



Implementation - theoretical background and application in practice

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Implementation - definitions

- Latin: implere = fill, fulfill
- Translating plans into action
- Coordinated change at system, organization, program, and practice levels (Fixsen 2005)
- Active and planned efforts to mainstream an innovation within an organization
(Greenhalgh 2004)
- Implementation science: The scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice
(Eccles & Mittman 2006)

Is there a need for implementation research?

- New findings are continuously generated by researchers all over the world.
- Number of articles indexed at Medline
 - 1975 500
 - 1998 100.000
 - 2006 800.000 (approximately)
 - 2010 ????

Good ideas spread automatically, don't they?

- In 1601 captain James Lancaster found that sailors on his ship did not suffer from scurvy if they were provided with lemon juice during the journey
- In 1865 – 264 years later – the method became routine at all ships of the British navy
- In Vienna, Austria, Dr Zemmelweiss in 1847 found that patient infections decreased when doctors washed their hands before examining the patient
- Today (2010) poor hand hygiene is still a considerable problem in health care!



Implementation research traditions

■ Diffusion of innovations

- E M Rogers
- How the innovationen spread and is adopted by the potential users

■ Technology transfer

- Technological advances transferred into practice

■ Policy implementation

- Hill & Hupe, Pressman & Wildavsky, Lipsky

Pressman & Wildavsky (1973)

Implementation

How Great Expectations in Washington Are
Dashed in Oakland;

Or, Why It's Amazing that Federal Programs
Work at All,

This Being a Saga of the Economic
Development Administration

as Told by Two Sympathetic Observers Who
seek to Build Morals on a Foundation of
Ruined Hopes

The Oakland Project

Implementation research traditions (continued)

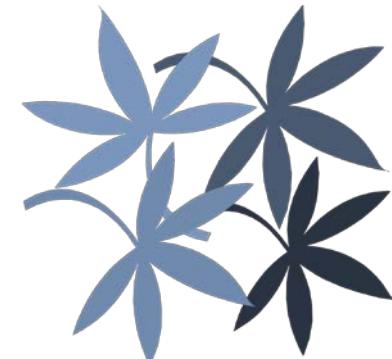
- Evidence-based medicine (EBM)
 - First mentioned at McMaster Medical School, in Hamilton, Ontario, Canada in the late 1980s.
 - Systematic search, evaluation and use of research generated evidence to support decisions in clinical practice
 - The Cochrane institute



Implementation research traditions (continued)

■ Implementation Science

- Grol, Eccles, Wensing, Oxman, Bhattacharyya ...
- Based on the EBM movement
- Focuses interventions to achieve behavioural change among clinicians



Theory-based models / frameworks - some examples

- Conceptual model by Greenhalgh et al (2005)
- The Promoting Action on Research Implementation in Health Services (PARIHS) framework
(Kitson et al 1998)
- The Knowledge-to-Action Circle (KTA)
(Graham et al 2006)

Conceptual model by Greenhalgh et al

- Factors that have been shown to influence the diffusion of innovations in health care organizations:
 - The innovation itself
 - System antecedents and readiness
 - The context
 - The implementation process
 - The adopters
- Linkages between the different factors also have to be considered

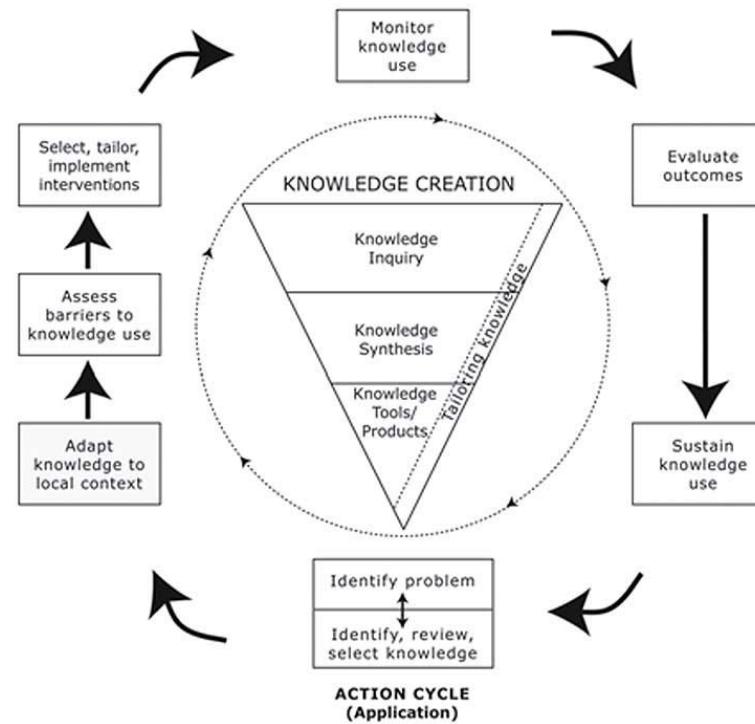
The Promoting Action on Research Implementation in Health Services (PARIHS) framework

- Implementation success is a function of:
 - The nature and type of evidence
 - The qualities of the context
 - The way the process is facilitated

(Kitson et al 1998)

Knowledge to Action (KTA)

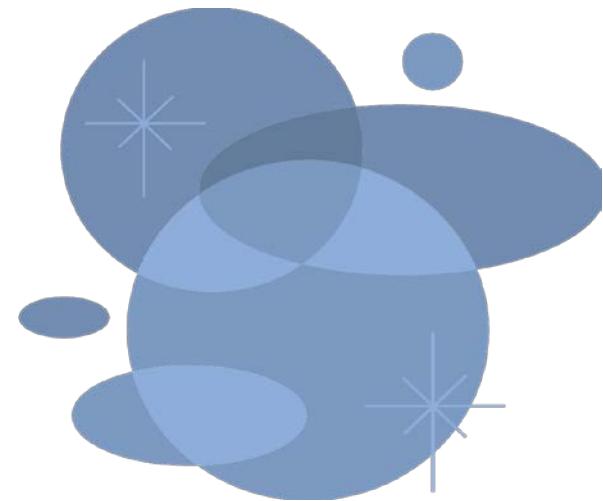
- Builds on theories of planned action
- Describes both knowledge creation and knowledge application



Source: Graham et al 2006

Synthesized model used in my own studies

- Factors predicting implementation outcome:
 - The innovation
 - The adopters
 - Context (Inner / Outer)
 - Implementation activities



The innovation – important attributes (as perceived by the adopters)

- Relative advantage
- Compatibility
- Complexity
- Trialability
- Observability
- Reinvention

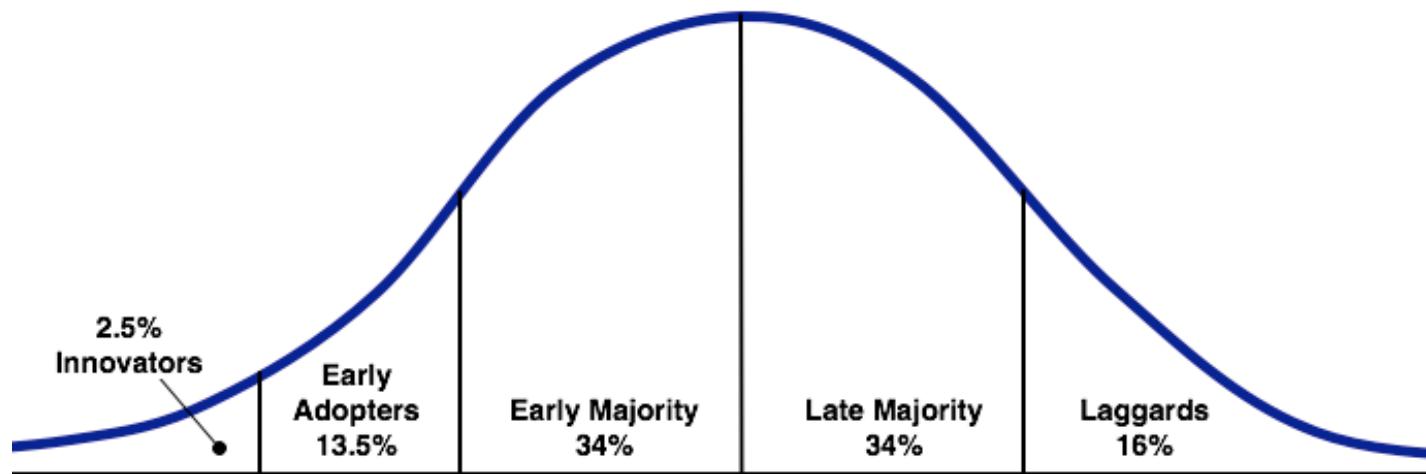
The adopters

"Innovations are easier to study than the people who adopt them" (T Greenhalgh)



Adopter characteristics

- Innovators
- Early adopters
- Early majority
- Late majority
- Laggards



Source: E M Rogers, Diffusion of innovations ,2003

Innovators - Venturesome

- Members of networks that take them far away from the local circle of peers
- Must be able to cope with a high degree of uncertainty about the innovation – and be willing to accept a setback
- Not always respected by other members of a local system

Early adopters - Respect

- Integrated in the social system – respected by peers
- Must make judicious innovation-decisions – to continue to earn the esteem of colleagues
- Often act as an opinion leader

Early majority - Deliberate

- Accepts an innovation faster than the average member of a social system
- Characterized by good relations to peers, but are no opinion leaders

"Be not the first by which the new is tried,
nor the last to lay the old aside"
(Alexander Pope)

Late majority - Sceptical

- Adopt new ideas just after the average member of a system
- Adoption can be a result of peer pressure or an economic necessity
- Most of the uncertainty about a new idea must be removed before they feel it is safe to adopt

Laggards - Traditional

- The last in a social system to accept an innovation
- The point of reference is the past
- Tend to be suspicious of innovations and of change agents

An example – late majority on group level

In general, how would you describe the attitudes regarding change or innovations at this unit...?

- 1: A degree of thoughtfulness, you could say. No negative attitude in general, but ... yes, we do not hurry to change, but we think it through very carefully, I think.
- 2: Yes we are afraid of what change could mean that we get even more work and that's what makes us... a reason why we...
- 3: Yes, but we are careful...
- 4: We do not jump into everything that is new. I don't think we do, but rather...
- 2: We want to see how it works somewhere else, before we...
- 5: This has proven to be wise
- 4: Very wise
- 3: But has it proven to be good, then we are in

Inner context

- Organizational structure and leadership
- Organizational culture and existing routines
- Some organizations are characterized by a higher degree of openness towards innovations
 - “receiving organizations”
- Receptiveness regarding one innovation in particular does not mean that all kinds of innovations are accepted

Outer context

- External communication
- Competition
- Surrounding factors
- Political decisions



Implementation activities

A theoretical base for the spread of innovations

	Let it happen	Help it happen	Make it happen	
Defining features	Unpredictable, self-organizing	Negotiated, influenced, enabled	Scientific, planned, regulated	
Mechanism	Natural, emerging	Social	Technical	Managerial

Source: Greenhalgh 2005

Implementation Activities

The RURU group taxonomy

■ Dissemination

Circulating or presenting research findings to potential users (e.g. guidelines)

■ Interaction

Developing stronger links and collaborations between the research and practice communities

■ Social influence

Relying on influential others, such as peers and experts to inform about research findings

Activities

The RURU group taxonomy (continued)

■ Facilitation

Enabling the use of research, through technical, financial, organizational and emotional support, e.g. education and staff training

■ Incentives and reinforcement

Using rewards and other forms of control to reinforce appropriate behaviour

Implementation of a computerized tool for lifestyle intervention into PHC in Sweden

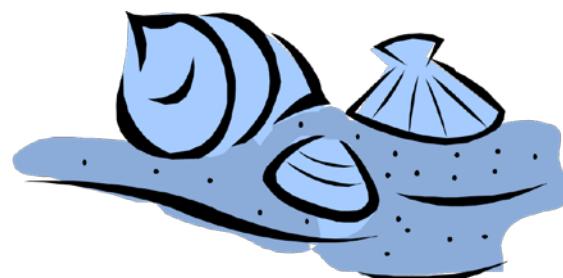
- Six primary health care centres participated in the study
- Creative climate was assessed prior to the implementation
- Two different strategies were used – one based on implementation theory, one implicit strategy
- Outcome was measured in terms of proportion of patients being referred to the computer
- Focus group interviews with staff were performed after nine months of operation

Results

- A high CCQ score (*Inner context*) in combination with explicit implementation strategy (*Implementation activities*) was associated with positive implementation outcome
- Perceived advantage and perceived compatibility with existing routines facilitated implementation (*Innovation*)
- Coinciding organizational changes or staff shortage hindered implementation (*Context*)

Conclusion

- Theoretical models can be valuable tools for implementation in practice as well as in implementation studies
- There is a need for continuing research in the implementation field



”...many of the fundamental questions regarding what approaches should be used in which settings for which problems remain unanswered.”

(O Bhattacharyya et al 2009)



Thank you for your attention!

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