Knowledge Translation at CIHR and Opportunities for Simulation Research

SIM One - Ontario Simulation Network

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Overview

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• Knowledge Translation (KT) at CIHR
• Why KT Matters
• CIHR KT Funding
  • Investigator-Initiated Research
  • Priority-Driven Research
• CIHR-Funded Simulation Research
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CIHR Overview

Research, Knowledge Translation and Ethics

Investigator-Initiated Research

Priority-Driven Research
- Chronic Disease and Inflammation
- Drug Safety & Effectiveness Network
- eHealth
- Environments & Health
- Healthy & Productive Workforce
- Pathways to Health Equity for Aboriginal Peoples
- Personalized Medicine
- Strategy for Patient-Oriented Research (SPOR)

Science, Knowledge Translation and Ethics

13 Virtual Institutes

- Population and Public Health
- Gender and Health
- Nutrition, Metabolism and Diabetes
- Musculoskeletal Health and Arthritis
- Cancer Research
- Circulatory and Respiratory Health
- Neurosciences, Mental Health and Addiction
- Aging
- Human Development, Child and Youth Health
- Aboriginal Peoples’ Health
- Genetics
- Health Services and Policy Research
- Infection and Immunity
Knowledge Translation (KT) at CIHR

2000
CIHR is created with a mandate that includes KT.

2004

2005
CIHR establishes a Knowledge Translation Portfolio as well as releases CIHR’s Commercialization and Innovation Strategy.

2009
CIHR releases a Strategic Plan for 2009-10, Health Research Roadmap, with a specific direction focused on KT: Strategic Direction #3 - “Accelerate the capture of health and economic benefits of health research”

2012
Science, KT and Ethics Branch forms, reflecting a move towards integrating KT throughout CIHR.

2014
KT is incorporated throughout Roadmap II.

- 1st Launch of CIHR’s KT Funding Programs and CIHR’s Open Access Policy.
- Launch of Best Brain Exchange Program and PubMed Canada, co-funded by CIHR.
- Launch of the KT and Commercialization Learning Modules.
- New CIHR Open Suite of Programs with the integration of KT.
KT at CIHR

• The CIHR Act states that our aim is to excel in the creation of new knowledge and to translate that knowledge from the research setting to real-world applications...

• To guide our work, CIHR developed a definition of Knowledge Translation (KT) that is now referenced around the world:

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.

This process takes place within a system of interactions between researchers and knowledge users that 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 this definition means:

• KT about engaging and sharing research findings with those individuals who can use them.

• Selecting approaches/activities depends on the research being conducted, anticipated findings and desired outcomes.

• Includes commercialization
Health research can be mobilized through...

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<th>KT at CIHR</th>
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<tr>
<td>Research Syntheses</td>
<td>Provide unbiased information on what is known (and not known) on a given topic</td>
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<td>Exchange (Integrated KT)</td>
<td>Involves bringing creators and users of knowledge together throughout the research process</td>
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<td>Dissemination (End of Grant KT)</td>
<td>Researchers share findings with those individuals who are likely to use them</td>
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<td>Application/Implementation</td>
<td>Scaling up or studying the implementation of existing evidence/evidence-based interventions (KT/implementation science)</td>
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<td>KT Science</td>
<td>Theory and study of KT, including the development of KT tools/methods and the science behind the application of evidence</td>
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Why KT Matters

KT is essential for **accelerating transformative changes** in health and the health care system.
KT at CIHR

Health Research Roadmap II: Capturing Innovation to Produce Better Health and Health Care for Canadians

Strategic Plan 2014-19

- To “promote a culture of excellence in knowledge translation”.
- To “mobilize health research for transformation and impact.”
- Also includes commitments to:
  - Integrate stakeholders into the research process
  - Include knowledge users in peer review
  - Support KT science
  - Facilitate evidence-informed health promotion and prevention
  - Build an entrepreneurial advantage
KT within CIHR Funding

KT is promoted and enabled through:

• Programs
  – KT requirements
  – Knowledge users/partners can or must be involved in research
  – Opportunities for networks and platforms

• Corporate Functions
  – Knowledge users/partners involved in developing Initiatives
  – Knowledge users/partners involved in governing Initiatives

• Activities and Resources
  – Match-making portals or workshops to bring together researchers, knowledge users and partners (often from different disciplines/sectors)
  – Learning modules
CIHR Funding

Investigator-Initiated Research

- CIHR has launched a new suite of Investigator-Initiated Research Initiatives, replacing CIHR’s previous ‘Open’ programs.

Priority-Driven Research

- CIHR supports a suite of Strategic/Signature (Major) Initiatives aligned with CIHR’s refreshed research priorities:

  - Enhanced patient experiences and outcomes through health innovation
  - A healthier future through preventive action
  - Health and wellness for Aboriginal peoples
  - Improved quality of life for persons living with chronic conditions

- All Major Initiatives incorporate at least some KT considerations, ranging from integrated KT through to commercialization.
New Program and Peer Review Design:

1. Two separate, complementary funding schemes:
   - Project Scheme (research ideas)
   - Foundation Scheme (research programs)

2. A peer review process that will include:
   - Application-focused review
   - Multi-stage review
   - Structured review criteria
   - Remote review of applications at the initial stage(s)

3. A College of Reviewers that will support excellent peer review across the spectrum of health research
KT within Investigator-Initiated Research

- CIHR’s current open KT and commercialization programs are being integrated into the Project Scheme.
- The last launch of these programs occurred June 2015:

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<th>Open KT Programs</th>
<th>Competition Launch</th>
<th>Anticipated Application Deadline</th>
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<td>Partnerships for Health System Improvement</td>
<td>June 2015</td>
<td>October 2015</td>
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<td>Knowledge Synthesis</td>
<td>June 2015</td>
<td>January 2016</td>
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<td>Knowledge to Action</td>
<td>June 2015</td>
<td>October 2015</td>
</tr>
<tr>
<td>Industry-Partnered Collaborative Research Program</td>
<td>June 2015</td>
<td>September 2015</td>
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- This transition is intended to broaden opportunities for KT and commercialization.
The Project Scheme supports ideas from researchers and knowledge users, across the spectrum of research and KT.

Inclusion of knowledge users and/or partners is encouraged when appropriate.

Facilitated by:
- Ability to have principal or co-applicants who are knowledge users
- Ability to include partnership contributions
- Review by non-academic peer reviewers when appropriate
- Incorporation of KT/commercialization into the adjudication criteria

CIHR has committed (special consideration) to a minimum threshold of funded KT and commercialization projects that include a knowledge user/partner.
To enhance health outcomes and health care delivery through the implementation, evaluation and scale-up of eHealth innovations.

**Phase 1: eHealth Innovation Partnership Program (eHIPP)**

- Cost-effective patient- and population-centered health care solutions.
- Partnerships between Canadian technology companies and ‘Innovation Communities’.
- Trials of new eHealth technologies.
Phase 2: Anticipated 2016 – 2024

1. Re-launch of eHIPP in different health areas.
2. eHUBs to facilitate national and international scale up of successful innovations
3. Active Assisted Living (AAL) Joint Programme (Europe) – cross-national projects with SMEs and organizations representing older adults.
Coalition of F/P/T partners, including researchers, patients, provincial health authorities, academic health centers, charities, and the pharmaceutical sector, working together to generate and translate high quality, relevant research into practice.

KT within Priority-Driven Research: Strategy on Patient-Oriented Research

- Support for People and Patient-Oriented Research and Trials (SUPPORT) Units
- SPOR Networks
- Capacity development
- Improving the clinical trials environment
- Patient engagement
**CIHR-Funded Simulation Example:**
*Test Technology and Introduce Use*

**eVENT: An expert system for detecting ventilatory events during anesthesia**

*Dr. J.M. Ansermino et al., University of British Columbia, 2009*

**Research Proposal:**

- Developed a computer expert system called eVENT to provide expert advice about a patient's breathing.
- System was trained to automatically detect important changes in the patient that are combined in a set of rules.
- Planned to use computer based simulations and test them with anesthesiologists in a full size human simulator.
- If successful, would be ready for evaluation with real patients.
Building Skills, Changing Practice, Simulator Training for Hand Hygiene Protocols

Dr. A.J. McGeer, Mount Sinai Hospital, 2009

Research Proposal:

- Hypothesized that hand hygiene is a psychomotor skill learned as a child that must be unlearned/re-learned by health professionals.
- Believed simulation training could be effective tool.
- Researchers worked closely with experts in nursing education, infection prevention and decision makers.
- Planned to develop a simulation training program and test it with nursing staff to see whether it increases hand hygiene adherence.
Knowledge translation of surgical innovations: Exploring development, implementation and evaluation of robotic and simulation training programs

Dr. A.R. Gagliardi et al., Toronto General Hospital, 2010

Research Proposal:

• Surgeons can earn to perform surgery using simulators, rather than live patients, but the technology require practice to master.

• Goal to identify content and format of successful surgical robotic and simulation training programs.

• Planned to share results with ten Canadian centres at a national meeting and use findings to develop training programs.
Development of a Virtual Training Simulator to Model Shoulder Replacement Surgery

Dr. J.A Johnson et al., University of Western Ontario, 2013

Research Proposal:

• While current joint replacement procedures are successful, most surgeons find them technically challenging.

• Goal to develop a virtual simulator to be used as a reliable training tool by the surgical staff involved with shoulder joint replacement.

• Surgeons could use the simulator to perform pre-operative planning on patients.

• Envisioned that simulator will reduce procedure time and revision rates, resulting in cost savings.
Design and evaluation of an interactive computer play platform to motivate participation in home-based therapies for young people with cerebral palsy: Let's Play!

*Dr. E.A Biddiss et al., University of Toronto, 2014*

**Research Proposal:**

- Researchers, therapists, parents and children interested in using Interactive Computer Play (ICP) video games that reward movements of arms/legs to encourage daily practice of therapy movement.
- Partnered with Holland Bloorview Kids Rehabilitation Hospital, therapists and children to design a new ICP system for upper limb rehabilitation.
- Planned to evaluate if ICP can motivate home-based therapy game play amongst children with CP.
CIHR KT Resources

Resources:

• Guide to Knowledge Translation at CIHR: Integrated and End-of-Grant Approaches
  http://www.cihr-irsc.gc.ca/e/45321.html

• Applying to Integrated Knowledge Translation Funding Opportunities at CIHR: Tips for Success
  http://ktclearinghouse.ca/ktcanada/education/seminarseries/2011/20110908

• Reforms of Open Programs and Peer Review:
  http://www.cihr-irsc.gc.ca/e/44761.html

• SPOR Patient Engagement Framework
  http://www.cihr-irsc.gc.ca/e/48413.html
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Questions?