Engaging in KT Research: Why and How

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Lab

Clinical research

Health care

KT Type 2

Based on Hulley et al. Designing Clinical Research, 2007, p 23
E X KT2 = ROI

- Efficacy
- Knowledge Translation (type 2)
- Real Outcomes of Importance
E = Efficacy...

...effects of health care interventions under relatively optimal circumstances.

(Can this work?)
KT = Knowledge Translation...

...the organization, retrieval, appraisal, refinement, dissemination, and timely application of knowledge (eg, important new knowledge from health research)

E X KT2 = ROI
Where:
- \( E \) is typically \( \leq 0.25 \)
- \( KT2 \) is typically \( \leq 0.25 \)

So:
- ROI is typically...

\[ \frac{1}{4} \times \frac{1}{4} = \frac{1}{16} = 0.06 \]
Typical time to regular implementation of innovations

17 to 20 years

Why? How to fix?
General Strategy

Create
- An evidence-based environment
- A KT team

Seek
- Win-win interventions
- Win-break-even interventions

Avoid
- Lose-lose or lose-break-even interventions
- Untested interventions
By the year 2020, 90% of clinical decisions will be supported by accurate, timely, and up-to-date clinical information and will reflect the best available evidence.

IOM Roundtable on Evidence-Based Medicine

This can't happen without a better understanding of the barriers to translating knowledge into practice and ways to overcome them.
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Example

- Loeb M et al. Surgical Mask vs N95 Respirator for Preventing Influenza Among Health Care Workers: A Randomized Trial. JAMA. 2009 Oct 1. *(Original)*
  PMID: 19797474

Surgical masks just as good (and a lot cheaper)

CONCLUSION: Treating residents of nursing homes with pneumonia and other lower respiratory tract infections with a clinical pathway can result in comparable clinical outcomes, while reducing hospitalizations and health care costs.
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http://plus.mcmaster.ca/EvidenceUpdates

collaborating to provide you with access to current best evidence from research, tailored to your own health care interests, to support evidence-based clinical decisions.

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Pertinent Disciplines in Evidence Updates

• Anesthesiology
• Pain
• Critical care
Welcome to KT+

Knowledge Translation+ (KT+) is provided by McMaster University’s Health Information Research Unit.

KT+ provides access to the current evidence on "T2" knowledge translation™ (ie, research addressing the knowledge to practice gap), including published original articles and systematic reviews on health care quality improvement, continuing professional education, computerized clinical decision support, health services research and patient adherence. Its purpose is to inform those working in the knowledge translation area of current research as it is published.

* based on the notion that T1 KT involves translational research from the lab to humans, while T2 KT has to do with understanding and enhancing the dissemination and application of research-derived knowledge in health care (Hulley et al, 2007).

http://plus.mcmaster.ca/kt/

Non-filtered KT Articles
Knowledge translation research articles identified from other sources (e.g., MEDLINE) that are not quality filtered but have relevant KT content. These papers are not rated by the panel of health professionals.

Here’s what we offer:

- A cumulative searchable bibliographic database of evidence from the health care literature
- An email alerting system

Register now to begin using KT+: Register Here

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Evidence-Based Journals

70,000 articles/yr from 160 journals

~4,500 articles/yr meet critical appraisal and content criteria (94% noise reduction)

Critical Appraisal Filters

Reliability (kappa) beyond chance

Includes all Cochrane Reviews, CADTH Reviews, NHS HTA Reviews, AHRQ Reviews

Work that you don’t need to do

Work

Work
McMaster PLUS Project

- ~4,500 articles/y meet critical appraisal and content criteria

- ClinPredicts citation counts (p<0.001)

- ~20 articles/yr for clinicians (99.96% noise reduction)

- ~5-50 articles/y for authors of evidence-based guidelines and reviews

Health Knowledge Refinery
With biomedical research articles published at 2,000,000/yr, a clinician reading 2 articles/day will be centuries behind each year. Bernier & Yerkey, 1979

The evidence base for clinical effectiveness has become so vast that it is essentially unmanageable for individual providers. Institute of Medicine, 2001
What does the current best evidence have to say about the management of health care problems?

Access *MacPLUS* via

1. Clinical Connect  
   (top toolbar while viewing patient list)  
   or  
2. medportal.ca
How to get involved

• Pick a win-win innovation in your area of practice

• Apply for an HHS implementation grant

• If no win-win or win-breakeven innovation on your practice setting, develop one and apply for a CIHR KT grant
Centre for Healthcare Optimization Research and Delivery (CHORD)

Asking Questions that Matter

CHORD Project Proposals

Applications due at CHORD@hhsc.ca
no later than midnight on February 15, 2010

http://www.hamiltonhealthsciences.ca/body.cfm?id=1995
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<table>
<thead>
<tr>
<th>Question – Do CDSS’s improve:</th>
<th>Partners</th>
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</table>
| 1. preventive care?           | Rolf Sebaldt  
Student: Nathan Sousa |
| 2) toxic drug dosing?         | Stuart Connolly  
Student: Robby Nieuwlaat |
| 3) prescribing medications?   | Marita Tonkin, Anne Holbrook  
Student: Brian Hemens |
| 4) chronic disease management?| Hertzel Gerstein, Rolf Sebaldt  
Student: Shikha Misra |
| 5) diagnostic test ordering?  | John You, David Koff  
Student: Jasmine Dhaliwal |
| 6) acute disease management?  | Rob Lloyd  
Student: Anita Ramakrishna |
By the year 2020, 90% of clinical decisions will be supported by accurate, timely, and up-to-date clinical information and will reflect the best available evidence. This can happen if we “engage” in knowledge translation – and we apply what we learn.