



INSTITUTE
FOR WORK & HEALTH
INSTITUT DE RECHERCHE
SUR LE TRAVAIL ET
LA SANTÉ

From Research to Practice: A Knowledge Transfer Planning Guide

About this report:

Authors: Rhoda Reardon, John Lavis, Jane Gibson

If you would like to receive a copy of this or any other of our reports, please contact us at:

Institute for Work & Health
481 University Avenue, 8th Floor
Toronto, Ontario M5G 2E9
416-927-2027 extension 2173

Or you can visit our web site at www.iwh.on.ca

© 2006 Institute for Work & Health

For reprint permission contact the Institute for Work & Health

**From Research to Practice:
A Knowledge Transfer Planning Guide**

Developed by the Institute for Work & Health
with John Lavis

Introduction

This workbook is intended to be used in conjunction with a facilitated workshop; however, the materials will also be useful to guide knowledge transfer planning when workshop participants return to their own organizations. The workshop book is based on the model of knowledge transfer and exchange developed by the Institute for Work & Health.

Evidence and Experience

The information in this workbook comes from experienced practitioners in Knowledge Transfer and Exchange who have interpreted evidence (about what works in knowledge transfer) and have then applied it in real-world settings. We encourage you to explore the evidence for yourself and hope the references provide you with a useful starting point. When we have taken definitions directly from published work, the reference is noted.

Knowledge Transfer Models

The current literature describes three models of Knowledge Transfer:

1. Producer Push:

The producers of research knowledge explicitly plan and implement strategies to push knowledge towards audiences they identify as needing to know.

2. User Pull:

The users of research knowledge explicitly plan and implement strategies to pull knowledge from sources they identify as producing research useful to their own decision-making.

3. Exchange:

Relationships are built and nurtured between those who produce research and those who might use research knowledge to enable an exchange of information, ideas and experience. Integral to the exchange is researchers helping audiences to build capacity to use research knowledge and audiences helping researchers work be more relevant. Dr. John Lavis, who has extensively investigated knowledge transfer and who pioneered the Institute model says: “exchange relationships can bring about a cultural shift that facilitates the ongoing use of research knowledge among decision-makers and a more decision-relevant culture among researchers.”

The knowledge transfer field is moving towards the Exchange Model as the most ideal. It does however mean that time energy and resources must be allocated to support the exchange.

Five Key Principles:

John Lavis has provided a very accessible formulation of the evidence on knowledge transfer which he expresses as five principles that should guide knowledge transfer to maximize uptake. These principles can be expressed as five basic questions:

What (is the message)?

To whom (audience)?

By whom (messenger)?

How (transfer method)?

With what expected impact (evaluation)?

The worksheets that follow elaborate further on each principle and assist the user to apply each to their own work.

Building Relationships for Knowledge Exchange

The “exchange model” of knowledge transfer requires that some kind of relationship exists between those who generate research knowledge and those who might put the knowledge to use. Such relationships are characterized by regular exchanges of information, ideas and experience.

More research is needed to fully explore the benefits of such relationship-building. However, some evidence is emerging that when researchers have an ongoing relationship with public policy-makers, members of this particular audience are more likely to use research knowledge in their decision-making.²

It’s useful for anyone involved in knowledge transfer to start thinking about the process of building relationships with audiences. But we feel it’s important to remind you that effective and worthwhile relationship-building depends on certain criteria:

There is a stable research agenda. Relationship building is best undertaken when research of interest to the audience is ongoing and more findings are expected and can be transferred over time.

There is mutual readiness to listen and learn. Both partners in the transfer and exchange process – those who transfer research information and the potential audience who might use that information—must be convinced that the exchange offers something of value. The researcher may produce new information that helps the user make better-informed decisions; the audience may in turn tell researchers things they want to know – for example, what happened when research knowledge was used in the “real world” and what research priorities should be targeted.

There must be investment in Knowledge Transfer. Audiences are constantly changing – old members leave, new members join, the size of an audience may decline or grow. Building and sustaining relationships with ever-changing audiences requires a long-term investment of resources. This is especially important when a large audience is involved – for example, clinicians (vs. a relatively small audience such as policy-makers.)

Clearly, it is beyond the scope of this workbook to guide users in relationship building for the purpose of knowledge exchange. Indeed, this topic probably deserves its own separate “workbook.”

References:

¹Grimshaw, Jeremy et al; Changing Provider Behaviour: An Overview of Systematic Reviews of Interventions; *Medical Care* Volume 39; No. 8 Supplement 2, pp 11-2-11- 45, 2001

Education Outreach & Academic Detailing References:

Soumerai, S.B.; (1990) Principles of Education Outreach ('Academic Detailing') to Improve Clinical Decision-Making. *Journal of the American Medical Association*, January 26, 1990 - Vol 263, No. 4

Interactive References:

Davis, D. et al; (1999) Impact of Formal Continuing Medical Education: Do Conferences, Workshops, Rounds, and Other Traditional Continuing Education Activities Change Physician Performance. *Journal of the American Medical Association*, September 1, 1999 - Vol 282. No 9

Networking references:

Doreian, P. & Woodard, K.L. (1994). Defining and locating cores and boundaries of social networks. *Social Networks*, 16, 267-293.

Doreian, P. & Woodard, K.L. (1992). Fixed list versus snowball selection of social networks. *Social Science Research*, 21, 216-233.

Ebers, M. (1997). Explaining inter-organizational network formation. In Ebers, M. (Ed.). *The formation of inter-organizational networks*. New York: Oxford University Press.

Opinion Leader references:

Ryan, D.P. et al; (2002) Educationally Influential Physicians: The Need for Construct Validation. *Journal of Continuing Education in the Health Professions*, Summer 2002, Vol. 22 Issue 3

Lomas J, Enkin M, Anderson GM, Hannah WJ Vayda E, Singer, J (1991) Opinion leader vs audit and feedback to implement practice guideline: Delivery after previous cesarean section, *Journal of the American Medical Association*, 265, 2202 - 2207

Hiss RG, Macdonald R & Davis WR; (1978) Identification of Physician Educational Influentials in Small Community Hospitals, *Res Med Educ*. 1978; 17:283-288

Hiss RG, Stross JK, Davis WK, Macdonald R. (1979) Development and Evaluation of a Community-based Pulmonary Education System. *Annu Conf Res Med Educ.* 18

Grzybowski S; (2000) Identifying Educational Influentials for Formal and Informal Continuing Medical Education in the Province of British Columbia, *J Contin Educ Health Prof*, 20: 85-90

Policy-maker references:

²Lomas J, (2000) Using 'Linkage and Exchange' to Move Research Into Policy at a Canadian Foundation, *Health Affairs*, vol. 19, No. 3

Weiss, Carol H, (1979) The Many Meanings of Research Utilization, *Public Administration Review*, 39(1779):
p 426-431

**Knowledge Transfer Planning Guide:
Worksheets**

Knowledge Transfer Project Planning – Creating Messages

Creating a message for transfer:

An important step in planning a knowledge transfer project is determining ‘WHAT’ you have to say. This process ‘translates’ or ‘transforms’ research findings into a ‘message’. At the Institute for Work & Health, we think of our messages as 3 ‘types’ and we find that determining the type of message can help with the decision of how to transfer.

Type 1 Message:

Credible facts and data – trusted, easily accessible, accurate facts and figures e.g. “The point prevalence of low back pain amongst Canadian workers is 10-20%.”

Type 2 Message:

Findings and conclusions which, due to limited strength of evidence or the nature of the evidence, cannot ‘direct’ decisions but which can be used in a dynamic exchange between researcher and audience. e.g. “During the first month on the job, all workers regardless of age are at an increased risk for injury.”

Type 3 Message:

A body of evidence which can be expressed as an actionable idea which relates to a specific audience’s decision-making i.e. provides recommendations, advice or directs action (who should act? what should be different?) e.g. “When a comprehensive back examination rules out red flags, patients need reassurance and encouragement to stay active but do not need x-rays or exercise therapy.”

What type of message can be translated from your findings?

Here are some questions to guide your thinking:

- is there sufficient evidence to develop an actionable idea? (recommendations, advice, direct action – who should act? What should be different?)
- who is the message relevant for? What decision(s) that this audience owns or influences might be impacted by the message?

Be specific when defining an audience.

For example, rather than: ‘clinicians’, say, ‘physiotherapists who treat adults with shoulder injuries’. How well do you know the audience? In order to create the message, you must know the audience well enough to understand:

- their day-to-day decision making (the message should link to this) and,
- the gap between what the evidence says and practice.



Creating Messages Worksheet

Message	Audience	Message Type

Knowledge Transfer Project Planning – Understanding Audiences

Understanding Audiences:

Messages (particularly type three) should be created with a specific audience in mind so that from the outset you have determined WHO could use the research-based information. It's useful to think of all audiences as 'decision-makers' since 'decisions' are what might be improved with research evidence. John Lavis sums this well when he says: 'use the term decision-makers rather than users to help focus the discussion on what people actually do (make decisions) not what we may wish they would do (use research).

Understanding audiences is supported when there is an ongoing 'exchange' relationship established between the decision-makers and research producers. The information you complete in the table below will expose where there are gaps in your audience knowledge and provide valuable details for planning a knowledge transfer project.

Understanding Audiences Worksheet

Check your audience knowledge	
Which relevant 'decisions' does the audience 'own' or 'influence'?	
Who is a credible messenger to this audience? (uptake is enhanced if the audience sees the messenger as credible). Is there an opportunity to partner with messengers viewed as credible by the audience?	
Is this audience connected to existing networks or 'knowledge pathways'?	
Barriers & Facilitators - planning a transfer to address barriers can enhance uptake	
What is the magnitude of the change suggested in the message?	
Is there a 'cost'? (to whom?) a net 'gain' (for whom?). Think of cost money – who is advantaged/disadvantaged?	
Does the change require resources or expertise? Are they available?	

Knowledge Transfer Project Planning – Transfer Methods

Deciding HOW to transfer:

There are many considerations in selecting the knowledge transfer method – nature and size of audience, budget and resources to name only a few. Regardless the audience, the evidence suggests that active engagement results in the best uptake.

Our practical experience has also taught us that ‘packaging the message’ in a manner that makes it easy to apply in day-to-day practice is favoured by audiences (e.g. workbooks, decision aids, patient education materials, pocket cards, self-audit tools etc.).

As stated previously, when there is an ongoing relationship with the audience, planning the actual transfer project can be a natural joint endeavour. The table below is intended to assist with a review of a variety of transfer mechanisms – providing a brief definition and/or example. The methods are grouped according to the strength of evidence from Grimshaw’s systematic review, “Changing Provider Behaviour¹” but a significant caution is that these results have poor generalizability.

Transfer Methods Worksheet

Use this to think through the HOW question, i.e. the actual transfer mechanism. The explanation notes provided come from IWH's practical experience and from published literature as referenced.



Evidence: Systematic review evidence shows method is generally effective¹	
Transfer mechanism	Feasibility notes
<p>Academic detailing/Education outreach “Use of trained person who meets with providers in their practice setting to provide information with the intent of changing the provider’s performance 1” e.g. a lunch meeting in a group practice setting to review evidence on managing a particular condition - method widely used by drug companies</p>	
<p>Interactive education sessions Participants have ample opportunity for participation – discussion, apply learning to their own setting, practice new skills. e.g. small group workshops.</p>	
<p>Reminder Messages “Any intervention that prompts the health care provider to perform a patient action or encounter-specific action(1)” e.g. an x-ray ordered for acute back pain might have a reminder on the radiology report that x-rays are not necessary in the absence of ‘red flags’ or, the x-ray prescription might have a section where the clinician must check off the red flag detected which resulted in their x-ray order.</p>	
<p>Interventions tailored to overcome identified barriers A process is used to identify barriers to using the evidence within a discipline, practice group or community and a knowledge transfer plan is developed to attempt to overcome the specified barrier(s). e.g. clinicians identify that it takes too much time to provide patients with education about their condition and the KT plan addresses this barrier by creating a patient education booklet that the clinician can use to review the education principles and then hand-off to the patient for home reinforcement.</p>	

(1) Grimshaw, Jeremy et al; Changing Provider Behaviour: An Overview of Systematic Reviews of Interventions; Medical Care Volume 39; No. 8 Supplement 2; 2001

Transfer Methods Worksheet (continued)

Evidence: Systematic review evidence shows method has variable effectiveness¹	
Transfer mechanism	Feasibility notes
<p>Audit & Feedback</p> <p>“Any summary of clinical performance over a specified period of time. Summarized information may include the average number of diagnostic tests ordered, the average cost per test or per patient, the average number of prescriptions written, the proportion of times a desired clinical action was taken, etc. The summary may also include recommendations for clinical care.” e.g. family practitioners receive information about their pattern of referral for back x-rays in the past six months compared to the average of family practitioners in their geographic area over the same period – this is accompanied with a summary of the evidence on use of back x-ray in acute back pain</p>	
<p>Opinion Leaders (multiplier effect)</p> <p><u>Formal Opinion Leaders</u> Use of individuals who are identified based on their high profile within a discipline or practice group, e.g. those who are well known presenters, academics, professional representatives etc.</p> <p><u>Informal Opinion Leaders</u> (AKA “educationally influential”) “Use of providers nominated by their colleagues as “educationally influential where the opinion leaders were identified by their colleagues”.</p> <p><u>Multiplier Effect</u> When the opinion leaders’ awareness, knowledge, attitude, or behaviours are changed in the direction of the evidence, the effect on practice is ‘multiplied’ as they continue to interact with the peers they influence (mechanism not fully understood)</p>	
<p>Patient-Mediated Intervention</p> <p>“Any intervention aimed at changing the performance of health care providers where specific information was sought from or given to patients” e.g. an injured worker is given a summary of their job demands and information on the company’s return to work policy and potential for job accommodation and encouraged to share this with their health care provider</p>	

(1) Grimshaw, Jeremy et al; Changing Provider Behaviour: An Overview of Systematic Reviews of Interventions; Medical Care Volume 39; No. 8 Supplement 2; 2001

Transfer Methods Worksheet (continued)

Evidence: Systematic review evidence shows method is generally ineffective as a 'stand alone' intervention¹	
Transfer mechanism	Feasibility notes
<p>Didactic Lectures Sessions where the audience passively receives information but there is with little or no interaction between audience and presenter (e.g. Q&A only) e.g. typical conference style presentations</p>	
<p>Education Materials "Distribution of published or printed recommendations for clinical care, including clinical practice guidelines, audio-visual materials and electronic publications" (1). e.g. mass mailing of evidence-based guidelines</p>	
Evidence: No evidence from systematic review	
<p>Electronic Communication Use of the internet or intranet including web sites, email, list serves, web casts, interactive web-based tools (chat rooms, bulletin boards)</p>	
<p>Media: Use of television, radio, newspapers, magazines, billboards to increase awareness or change behaviour e.g. change public awareness of HIV risk and promote change in sexual practices</p>	

(1) Grimshaw, Jeremy et al; Changing Provider Behaviour: An Overview of Systematic Reviews of Interventions; Medical Care Volume 39; No. 8 Supplement 2; 2001

Knowledge Transfer Project Planning – Defining Impacts

What does the knowledge transfer project hope to change?

Spending time at the beginning of a knowledge transfer project considering ‘WITH WHAT IMPACT’ is important whether or not you plan to formally evaluate the initiative. Deciding on the desired outcome helps in planning the scope of the knowledge transfer project and in selecting the approach. Think about impacts as:

1. Indirect Use:

i.e. changes in knowledge, awareness, or attitude (also known as ‘conceptual use’ or ‘enlightenment’) e.g. research has informed political debate; or audiences have adopted the ideas, concepts or language of the research to inform decision-making and assist problem-solving

2. Direct Use:

i.e. changes in behaviour (also known as instrumental, structural or problem-solving use) e.g. observed or self-reported changes in policies, procedures and programs; changes in clinical practice; improved patient care and outcomes

3. Tactical Use:

i.e. research is used to validate or legitimize or defend a position already taken or taken for other reasons (also known as political, structural or strategic use) e.g. politician selects a study that validates a policy direction as opposed to reviewing all the evidence to inform policy direction (although this not the kind of use researchers are planning for, such use of research is perhaps inevitable – strong relationships between researchers and audiences can minimize structural use.

Defining Impacts Worksheet

Impact	Potential measures & indicators	Potential data collection strategies