Medicine
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Science of KT: An overview

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St. Michael's
Inspired Care
Inspiring Science

Objectives

- To provide a framework for knowledge translation
- To outline a strategy for developing a KT intervention

- Evidence-based medicine should be complemented by evidence-based implementation
  - Grol, BMJ 1997

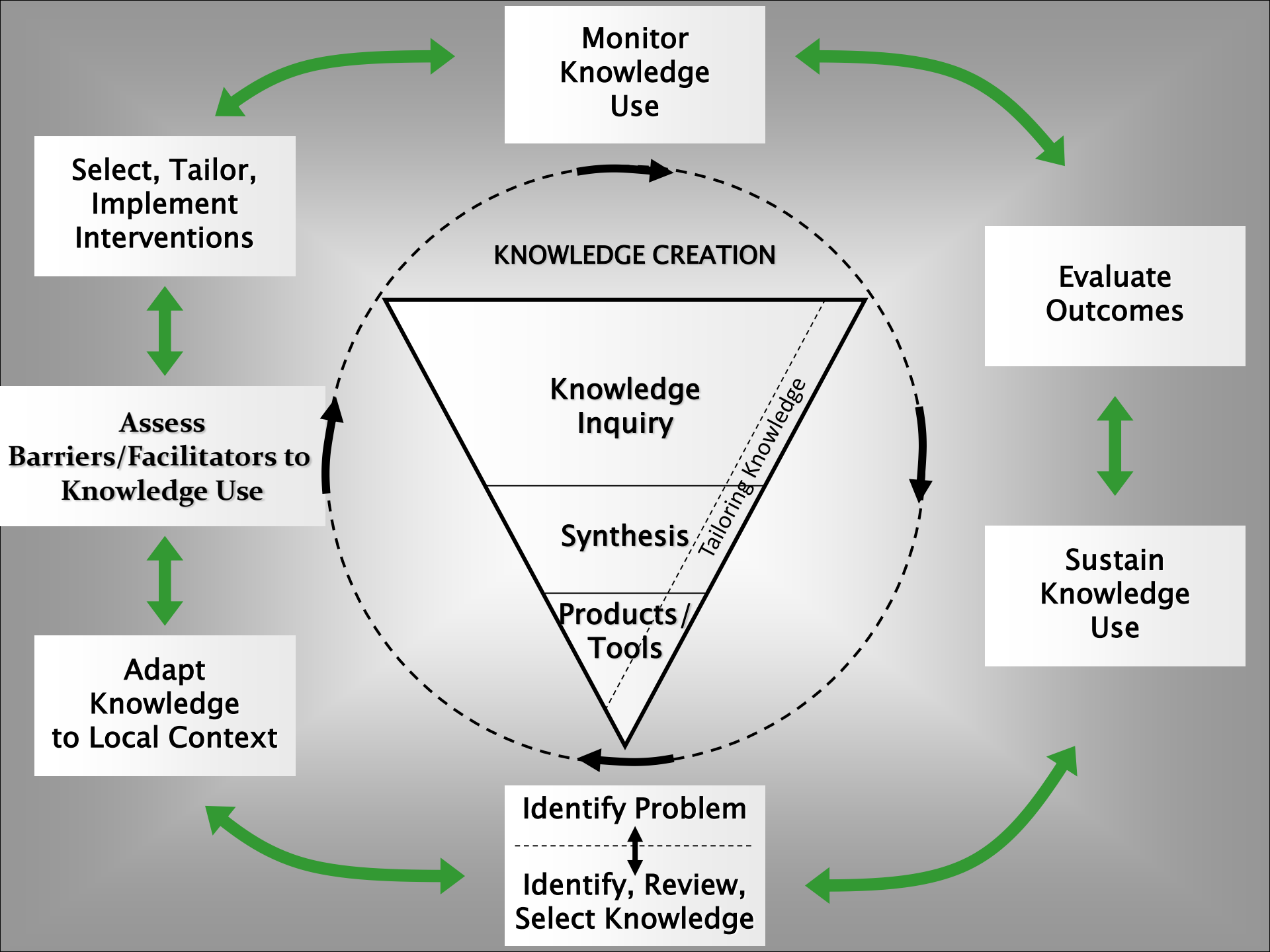
What is knowledge translation?

- Knowledge translation is a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically sound application of knowledge to improve the health of Canadians, provide more effective health services and products and strengthen the health care system
  - CIHR definition

Knowledge to action

Integrated KT

- Describes a way of doing research with researchers and research users working together to shape the research process
- Starts with collaboration on setting the research question through to completion of the study and dissemination of its results
- Should produce research findings that are more likely relevant to and used by the end users


Monitor Knowledge Use
Select, Tailor, Implement Interventions
KNOWLEDGE CREATION
Evaluate Outcomes
Knowledge Inquiry
Tailoring Knowledge
Assess Barriers/Facilitators to Knowledge Use
Synthesis
Sustain Knowledge Use
Products / Tools
Adapt Knowledge to Local Context
Identify Problem
Identify, Review, Select Knowledge

KT Interventions

- An art and a science to selecting, tailoring and implementing KT interventions
- They can:
  - Target different stakeholder groups
  - Include single components or multiple components
  - Be theory driven or
  - Empirically driven or
  - Exploratory (ISLAGIATT)

Mapping the intervention

- Adapt the evidence
- Assess the barriers and facilitators to knowledge uptake
- Explore the local context and setting
- Use evidence on what KT interventions may work
- Consider sustainability

Evidence for implementation

- Systematic review of guideline implementation strategies
  - Identified 235 studies
  - 39% of these are from primary care
- Most evidence from clinician-oriented interventions
  - Education, reminders, audit and feedback
- Few studies used theoretical basis to inform development of intervention
    - Health Technology Assessment 2004;8(6):iii-iv, 1-72

Evidence for KT Interventions

- Professional interventions – overall absolute change in performance of 10%
- Organisational interventions such as revision of professional roles and teams can influence efficiency and clinical outcomes in some cases
- Patient directed interventions (such as decision aids) can support decision making
- Financial interventions can influence volumes, impact on clinical outcomes less clear

KT Strategies for HCPs

- 8.1% dissemination of educational materials(4)
- 7.0% audit and feedback (5)
- 14.1% reminders (14)
- 6.0% educational outreach (13)
- Most interventions had modest effects on care
- Number of components has no impact
- Grimshaw JM, et al. Health Technol Assess 2004;8(6)1-72

KT Strategies for Patients/Public

- Mass media
- Education
- Patient decision aids (shared decision making)

Assessing Sustainability

- Consider:
  - Who are the stakeholders
  - What are the threats to sustainability:
    - Human resources
    - Process
    - Organisational
  - How can we engage all the relevant stakeholders to facilitate sustainability

Trials of interventions for LBP

- 9 randomised trials designed to change the behaviour of clinicians
- Interventions include educational outreach, workshops, printed education materials, audit and feedback
- Most looked at use of x-rays but did not look at other behaviours
- None measured patient outcomes or included cost effectiveness analysis

LBP in Australia

- CPG for LBP developed because it's the most frequent MSK condition managed by PCPs
- 6th most frequent reason for consulting a PCP
- Direct and indirect cost of LBP in 2001 was over $9 billion
- Despite being well informed about and agreeing with LBP guidelines, lack of adherence to guidelines
  - Reasons cited include patients' preferences for non-evidence based care (x-rays) and lack of generalisability to their practice

Key Messages from CPG

- Multidisciplinary group including researchers, clinicians
- Identified 2 messages
  - Plain x-rays for acute non-specific LBP are of limited diagnostic value, expose people to unnecessary radiation, provide no benefits to clinical outcomes
    - This message was selected because 28% of people in Australia with LBP receive an x-ray
  - Patients with LBP should remain active
    - This message was selected because it is the only recommended therapy in the CPG with Level 1 evidence
      - Impl Sci 2008;3:11

Cluster RCT

- Completing a cluster RCT of 92 practices (2300 patients)
- Testing the effectiveness of a theory-based strategy for implementing a CPG for acute LP in primary care
- Assessing primary outcome: percentage of patients who are referred for a plain x-ray for acute LBP within 3-months post initial consultation
  - Mean level of disability for patients 3 months post consultation

Intervention

- Focus groups with PCPs completed to identify barriers and facilitators and to map these to domains of behaviour change
- Principal barriers include:
  - Beliefs about negative consequences of practising in a manner consistent with guideline recommendations
  - Beliefs about patient preferences or expectations inconsistent with the guideline
  - Limitations in their knowledge
  - Limitations of patient knowledge
  - Social and environmental barriers

Intervention

- Face to face small group workshops
- Workshop developed that will include:
  - Modeling the behaviour by a peer expert
  - Rehearsal
  - Persuasive communication
  - Scripting
- Content focuses on the 2 key messages
- Prior to workshop PCPs document their management of a series of patients with LBP that present in the 2 wks preceding the workshop

Intervention

- 2 workshops of 3 hours each or 1 workshop of 6 hours
- Include a mix of didactic and interactive components
- DVD of the workshop made available to those who can't attend
- Workshops occurred over 3 months in 2007
- Patient recruitment begins 6 wks post intervention

Control Group

- Will receive access to the guideline
- Reminders of how to access the electronic version will also be sent

Behavioural Constructs

Domains	Explanation	Domain measured for behaviour	
		X-ray	Activity
Behavioural Intention	Whether the PCP intends to engage in the behaviour	X	X
Attitude	Whether the PCP is in favour of performing the behaviour	X	X
Subjective Norm	How much the PCP feels social pressure to engage in the behaviour	X	X
Perceived Behavioural control	Whether the PCP feels in control of the behaviour	X	X

Technique for Behaviour Change	Techniques judged to be effective in changing domain										
	1	2	3	4	5	6	7	8	9	10	11
Goal Specified	N	U	A	N	D	A	N	N	N	N	A
Self-monitoring	N	N	A	A	A	D	A	N	N	N	D
Contract	U	N	N	N	N	A	N	N	D	N	A
Rewards (incentives)	U	N	A	U	U	A	U	N	U	U	U

1. Social/professional role
2. Knowledge
3. Skills
4. Beliefs about capabilities
5. Beliefs about consequences
6. Motivation and goals
7. Memory
8. Environmental context
9. Social influences
10. Emotion
11. Action planning

Applied Psychology 2008;57:660-680