Knowledge Translation:
The Lessons of History

Susan Slaughter, PhD, RN, GNC (C)
Faculty of Nursing
Disclosure

I have no relationship that could be perceived as placing me in a real or apparent conflict of interest in the context of this presentation.
Outline

1. Knowledge Translation Defined
2. Lost in Translation (The Tower of Babel)
3. Historical Insights / Barriers to Knowledge Translation
4. Conceptual Frameworks: Guides to moving knowledge to action
5. Knowledge Translation Interventions
6. Integrated KT and End-of-grant KT
7. Innovation Adoption, Sustainability and Spread
Definition of “Knowledge Translation”

“Knowledge translation is a dynamic and iterative process that includes the synthesis, dissemination, exchange, and ethically sound application of knowledge to improve health, provide more effective health services and products and strengthen the health care system.” (CIHR 2000)

http://www.cihr-irsc.gc.ca/e/45321.html
Tower of Babel

Applied Dissemination
Knowledge Utilization
Knowledge Transfer
Knowledge Exchange
Knowledge Mobilization
Knowledge Brokering
Knowledge Uptake
Knowledge Application
Knowledge Management
Diffusion of Innovation

Knowledge-to-Action
Research Utilization
Translation Research
Translation Science
Implementation Science
Linkage & Exchange
Technology Transfer
Guideline Implementation
Research Transfer
Know-Do-Gap

Information Dissemination and Utilization
Mode 2 Knowledge Production
Evidence-based Medicine in the Emergency Department

History of evidence-based medicine. Oranges, chloride of lime and leeches: Barriers to teaching old dogs new tricks

Steven Doherty
Emergency Department, Tamworth Base Hospital, Tamworth, New South Wales, Australia

Abstract

Knowledge translation is the process of taking evidence from research and applying it in clinical practice. In this article I will cite some pivotal moments in the history of medicine to highlight the difficulties and delays associated with getting evidence into practice. These historical examples have much in common with modern medical trials and quality improvement processes. I will also review the reasons why evidence is not used and consider what factors facilitate the uptake of evidence. Understanding these concepts will make it easier for individual clinicians and institutions to change clinical behaviour and provide a starting point for those looking at implementing ‘new’ practices, new therapies and clinical guidelines. Finally, I will offer a list of criteria that clinicians might choose to consider when deciding on whether or not to adopt a new practice, treatment or concept.

Key words: evidence, evidence-based medicine, history of medicine, knowledge translation.
History Lesson:
Delayed Benefits – Needless Morbidity & Mortality

✓ Scurvy and Limes

✓ Postpartum Infection, Death and Handwashing
Grant et al. (2005). Simpson, Semmelweis and transformational change. Obstetrics & Gynecology

✓ Night Shift Routines in a Long-term Care Facility
Summary of the Lessons of History

- Use of research knowledge can inform healthcare decision making (e.g., Clinical Practice Guidelines)
- Transfer of research findings into practice is often slow and haphazard
- New knowledge does not on its own lead to health impact or widespread implementation
- We need to be intentional to move research into practice, programs and policy.
Barriers to Research Use in Nursing

Barriers Scale (Selected items from 28 items)
(Likert scale from 1 to 4)

Characteristics of the **Adopter** (values, skills, awareness)
The nurse is unwilling to change/try new ideas.
The nurse does not see the value of research for practice.

Characteristics of the **Organization**
Administration will not allow the implementation.
Other staff are not supportive of implementation.

Characteristics of the **Innovation**
The literature reports conflicting results.
The research has not been replicated.

Characteristics of the **Communication** (accessibility of the research)
The research is not reported clearly and readably.
Implications for practice are not made clear.

Funk et al. 1991
Knowledge to Action Cycle

- Select, Tailor, Implement Interventions
- Assess Barriers to Knowledge Use
- Adapt Knowledge to Local Context
- Monitor Knowledge Use
- Evaluate Outcomes
- Sustain Knowledge Use
- Identify Problem
- Identify, Review, Select Knowledge

Graham et al., 2006
Successful implementation of research evidence is a function of:

- Evidence
- Context
- Facilitation

Kitson et al, 1998
Diffusion of Innovations Theory

”Diffusion is the process in which an innovation is communicated through certain channels over time among members of a social system.”

Everett M. Rogers, 1962
"An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption"

- Complexity
- Relative advantage
- Compatibility
- Observability
- Trialability
Communication Channels

Mass media
- create awareness of innovation

Interpersonal channels (social networks)
- forming attitudes to a new idea

Rogers EM, 1962
The Social System

✓ Solve common problems and reach a shared goal
✓ Formal and informal structures
✓ Opinion leaders and change agents
✓ Norms

Rogers EM, 1962
The time dimension is included in
- the implementation - decision process
- the adopter categories
- the rate of adoption

Rogers EM, 1962
Five Stages of the Innovation-Decision Process

Rogers EM, 1962

Prior Conditions
1. Previous practice
2. Felt needs/problems
3. Innovativeness
4. Norms of the social systems

Characteristics of the Decision-Making Unit
1. Socioeconomic characteristics
2. Personality variables
3. Communication behavior

Perceived Characteristics of the Innovation
1. Relative advantage
2. Compatibility
3. Complexity
4. Trialability
5. Observability

Communication Channels

Stage I: Knowledge
Stage II: Persuasion
Stage III: Decision
Stage IV: Implementation
Stage V: Confirmation

- 1. Adoption → Continued Adoption
- 2. Rejection → Continued Rejection
Adopter Categories
(based on innovativeness)

Innovators: Venturesome
Early Adopters: Respectable
Early Majority: Deliberate
Late Majority: Skeptical
Laggards: Traditional

Rogers EM, 1962
Knowledge Translation Interventions

EPOC* Classification

✓ **Professional interventions** (education, audit & feedback, reminders, opinion leaders)

✓ **Organizational interventions** (role revision, equipment availability, new skill mix, new teams, new continuity of care)

✓ **Financial interventions** (remuneration systems, fee-for service, salary, incentives, penalty, formulary)

✓ **Regulatory interventions** (health service change introduced by regulation or law, licensure, peer review)

*EPOC = Cochrane Effective Practice and Organization of Care Group

Types of Knowledge Translation

**End-of-Grant KT**

**Goal:** to raise awareness and promote action & application of findings

**Approaches:**
- Standard … publication in peer-reviewed journal & conference presentations
- Other … symposium with stakeholders & presentations to staff where data were collected

**Integrated KT** (partnerships; “exchange”)

**Goals:**
- to engage stakeholders in the research process
- to optimize relevance of the research
- To promote the uptake of the research

**Approaches:**
- Stakeholders participate in most steps of the research process from the early design stage to interpreting the findings and assisting with dissemination at the end of the study

[http://www.cihr-irsc.gc.ca/e/45321.html](http://www.cihr-irsc.gc.ca/e/45321.html)
Elements of Integrated Knowledge Translation

Knowledge users & researchers **work together** to:

- Shape the research questions
- Decide on the methodology
- Help with data collection and tools development
- Interpret the study findings & craft messaging around them
- Move the research results into the knowledge users’ practice
- Widespread dissemination and application
Adoption: the initial use or taking up of an innovation

Sustainability: the extent to which an innovation continues to be used after initial efforts to secure its adoption are complete (Rogers, 2003)

Spread: the transfer of an innovation from one unit or organization to another (stickiness is the degree of difficulty encountered during the knowledge transfer)
Conclusion

- Research does not end with reporting findings in academic journals or at scientific meetings

- Intentional effort is required to move research into practice or policy

- Principles derived from Translation Science can support the process of knowledge translation
Contact Information

Susan Slaughter
Faculty of Nursing
University of Alberta
susan.slaughter@ualberta.ca