What does it mean to transform knowledge into action?

Jacqueline Tetroe
Senior Advisor, Knowledge Translation and Public Outreach
Canadian Institutes of Health Research
Overview

• What do we mean by knowledge translation?
• KT at CIHR
• The knowledge to action process and fall prevention research
• Funding opportunities at CIHR
It’s all in the name

Knowledge to action (KTA)

Knowledge Transfer (KT)

Knowledge Translation (KT)

Research Use/Utilization

Knowledge Exchange (KE)

Commercialization
27 KT terms used by 33 applied health research funding agencies

applied health research
capacity building
coop-ration - cooperation - competing
diffusion
dissemination
getting knowledge into practice
impact
implementation
knowledge communication
knowledge cycle
knowledge exchange
knowledge management
knowledge translation
knowledge mobilization
knowledge transfer
linkage and exchange
popularization of research
research into practice
research mediation
research transfer
research translation
science communication
teaching
“third mission”
translational research
transmission
utilization
3. (1) There is hereby established a corporation, to be known as the Canadian Institutes of Health Research, in this Act referred to as the “CIHR”.

(2) The CIHR is an agent of Her Majesty in right of Canada.

(3) The head office of the CIHR shall be at the place in Canada that is designated by the Governor in Council.

3. (1) Est constituée une personne morale appelée Instituts de recherche en santé du Canada, ci-après dénommée IRSC.

(2) IRSC est mandataire de Sa Majesté du chef du Canada.

(3) Son siège social est situé au lieu du Canada fixé par le gouverneur en conseil.

4. The objective of the CIHR is to excel, according to internationally accepted standards of scientific excellence, in the creation of new knowledge and its translation into improved health for Canadians, more effective health services and products and a strengthened Canadian health care system, by

(a) exercising leadership within the Canadian research community and fostering collaboration with the provinces and with individuals and organizations in or outside Canada that have an interest in health or

4. IRSC a pour mission d’exceller, selon les normes internationales reconnues de l’excellence scientifique, dans la création de nouvelles connaissances et leur application en vue d’améliorer la santé de la population canadienne, d’offrir de meilleurs produits et services de santé et de renforcer le système de santé au Canada, et ce par :

(a) l’exercice d’un leadership dans les milieux canadiens de la recherche et l’encouragement à la collaboration avec les provinces ainsi que les personnes et orga-
What is Knowledge Translation?

KT 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.

This process takes place within a complex system of interactions between researchers and knowledge users which may vary in intensity, complexity and level of engagement depending on the nature of the research and the findings as well as the needs of the particular knowledge user.
What is Knowledge Translation?

- The contextualization and integration of research findings of individual research studies within the larger body of knowledge on the topic.
- Synthesis is a family of methodologies for determining what is known in a given area or field and what the knowledge gaps are.

- Involves identifying the appropriate audience for the research findings, and tailoring the message and medium to the audience.

- Refers to the interaction between the knowledge user and the researcher resulting in mutual learning, it encompasses the concept of collaborative or participatory, action oriented research where researchers and knowledge users work together as partners to conduct research to solve knowledge users’ problems (Integrated KT).

- The iterative process by which knowledge is actually considered, put into practice or used to improve health and the health system.
- KT activities must be consistent with ethical principles and norms, social values as well as legal and other regulatory frameworks.
Why is KT important?

• Consistent evidence of failure to translate research findings into clinical practice
  • 30-45% patients do not get treatments of proven effectiveness
  • 20–25% patients get care that is not needed or potentially harmful
    (McGlynn et al, 2003; Grol R, 2001; Schuster, McGlynn, Brook 1998)
  • A large proportion of falls and fall injuries in older people is due to multiple risk factors, many of which probably can be modified or eliminated with targeted fall prevention interventions. (LZ Rubenstein and KR Josephson, 2006)
Why is KT important?

Paul Ewald*: “We have in hand most of the information we need to facilitate a new golden age of medicine. And what we don’t have in hand we can get fairly readily by wise investment in targeted research and intervention.”

*From John Brockman. “What is Your Dangerous Idea”
Why is KT important?

In terms of fall prevention, “it has been possible to achieve only modest reductions, usually less than 35% un the number of people falling and in the number of falls, even in the somewhat artificial settings of randomized controlled trials.” Gillespie, BMJ 2004
What is Knowledge Translation?

Knowledge translation is about:

- Making users aware of knowledge and facilitating their use of it to improve health and health care systems
- Closing the gap between what we know and what we do (reducing the know-do gap)
- Moving knowledge into action

Knowledge translation research (KT Science) is about:

- Studying the determinants of knowledge use and effective methods of promoting the uptake of knowledge
What is Knowledge Translation?

Knowledge Translation is something that most researchers are already doing, to some extent.

Researchers who:

- publish their research findings
- tell other researchers about their work
- present their work at conferences

......are engaged in at least one part of the process we call “knowledge translation”: disseminating the results of their work to their peers.
Knowledge Translation is the bridge between discovery and impact

(KT research and practice)

Research outputs

Research impacts

It’s is about making a difference
Overview

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  - Funding opportunities at CIHR
At CIHR we consider two broad categories of KT

**End of grant KT**
The researcher develops and implements a plan for making knowledge users aware of the knowledge generated through a research project.

**Integrated KT**
The researcher engages potential knowledge users as partners in the research process. Requires a collaborative or participatory approach to research that is action oriented and is solutions and impact focused.
What is integrated KT?

- a way of doing research
- collaborative, participatory, action-oriented, community based research, co-production of knowledge, mode 2 research
- involves engaging and integrating knowledge users into the research process
- Knowledge users can be:
  - Policy- and decision-makers from the community to the federal level, researchers, the public, industry, clinicians, the media
  - Investigators from different disciplines, teams, countries
What is integrated KT?

Knowledge users and researchers (knowledge creators) work together to:

- shape the research questions
- interpret the study findings and craft messaging around them
- move the research results into practice

In our view – this is the minimum requirement for conducting integrated KT
What is integrated KT?

In addition, knowledge users and researchers (knowledge creators) can work together to:

- shape the research questions
- decide on the methodology
- help with data collection and tools development
- interpret the study findings and craft messaging around them
- move the research results into practice
- widespread dissemination and application
Why integrated KT?

The theory: through partnerships, the research is strengthened:

• research can be more solutions-based because there is an end-user involved in developing the research question
• research can have more impact because the end-user is engaged and interested, ready for results and willing to move those results into practice because they are of direct relevance to their day-to-day lives
By requiring both researchers and knowledge users to be part of the research team, integrated KT requires *merit review*:

- Both knowledge users and researchers on the review panel
- Each proposal scored on impact/relevance as well as scientific merit
- Panellists often need orientation materials explaining the process as well as worksheets to apply the criteria
- Both “types” of panel members have a voice

Review implications of integrated KT (more on this tomorrow)
What is end of grant KT?

A broad spectrum of activities including:

**Diffusion** (let it happen)
- Conference presentations
- Peer reviewed publications (Open access policy- Jan 1, 2008)
- Non-peer reviewed publications
- Website postings
What is end of grant KT?

**Dissemination** (help it happen)
(activities that tailor the message and medium to a specific audience)

- End of grant report to funders
- Summary/briefings to stakeholders
- Educational sessions with patients, practitioners and/or policy makers
- Engaging knowledge users in developing & executing dissemination/implementation plan
- Tools creation
- Media engagement
- Use of knowledge brokers
What is end of grant KT?

**Application** (make it happen)

(moving research into practice in cases where the strength of evidence is sufficient)

- Understanding the context/environment where research is to be applied
- Identifying barriers to the uptake of the research findings
- Adapting knowledge, tailoring messages and interventions to promote uptake
- Evaluating the implementation process and outcomes
- Working within a conceptual framework

*N.B* knowledge application is often a fundamental component of integrated KT as well
Why work within a conceptual framework?

Conceptual frameworks:

- are made up of concepts and propositions designed to focus the user on what is important to the issue
- they have the basic purpose of focusing, ruling some things in as relevant and ruling others out due to their lesser importance
- their usefulness comes from the organization they provide for thinking, for observation, and for interpreting what is seen
- they provide a systematic structure and a rationale for activities
Beware of the “KT Imperative”

The importance of **Synthesis**

- results from a single research study should be contextualized within a synthesis of global research results before *extra-ordinary* dissemination or implementation efforts are undertaken

- need to bring common sense as well as academic rigour to bear on decisions about the degree and intensity of KT activities warranted by a single research study
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Back to the idea of using a conceptual framework

I personally like this one, but there are others out there too
from: Graham et al: Lost in Knowledge Translation: Time for a Map?
Knowledge Inquiry to transform knowledge into action in fall prevention

- research using all types of study designs
- primary research needs to be targeted to fill the known gaps in our knowledge base
- primary research needs to be solutions-based

“In 1960 Sheldon described the literature on falling as “meagre”. Now so much has been published on the topic that it is difficult to make sense of the evidence and identify clear messages for policy and practice” Gillespie BMJ 2004
Knowledge Inquiry
to transform knowledge into action in fall prevention

Gates et al “Evidence of benefit from multifactorial risk assessment and targeted intervention for falls in primary care, community or emergency care settings was limited and reductions in the number of fallers may be smaller than thought.

Current evidence is not conclusive because of methodological shortcomings and lack of data on important outcomes such as fall rates and injuries”

(BMJ Online First 2007)
Knowledge Synthesis

Systematic reviews, meta-analysis, realist reviews, meta-synthesis etc

• need for synthesis to determine what we already know about fall prevention (or should know if we were to summarize the existing knowledge)
• need to determine where there is a strong evidence base and move that evidence into action
• need primary research to fill the knowledge gaps identified by syntheses

Conclusion from a SR on strategies to prevent falls and fractures in hospitals and care homes: “There is insufficient evidence, however, for the effectiveness of other single interventions in hospitals or care homes or multifaceted interventions in care homes.” Oliver et al BMJ 2007
Knowledge Synthesis

Here is what we (Costello et al JRRD 2008) know:
Multifactorial programs are more effective with older individuals with a previous fall history
Falls screening should include vision and medication screening
Exercise alone is effective in reducing falls
Home hazard assessment with modifications may be beneficial, especially in targeted groups
Clinical practice guideline for the assessment and prevention of falls in older people

Guidelines commissioned by the National Institute for Clinical Excellence (NICE)

November 2004
Start with problem/issue concern and look for research to solve the problem

or

Become aware of the research and assess whether current practice is in keeping with it

- e.g. How can public health professionals become engaged in shaping regulatory frameworks – i.e. making changes to standards and regulations related to building codes at national, provincial and municipal levels? (work by Nancy Edwards)
Adapt Knowledge to Local Context

To apply knowledge, one needs to contextualize or adapt it for local use

- On what basis does one need to adapt evidence on fall prevention to different contexts, or to different facilities within the same context, or to different individuals based on their history of falls or the level of cognitive impairment?
- How to determine the relevant criteria for adaptation?
Assess barriers/supports related to:

- the knowledge (innovation)
- the potential adopters
- the practice setting
- the implementation plan

- e.g. what are the barriers to uptake of fall prevention guidelines
- e.g. what are the barriers to uptake of hip protection pads
Summary

Hip protectors for preventing hip fractures in older people. Hip protectors, which consist of plastic shields or foam pads fitted in pockets within specially designed underwear, aim to reduce the impact of a fall on the hip, and thus the risk of a hip fracture. We found some evidence that in institutions with high rates of hip fracture, the use of hip protectors may help reduce the risk of hip fracture, but with new evidence the effect has become less certain. However, there was no evidence of any benefit from hip protectors for the majority of older people living in their own homes. Acceptance and adherence by users of the protectors remain poor due to discomfort and practicality. (Many people stop wearing hip protectors because they find them uncomfortable.)

Cochrane review, Parker MJ, Gillespie WJ, Gillespie LD
Updated 2005
Based on the barriers and supports identified, select or tailor implementation interventions

- Cochrane’s Effective Practice and Organization of Care review group is a source of synthesized info on effectiveness of KT interventions
  

- Are there fall prevention interventions that have been shown to be effective (or not)?
Soriano et al 2007 suggest that primary care providers “are uniquely set up to provide a systematic and thorough evaluation of all older adults for their risk of falls…. and to coordinate and manage optimally tailored interventions for their patients.” true – but realistic?
Monitor Knowledge Use

- Instrumental (behaviour)
  - Application of the knowledge: (e.g. adherence to guideline recommendations, compliance with quality improvement measures)
- Conceptual (knowledge & attitudes)
- Symbolic (political, persuasive)
- Be aware of how knowledge is being used – measure it and adapt interventions to ensure optimal/intended use
- Be aware of and mobilize the implicit knowledge that health care providers have about their patients and their specific work environment
Determine impact of using the knowledge

- Patient health outcomes (e.g. decrease in number and severity of falls, HRQoL, mortality)
- Provider outcomes (e.g. increased knowledge, cooperation between health care providers, increased use of guidelines)
- System/organization outcomes (e.g. health care system cost reductions, appropriate changes in local, municipal infrastructure to reduce falls)
- Unintended impacts (positive or negative) e.g. what is the effect on fear of falling on fall prevention interventions
Ongoing monitoring of knowledge use and impacts

- Are interventions needed to sustain ongoing use of the knowledge?
- How long are the skills/knowledge maintained?
- e.g. How to maintain and sustain use of fall prevention guidelines
- e.g. How to maintain all components of multifactorial interventions
Quick search of our funded database

- Preventing falls 5 grants $512,561
- Falls prevention 22 grants $5,798,902
- Fall prevention 20 grants $4,741,298

No doubt there are more
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# KT Funding Opportunities

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<td>• Knowledge Synthesis funding opportunity</td>
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<td>• Operating grants competition - reviewed by KTR panel</td>
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<td>Integrated KT</td>
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<td>• Partnerships for Health System Improvement funding opportunity</td>
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<td>• Meeting, Planning and Dissemination grant – KT Events to develop collaborative</td>
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<td>relationships and grant proposals</td>
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<td>End of Grant KT</td>
<td>• Meeting, Planning and Dissemination grant – KT Supplement to disseminate results</td>
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<td>• Allowable expense as part of a grant application</td>
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<td>Commercialization</td>
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<td>Training</td>
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<td></td>
<td>• Health Research Communications Award, Journalism Award</td>
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Knowledge Synthesis Grant

Supports teams of researchers and decision-makers to produce knowledge syntheses ($100,000 per year) and scoping reviews ($50,000 per year), that respond to the information needs of knowledge-users in all areas of health. Partners can, but are not required to make in-kind or cash contributions.

Partnerships for Health Systems Improvement

Supports teams of researchers and decision-makers interested in conducting applied health research useful to health system managers and or policy-makers. CIHR pays up to $400,000 over 3 years, with an additional 20 to 30% required from partners.
Knowledge to Action Grant

Supports teams engaged in knowledge translation (KT) at the community, regional, provincial or federal level by funding KT and implementation activities of researchers and decision-makers/knowledge-users. CIHR pays up to $100 000 per year for one or two years. Partners can, but are not required to make in-kind or cash contributions.
Meetings, Planning and Dissemination Grants

• provide support for meetings, planning and/or dissemination activities consistent with the mandate of CIHR and relevant to CIHR Institutes, Initiatives, or Branches.

• Competition Dates: two streams – meetings and planning
  – 3 competitions/year.
  – Applications due: Oct 1, Feb 1, June 1
  – Decision/funding dates: Jan 1, May 1, Sept 1

• Term and amounts
  – 1 year, non-renewable grants
  – Maximum grant value is $25,000
Meetings Planning and Dissemination
Grant: KT Supplement

• Up to $40 000 for KT activities at the end of a CIHR grant when it is appropriate to disseminate the results of the research beyond the traditional scientific community and using methods supplementary to and in addition to publication in peer-reviewed journals.

• Offered three times a year: October 1, February 1 and June 1

NEW amount
More KT Funding Opportunities

• Training and Personnel Awards
• Knowledge Translation priority awards:
  – New Investigator Award
  – Fellowship Award
  – Doctoral Research Award
• Health Research Communications Award
Our philosophy

Knowledge, if it does not determine action, is dead to us

Plotinus (Roman philosopher 205AD-270AD)
My question is: Are we making an impact?

Bottom line: we all want to make an impact
Any Questions?

..and KT is what??
For more information, visit our web page:
http://www.cihr-irsc.gc.ca/e/29418.html

jacqueline.tetroe@cihr-irsc.gc.ca

Thank you
CANADIAN FALL PREVENTION CONFERENCE:

Transforming Knowledge to Action

March 22 & 23 – Vancouver, B.C.

CIHR IRSC

Canada