KNOWLEDGE TRANSLATION:
KEY FOR SUCCESS IN HEALTH CARE

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“To him who devotes his life to science, nothing can give more happiness than increasing the number of discoveries, but his cup of joy is full when the results of his studies immediately find practical applications.”
GAP IN CARE
GAP

• Not being able to translate, transfer and utilize the medical knowledge effectively.
• Ongoing care might not be the best care
• Population outcome might not exactly match the results of clinical trial.
• Patients, care providers and payers do not reap enough benefits of the day-to-day breakthrough in medical knowledge
GAP

• The difference between what has been known and what we are doing.
• The difference between achievable and actual outcome
• The failure to systematize knowledge and apply it consistently
Knowledge Translation is the bridge between discovery and impact
Knowledge Discovery and Application Processes

**Discovery and Production**
- Ideas
- Lab/bench science
- Animal testing
- Early human (Phase 1)
- Middle human (Phase 2)
- RCTs (Phase 3)
- Post marketing

**Application and Implementation**
- Aware
- Accepted
- Applicable
- Able
- Acted upon
- Agreed to
- Adhered to
Knowledge Discovery and Application Process

1. Research Synthesis, Guidelines, Evidence Journals,...
2. Bedside EBM
3. Clinical Quality Improvement
4. Decision Aids, Patient Education, Compliance aids

Myth, opinion, poor research
Knowledge Translation: Definition

• The synthesis, exchange, and application of knowledge by relevant stakeholders to accelerate the benefits of global and local innovation in strengthening health systems and improving people’s health

CIHR Definition
KT definition: short one

Getting research into practice
KT Terms

- Applied health research
- Capacity building
- Complex interventions
- Complexity science
- Complexity studies
- Co-optation
- Diffusion of innovations
- Diffusion(s)
- Dissemination
- Evidence based practice
- Getting knowledge into practice
- Implementation
- Implementation research
- Implementation science

- Information dissemination and utilization
- Innovation adaptation
- Innovation adoption
- Innovation diffusion
- Knowledge communication
- Knowledge cycle
- Knowledge dissemination
- Knowledge exchange
- Knowledge management
- Knowledge mobilization (mobilisation)
- Knowledge transfer
- Knowledge translation
- Knowledge transformation
- Knowledge uptake
So What are Key Characteristics of KT?

• Knowledge is connected to research

• Actively connected to user/beneficiary group(s)

• Inclusive of all activities from generation of new knowledge to its use
Key characteristics of KT (cont.)

• KT helps identify what we know and what we don’t know – useful in planning future research

• KT aggregates knowledge combining old concepts with new concepts in order to try and define “what we know”

• Applies knowledge from research to solve/address practical issues or problems
Key characteristics of KT (cont.)

• KT encourages the interaction of knowledge creators (researchers, experts, and others) with knowledge users/beneficiaries (consumers, policymakers, and others); Participatory Action Research concepts and KT are very compatible

• KT initiates by establishing a specific question and context for answering that question – tied to a specific sample and a specific context for application

• Effective KT is interdisciplinary and multi-modal
Key characteristics

• KT includes all steps between the creation of new knowledge and its application.
• KT needs multidirectional communications.
• KT is an interactive process.
• KT requires ongoing collaborations among relevant parties.
• KT includes multiple activities.
• KT is a non-linear process.
• KT emphasizes the use of research-generated knowledge (that may be used in conjunction with other types of knowledge).
• KT involves diverse knowledge-user groups.
• KT is user- and context-specific.
• KT is impact-oriented.
• KT is an interdisciplinary process.
Knowledge Translational Model
(CTHR, 2005)
Knowledge Inquiry

- Primary research needs to be targeted to fill the known gaps in our knowledge base
- Primary research needs to be solutions-based
Synthesis

• Need for synthesis to determine what we already know (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
Products / Tools

- Practice guidelines
- Evaluation frameworks
- Specific assessment tools to populate the frameworks
Identify Problem

Identify, Review, Select Knowledge

• How to determine what is needed in a particular area? — from an individual and a systems perspective

• Who should identify the need for research?

• What strategies are effective for whom, under what circumstances?
Adapt Knowledge to Local Context

• How to tailor reports

• How to integrate knowledge and skills into an individual’s existing practice?

• What are the specific contextual variables that need to be taken into account when designing programs?
Assess Barriers to Knowledge Use

• What are the individual, organizational and team barriers to knowledge use?
• What are the individual, organizational, and team incentives to participate in and use the results of research?
Select, Tailor, Implement Interventions

• How can the knowledge be related/link ed to the learner’s work environment?
• How can your work be tailored to maximize impact?
• What are the most appropriate mechanisms or strategies to use?
Monitor Knowledge Use

• How is the knowledge being used?
• Have the potential barriers to use been overcome?
Evaluate Outcomes

- How to assess the impact of the application/use of knowledge
- What are good evaluation tools?
- What are appropriate outcomes to measure?
Sustain Knowledge Use

• How sustainable is knowledge use once the research project has been completed?

• How long are the skills/knowledge maintained?

• Has a need and appreciation for using knowledge been created and maintained?
Knowledge Translation process-1

• Knowledge dissemination,
• Communication, technology transfer,
• Ethical context,
• Knowledge management,
• Knowledge utilization,
• Two-way exchange between researchers and those who apply knowledge, implementation research, technology assessment, synthesis of results with the global context, and development of consensus guidelines
Knowledge Translation Process-1

Knowledge Translation process-2

Knowledge Creators (Researchers)

- Universities
- Government Agencies
- Research Institutions
- Private Companies
- Health Care Providers
  - Physician Offices
  - Physician Group Practices
  - Community Health Centers
  - Clinics
  - Hospitals
  - Long Term Facilities
  - Pharmacies
  - Public Health Departments
Knowledge Translation process

Research Types (Innovation)

- New Drugs
- New Medical Devices
- New Health Technologies
- New / Modified Diagnostic Procedures
- New / Modified Treatment Protocols
- New / Modified Surgical Procedures
- New / Modified Health Programs
- Changes in the Delivery of Care
- New Health Care Delivery Systems
Knowledge Translation process

Distillation of Knowledge

- **Who does the distillation?**
  - Researchers
  - Expert Panels
  - Professional and Policy Associations
  - Federal Health Agencies

- **How is it distillated?**
  - Evidence Summaries / Syntheses Papers
  - Consensus Processes for Decision Making
  - Criteria Selection
    - Effectiveness comparisons
    - Cost benefit analysis
    - Evidence need for the change
    - Transportability to real life conditions
    - Acceptance by practitioners and patients
    - Adoptability by the health care system
Knowledge Translation process-5

Diffusion and Dissemination

- Creation of Dissemination Partners
- Determination of the Targeted Health Professions
- Diffusion and Dissemination Methods
  - Academic and professional journals
  - Professional newsletters
  - Professional conferences
  - Professional associations
  - Websites
  - Fact sheets
  - Workshops / Webcasts
  - Professional continue education presentations
Adoption and Implementation

- Review New Innovation(s)
  - Processes
  - Treatments
  - Programs

- Decision Levels (PRN)
  - Health Care System
  - Health Facility
  - Practitioner

- Implementation
  - Notification of new innovation change(s)
  - Adjusting to any cultural needs of border patients
  - Training of the health care team
  - Pilot testing the new Innovation
  - Overcoming the barriers to change
  - Evaluating the innovation implementation
Knowledge Translation process

Institutionalization

- Successfully adopted
  - Practitioner Level
  - Facility Level
  - Health Care System Level

- Approval by external organizations
  - Regulatory Agencies
  - Credentialing Agencies
HOW TO FIX THE GAP

The evidence-to-practice puzzle

The clinician

Health Care System issues
- Patient
- Team members

The evidence/guideline

The educational delivery system
THE LATEST RESEARCH SHOWS THAT WE REALLY SHOULD DO SOMETHING WITH ALL THIS RESEARCH
TAKE HOME MESSAGE

• Making users aware of knowledge and facilitating their use of it
• Closing the gap between what we know and what we do
• Moving knowledge into action