture
- Developing “research-minded” local culture and local absorptive capacity for knowledge. Local experimentation and practice development key.
- Facilitated through partnerships with universities and other research organisations
Mode 2/interactive/co-production

- Participatory/collaborative/multi-disciplinary
- Users and producers of knowledge together
- Action oriented
- Problem focussed (not academic led)
- Not ‘one size fits all’
- Co-produce solutions to real-world problems

Closing the Gap
Interventions

Reports of single initiatives:

• Appreciative inquiry paediatric pain management (Kavanagh et al 2010)
• Knowledge brokers (Dobbins et al 2009 & 2010)
• Facilitation (Stetler et al 2006, Seers et al 2012)
• Leadership intervention (Gifford et al 2008)
• Technology – delivering the evidence (Doran 2006, 2008)

Programmatic/organisational:

• QUERI – Veterans Affairs
• Collaborative/IHI
• Collaboration for Leadership in Applied Health Research & Care (CLAHRC)
Mechanisms of action

• It is not the interventions themselves that lead to change, but the underlying reason or resources they offer (‘active ingredients’).
• A single intervention may draw on one or more mechanism.
• 5 emerge as prevalent and important:
  • **Dissemination** – tailored formats, active
  • **Interaction** – stronger links between research & practice communities
  • **Social influence** – experts and peers
  • **Facilitation** – enabling through technical, financial, organisational, personal support/development
  • **Incentives** (rewards) & reinforcement

adapted Walter et al 2003
A pragmatic cluster randomised trial evaluating three implementation interventions

http://www.implementationscience.com/content/7/1/80

Abstract

Background: Implementation research is concerned with bridging the gap between evidence and practice. Through the study of methods to promote the uptake of research and evidence it can improve guideline adherence. Successful implementation of research findings is often limited by the complexity of healthcare environments, and this paper reports on a pragmatic cluster randomised trial of evidence implementation strategies in surgical theatres.

Randomisation: 27 surgical theatres were randomised to either the intervention or control group. The intervention group consisted of three implementation strategies: education and support, computerised decision support, and electronic performance feedback. The control group received usual care.

Follow-up: The intervention was delivered over a 12-month period and the follow-up period was 12 months.

Results: The intervention group showed a statistically significant improvement in the proportion of guideline adherence in the early post-randomisation period compared to the control group. However, this improvement was not sustained in the late post-randomisation period.

Conclusion: Implementation strategies may be successful in improving guideline adherence in the early stages, but further work is required to sustain these improvements.

Funded by

The Royal College of Anaesthetists
Aims of the study

- To evaluate 3 strategies for the implementation of....
- To assess the impact of recommendations on patient outcomes and experiences
- To evaluate the processes of implementation
- Standard dissemination (SD)
- SD+ web based resource championed by an opinion leader
- SD + adapted PDSA
Approach

• Theory informed pragmatic randomised trial
• Time series
• Embedded process evaluation
  • PARIHS framework

19 UK NHS Acute Hospital Trusts randomised to 1 of the 3 interventions
## Data collected

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<th>Pre Intervention</th>
<th>Post Intervention</th>
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<tr>
<td>Duration of Fasting*</td>
<td>1575</td>
<td>1930</td>
<td>3505</td>
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<td>Focus Groups</td>
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*primary outcome
Comparison of pre and post intervention mean fluid fast times for each intervention group
Comparison of pre and post intervention mean food fast times for each intervention group
Impact on practice & policy

- Kick started activity
- Development of policies
- Shifts to include fasting as an equal priority in op list planning
- Implementing staggered admission
- Revision of patient information
- Practical tools – e.g. writing times on cups, using white boards
Influences

Promoting Action on Research Implementation in Health Services

\[ SI = f (E, C, F) \]

Evidence (E)

- ‘Badge’ positive – evidence underpinning (on the whole) accepted
- Message ‘simple’
- Behaviour though – leant towards conservatism
Influences: Context (C)

• Inter-professional issues & communication

• Power structures/relations
  ...the major difficulty we had...when push comes to shove, the people in charge of the patients and surgical lists i.e. the surgical consultants will not change their practice ...
  (nurse & PDSA facilitator with anaesthetist colleague)

• Highly structured, rule based organisations
  (learning organisation survey)
Influences: Facilitation (F)*

- Integrating change agent role into ‘day job’
- Lack of engagement (e.g. attendance at PDSA meetings) – resistance (e.g. to change lists)
- Working with different groups and personalities
- Opinion Leader role required seniority

*two intervention arms – potential to take on facilitation roles
Reflections

- Trials & tribulations!
  - Control (lack of!) and standardisation – different starting points
  - Particularisation – different components
  - Practicalities

- How long is a long enough intervention period?

- How best to capture different types of impact – and how those then relate to changes in patient outcomes (practice changes to direct impact)
Continuum of research use (adapted, Bick & Graham 2010, Nutley et al 2007, Weiss 1979)

Enablers
policies, procedures, system design, directives, incentives, documentation resources, capacity, capability

Awareness
Knowledge & understanding
Attitudes, perceptions, ideas
Practice & policy change

More conceptual uses
More instrumental uses

Intrinsic motivation

Patient &/or carer impact
Practitioner impact
Service impact
System impact
From bridging gaps to building collaborations
Collective action for implementation

Antecedents
- Starting point
- Interpretation of the CLAHRC brief
- Setting priorities

Architectures
- Engineered structure & space
- Aesthetic - building an identity
- Social - leadership, collaboration & boundaries

Motivation to engage
- Theory
- Type of KM
- Boundary spanning
- PPI
- Boundary Objects

Knowledge & its mobilisation

Impacts
- Direct, processual, conceptual
- Personal
- CLAHRC 'footprint'

Evaluation & learning
- Information sharing
- Scaling up
- Responses

Action/activity

creating the conditions
Challenges

• You have to **create the conditions & mechanisms**
  ▫ which in themselves *take time & negotiation*
  ▫ influenced by leadership styles

• Quality of partnerships – conditional upon:
  ▫ **Starting points** – e.g. history & nature of relationship
  ▫ How you **negotiate** the agenda

• What are the **levers** for each party to engage?
  ▫ What are the incentives to stay in the endeavour?
  ▫ Academics tend to want to take the lead [!]
Contd...

- Needing to have space/opportunities to ‘sense-make’

- It takes time to have impact & this might not be direct
Applying what we know

What we think we know

- Pushing out evidence is unlikely to work
- Implementation is not linear
- Implementation is affected by many potential factors (people, context, the evidence...)
- Interventions tend to be get transformed
- Therefore different types of impact

Implications

- Need active, engaging, particularised strategies
- Build in the capacity adapt/be flexible
- Need to develop appropriate approach based on ‘diagnosis’
- Track fidelity & action of active ingredients
- Don’t just focus on direct impacts
Propositions

• Robust & believable evidence not always sufficient to impact on decision making and practice
  ▫ extend beyond individuals to take account of context

• Our ability to link evidence to action could be enhanced if we develop and evaluate the underlying mechanism(s) of action of interventions/activities
Contd..

- Implementation success increased if a strategic and/or personal priority

- Attaching or embedding improvement/implementation to existing programmes & structures more incremental less disruptive

- Evaluating implementation activities & interventions require approaches that embrace, rather than factor out complexities –
  - understanding linkages between active components and impact on outcomes
“I think you should be more explicit here in step two.”