Building capacity for health research transfer in Western Canada

An environmental scan
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For more information, contact
Evaluation, Analysis, & Information Services
Alberta Heritage Foundation for Medical Research
Suite 1500, 10104 – 103 Avenue
Edmonton, Alberta
T5J 4A7 Canada
Web: www.ahfmr.ab.ca

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Building capacity for health research transfer in Western Canada

An environmental scan

Prepared by

Judy M. Birdsell, Ph.D.
Karen Omelchuk, MBA
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Prepared by Judy Birdsell and Karen Omelchuk

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Design: Bob Robertson

Additional information and comments relating to this report are welcome and should be sent to
Manager, Evaluation, Analysis & Information Services
Alberta Heritage Foundation for Medical Research
Suite 1500, 10104 – 103 Avenue
Edmonton, Alberta, Canada T5J 4A7
E-mail: richard.thornley@ahfmr.ab.ca

Project steering committee

Richard Thornley, Chair | Alberta Heritage Foundation for Medical Research
Donna Angus | Alberta Heritage Foundation for Medical Research
June Bold | Saskatchewan Health Research Foundation
Carole Estabrooks | University of Alberta
Christa Harstall | Institute of Health Economics
Kathleen Hunter | Health Canada
Murray McKay | Alberta Health and Wellness
Tim Murphy | Michael Smith Foundation for Health Research
Cathie Scott | Calgary Health Region

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KEY FINDINGS

Building capacity for health research transfer in Western Canada:
An environmental scan

• Interest and engagement in health research transfer are high in Western Canada. The healthcare system is ready for action. Respondents report that research transfer (RT) is more important in their organizations than current activity suggests. There is clear acknowledgement of the value of using research to change outcomes in the system. There is also significantly more awareness of the field, and interest in it, than when AHFMR sponsored a similar exercise in 1999–2000.

• People prefer to talk about “research use”. Many recognize the value of shared understanding, but they question the wisdom of trying to force any particular terminology. What is important is to talk about using research within different contexts, and to use the language that is most meaningful for a given audience.

• Many informal and formal RT capacity-building entities are well established in Western Canada. Some well-known and highly regarded programs are SEARCH Canada; the Health Quality Council in Saskatchewan; the Manitoba Centre for Health Policy (especially its Need to Know program); the Health Services and Policy Research Support Network in British Columbia; and the Research Transfer Network of Alberta.

• Formal programs and activities for RT capacity-building are the focus of this scan. They are described and analyzed according to the six dimensions of a Health Research in Practice (HRIP) framework. Analysis shows that knowledge movement and linkage and exchange generally see the highest level of activity. Research generation is often a stand-alone activity. Activity in research synthesis, knowledge movement, and linkage and exchange tends to occur across these three activities; implementation

• To continue building RT capacity, informants recommended
  – focusing at the health-system level;
  – building on strengths;
  – focusing on a new breed of personnel;
  – funding research transfer across the system;
  – involving provincial governments as role models and core partners; and
  – providing evidence that research transfer works.

• Opportunities for collaboration across provincial borders are needed. Mechanisms are needed to support sharing of lessons learned, reducing duplication and identifying specific areas for joint action.

• We need to continue to increase our understanding about how the body of RT knowledge can be enhanced (as compared to either doing research transfer or increasing knowledge about specific health-related topics).
EXECUTIVE SUMMARY

Building capacity for health research transfer in Western Canada: An environmental scan

Background

This document presents the results of an environmental scan on health research transfer (RT) commissioned by the Alberta Heritage Foundation for Medical Research (AHFMR) to inform its planning processes. The scan assesses the current state of support for RT capacity-building entities in Western Canada (British Columbia, Alberta, Saskatchewan, Manitoba, Yukon, and the Northwest Territories). It has two main areas of focus: capacity-building (programs, initiatives, and resources in the area of research transfer); and research (research conducted on this topic). Additionally, for illustrative purposes, information is also provided on implementation (individuals and organizations that actually do RT work).

A steering committee guided the project, and a project team with considerable experience in the RT field completed the scan. Interviews with 42 individuals were the primary source of data; however, documents and website searches also informed the scan. Results include factual information related to RT capacity-building entities, research, and implementers, as well as the opinions of expert informants on how to improve the RT environment. Results were collected and analyzed using a revised version of AHFMR’s “Health Research in Practice” (HRIP) framework. This framework has six dimensions: research generation; research synthesis; knowledge movement (dissemination and access); linkage and exchange; implementation; and outcomes and evaluation.

Talking about research transfer

In speaking of research transfer, informants preferred and most often used the term research use. Many other terms were acknowledged as being legitimate, including knowledge transfer, knowledge translation, evidence-informed decision-making, research implementation, and application of research. The choice of term depends primarily on the audience. Opinions varied on the need for, and feasibility of, a single generally accepted term.

Informants were asked to quantify the importance of research transfer to their organizations. This was difficult for almost everyone because of the complexity of research transfer itself, as well as the complexity of people’s work environments. Generally speaking, people viewed the importance of research transfer in their organizations to be higher than was suggested by the actual dollars or resources dedicated to it.

Building capacity for research transfer

Initially, respondents identified a large number of RT capacity-building programs and activities (about 120). To reduce this number to a more manageable size, those mentioned were categorized as being either formal or informal, and—with reference to their targeted audiences—either internal or external. The most commonly mentioned informal capacity-building elements included a capacity-building philosophy and/or research-use approach within the organization; linkages and relationships; changing expectations of granting agencies; refinements in human-resource practices and development; and organizational structures and processes. Externally oriented formal programs were the primary focus of this environmental scan. These programs were either performing activities that resulted in research use (for example, a research and evaluation unit in a health authority) or enabling them (for example, funding agencies).

Generally speaking, in terms of the Health Research in Practice framework, the greatest activity was observed in the knowledge movement and linkage and exchange dimensions. Research generation is often a stand-alone activity, not linked to other dimensions of the framework. Activities often cluster in the synthesis, movement, and linkage and exchange dimensions. If a program or activity was noted to be involved in implementation, it was almost always involved in at least one other framework dimension. Few outcomes and evaluation efforts were explicitly
mentioned (though evaluation activities may be inherent in the capacity-building entity in question). The few capacity-building entities within research-using organizations that received frequent mention often involved activity in most, if not all, of the dimensions of the HRIP framework.

Specific capacity-building programs or activities that warrant particular mention include those administered by the three relevant federal granting agencies: the Canadian Institutes of Health Research, the Canadian Health Services Research Foundation, and the Social Sciences and Humanities Research Council of Canada. In Western Canada, other notable mentions include SEARCH Canada, the Saskatchewan Health Quality Council, the Manitoba Centre for Health Policy, the Health Services and Policy Research Support Network (in British Columbia), the Research Transfer Network of Alberta, and the Tri-Territorial Applied Health Research Network.

Although excellent interprovincial collegial relationships were noted, SEARCH Canada is one of the few formal interprovincial programs or activities.

Research about research use

Funding-agency databases and websites were the primary source of information for the part of the scan concerned with RT research. Searches were complicated by numerous factors, including the multiplicity of terms used in this field. Results show that there is a very small number of researchers in Western Canada who focus primarily on RT research. That said, Western Canada is well represented when compared with the rest of the country. In particular, three of the five top-funded researchers in Western Canada are based at the University of Alberta.

Research projects tend to fall into one of three categories: (a) those involved in the so-called basic science of research transfer; (b) those that focus on a specific topic area other than research transfer, but that afford an opportunity to add knowledge to the RT field; and (c) implementation research, whereby there is an opportunity to gain RT knowledge through secondary processes. There are researchers in the second and third categories in all four provinces; strength in the first category is concentrated primarily in Alberta at present. No current RT research activity was identified in the Territories.

Doing RT in Western Canada

To provide a sense of what RT looks like in practice, this report describes four examples of RT implementation sites: (a) the Capital Care Group in Edmonton, Alberta; (b) the Need to Know Team in Manitoba; (c) the Population Health Division of the Government of the Northwest Territories; and (d) the HIV Trials Network, based in Vancouver, British Columbia.
### Enabling research use or creating barriers to it

The following were identified as factors that help or hinder progress in health research transfer:

<table>
<thead>
<tr>
<th>HRIP framework dimension</th>
<th>Enabling forces</th>
<th>Barriers</th>
</tr>
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| **Research generation**  | Excellent research knowledge | Problems in the research production stream:  
• disincentives in the university system  
• lack of RT researcher capacity |
|                          | Knowledge about what research transfer involves (skills, mechanisms, infrastructure) | |
|                          | Early engagement of decision-makers in research | |
| **Research synthesis**   | Knowledge that is accessible and synthesized | Lack of capacity and methods for real-world synthesis |
| **Knowledge movement**   | Knowledge that is there when you need it | Knowledge that is not in accessible formats, or not accessible at all |
| **Linkage and exchange** | Connecting and reflecting in the “white space”  
Trusting, respectful relationships | Lack of partnership skills  
Poor federal–provincial collaboration |
| **Implementation**       | Enabling environments (people skills, organizational structures, supportive cultures)  
Issue-focused teams | Lack of funding for transferring research into policy  
Problems in the user system (no incentives for research transfer, human-resource shortage) |
| **Outcomes and evaluation** | Evidence that research transfer works | Culture of doing, not studying |
| **Other factor**         | Leadership by government  
Capacity-building programs | Lack of leadership from governments (failure to “walk the talk”; fear of losing control over knowledge; threats of accountability expectations) |
Recommendations from the field

Interviewees made the following general recommendations designed to facilitate improvements in using health research:

1. **Focus at the system level.** The need to identify specific targets for improvement, and then to plan at multiple levels to access and use research results, was a predominant theme.

2. **Build on existing strengths.** Many wish to expand the influence of entities that have already proven their value; e.g., SEARCH Canada, electronic desktops, and the Need to Know program.

3. **Foster a new breed of personnel**—now and in the next generation—by creating hybrid positions.

4. **Fund research transfer across the system.**

5. **Involve provincial governments** as role models and core partners.

6. **Demonstrate** that research transfer results in improvements in the system.

This scan has made the case that the healthcare system is ready to take action to improve use of research. It can help realize a return on the investments that have been made, and will continue to be made, in health research.
Building capacity for health research transfer in Western Canada: An environmental scan

1.0 Background

The Alberta Heritage Foundation for Medical Research (AHFMR) was established in 1980 by the government of Alberta through the Alberta Heritage Foundation for Medical Research Act [revised, 2000]. The objective of AHFMR, as outlined in the Act, is to develop and support a balanced, long-term program of medical research based in the province. This research program is directed to the discovery of new knowledge and the application of that knowledge to improve health and the quality of health services in Alberta [Alberta Heritage Foundation for Medical Research, 2001].

In the area of applied health research, AHFMR’s goal is to increase the capacity of the health system as a whole for doing and using health research. Currently, one of the organizations involved in these activities, the Research Transfer Network of Alberta (RTNA), has new leadership; strategic-planning processes are underway which require an environmental scan on the state of research transfer (RT). Furthermore, a group of AHFMR’s RT-interested stakeholders noted in a 2005 meeting [Birdsell, Thornley, Landry, Estabrooks & Mayan, 2005] that one of their most pressing needs was to have a better sense of the state of knowledge transfer in Alberta.

Spurred by these two expressions of need, in November 2005 AHFMR proceeded with this environmental scan by hiring a consultant and forming a steering committee that collaboratively developed a project plan. The plan defined the scan’s overall purpose, questions, areas of focus, scope, sources of information, data-collection instruments, methods for data synthesis and analysis, and an outline of the final report.

This document presents the results of that environmental scan.
2.0 Purpose, focus, and scope

The purpose of this scan was twofold: (a) to assess the current state of research transfer support in Western Canada; and (b) to inform direction-setting and coordination of programs and projects across the region.

While acknowledging the confusion surrounding terminology in this area, we tend to use the term research transfer in this document. We recognize that transfer may be conceptually too narrow for some audiences, and that other terms such as exchange and utilization are possibly more inclusive. We also acknowledge that the term knowledge can, and often does, include more than research results; however, knowledge emanating from research processes is the primary interest in this scan. Research transfer is the term used by a primary stakeholder in this project—the Research Transfer Network of Alberta—and for that reason we use it throughout this report. (Note that we abbreviate it to RT when using it as a modifier, as in “RT research” or “RT activities”.) In certain cases, where a respondent or organization uses a term other than research transfer, we have used that original term.

In examining the support for research transfer in Western Canada, this scan provides information on the following:

- **Capacity-building** – programs, initiatives, and resources that are building capacity for research transfer

- **Research** – individuals who are conducting research into research transfer

- **Implementers** – individuals and organizations that are actually doing RT work

Capacity-building and research were the primary areas of focus of the scan; information on implementers is provided only for purposes of illustration. The geographic scope of the scan is Western Canada—British Columbia, Alberta, Saskatchewan, Manitoba, Yukon, and the Northwest Territories—but national initiatives that have (or may have) an impact in the West are also included.

This scan is concerned with capacity to transfer and use research knowledge, and efforts in Western Canada to increase that capacity. In a general sense, we can think of capacity as the power or capability to do things—to learn, produce, deploy, or perform. More specifically, the Canadian Health Services Research Foundation (CHSRF) [n.d.] defines capacity as “the set of skills, structures, and processes, as well as the organizational culture, that allows, encourages, and rewards knowledge exchange”.
### 3.0 Methods

In addition to the three main areas of focus listed in Section 2, expert opinions were obtained on factors that might aid or impede research transfer, as well as recommendations on how to improve the RT environment. As indicated in Table 1, three sources—interviews, website and database searches, and documents—inform each scan area to varying degrees.

<table>
<thead>
<tr>
<th>Scan area of focus</th>
<th>Relative contributions of data source</th>
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<tr>
<td></td>
<td>Interviews</td>
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<tr>
<td>Capacity-building programs and initiatives</td>
<td>primary</td>
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<tr>
<td>Research</td>
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<td>Implementers</td>
<td>primary</td>
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<tr>
<td>Expert opinion</td>
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A project team with considerable experience in the field of research transfer determined who should be interviewed, developed the interview questions and guide, and collected and interpreted data.

The team attempted to include representatives from a range of sectors (for example, research units, funding organizations, health authorities, and government departments) in each jurisdiction where that made sense. A total of 42 individuals were included in 35 interviews (some interviews included several people): 5 interviews were conducted in British Columbia, 11 in Alberta, 6 in Saskatchewan, 4 in Manitoba, 1 in the Yukon, and 1 in the Northwest Territories. In addition, 3 representatives from national organizations and 4 other individuals with a national perspective on RT were interviewed.

A caveat is in order here: although we ensured that respondents from various sectors were included in the survey, the sampling was not adequate to make any assertions that the information provided by individuals was representative of those sectors. This is particularly true of the user and research sectors. We did endeavour to include all RT capacity-building entities in Western Canada.

Initially, the team had planned to develop a database, following the lead of the Ottawa Health Research Institute (OHRI), which created a Microsoft Access database to capture organizations and individuals active in knowledge translation, and to record key variables relating to their activities and connections [“An environmental scan”, 2005]. However, it became apparent that our data needs were going to be quite different from those of the OHRI; consequently, interview data were recorded in Microsoft Word. Information about capacity-building entities was entered into Microsoft Excel for further analysis. After the interviews, additional information was sought on the capacity-building entities previously identified. In the first phase, any and all capacity-building entities mentioned were recorded; decision criteria about which entities to include for further analysis were developed subsequently.

Appendix 1 lists the names and organizations of the interviewees. Appendix 2 is a list of recognized abbreviations for organizations that came to light in the course of data collection. Appendix 3 considers each of the organizations identified by the scan in terms of the Health Research in Practice framework.

#### 3.1 Terms used by funding agencies

Three national agencies—the Canadian Health Services Research Foundation (CHSRF), the Canadian Institutes of Health Research (CIHR), and the Social Sciences and Humanities Research Council of Canada (SSHRC)—speak increasingly about research transfer, and incorporate it into their mandates and activities. In Western Canada, AHFMR has been very active in research transfer; arguably, even longer than these national agencies. Concepts referred to by each of these organizations and positions taken by each on terminology were drawn upon for data analysis.
3.2 “Health Research in Practice” framework

In considering how RT capacity might be increased so as to improve health-related outcomes in Western Canada, one objective of this scan was to identify existing gaps and possible opportunities. In order to identify gaps, it would be useful to have some sense of what an ideal or complete system would look like. Of course, no such thing exists. There is no comprehensive theory of research use. A recent systematic review done in the United Kingdom [Greenhalgh, Robert, Bate, Macfarlane, & Kyriakidou, 2005] focused on innovation in health-service organizations. We decided not to use the conceptual model that emerged from the review in this environmental scan, because the model focuses on only one of the main components of the system, albeit in a very thorough way.

AHFMR [2001] had crafted a conceptual framework, called “Research in Practice”, to provide an organizing schema for the activities related to enhancing impact from research in the province. We used this as a starting point in establishing a frame of reference for the present study, as it enabled the consideration of entities arising from a variety of settings in the system. Working with—and in some senses testing—the framework for the purposes of this scan led us to modify it slightly, to reflect current thinking. As the “Health Research in Practice” (HRIP) framework, we used it to analyze results and reflect multidirectional relationships between the various activities described in this report.

The revised framework placed linkage and exchange at the centre of all the other dimensions, as illustrated in Figure 1. In the past five years, this aspect of the knowledge (research-use) cycle has come to be acknowledged as critically important. Because the very essence of it is connecting people—and, through them, ideas and knowledge—it was moved to the central location in the HRIP framework. Identification of areas where new knowledge is needed arises from all of the activities taking place in the cycle. Additionally, the dissemination dimension was re-labelled as knowledge movement to reflect both the dissemination of knowledge (push) and the accessing of knowledge (pull).

Figure 1. Dimensions of the Health Research in Practice framework and their interrelationship
The HRIP framework suggests that the following six components are essential within a system that supports the transfer and utilization of research findings to enhance health and health-system outcomes:

1. **Research generation.** Investigator-initiated research from many disciplines provides the foundation upon which applications are made. Although not traditionally thought of as research, knowledge derived through the analysis of administrative data within the health system is of increasing importance.

2. **Research synthesis.** Managing rapidly expanding bodies of knowledge is becoming an increasingly important area, in order to make research findings accessible to busy practitioners and researchers. Initiatives such as health technology assessment and the Cochrane Collaboration are more and more common. However, this dimension is not restricted to formal, systematic reviews; it is about “sense-making” when faced with a large number of individual research reports.

3. **Knowledge movement** (termed “dissemination” in the original framework). Useful knowledge needs to be accessible in a timely fashion to those who are in a position to use it. Access encompasses many dimensions, including real and perceived elements (e.g., time required, format of information, and trustworthiness of source and setting). This needs to be viewed from two perspectives. From the researcher perspective, there is a preoccupation with having knowledge made accessible to users. Some call this *knowledge push*. From the user perspective, knowledge needs to be accessible when it is needed, and in a form that makes it meaningful to the using context. Some call this *knowledge pull*.

4. **Linkage and exchange** (“engagement” in the original framework). Those for whom research knowledge could be useful need to have the ability to attend to the information and an interest in doing so. This is most effectively done when there is communication and collaboration between those with research expertise and decision-makers in the health system. One increasingly common strategy for linking is to involve users in research projects from the early stages.

5. **Implementation.** Applying research knowledge for positive impact in complex organizational and policy contexts and at the point of service delivery requires a broad understanding of health systems, as well as a wide range of knowledge regarding organizational structures and processes. Experiential knowledge or knowledge emerging from operations in the user setting must be valued in a dynamic system where research knowledge is, hopefully, at least considered.

6. **Outcomes and evaluation.** Conscious, concerted attention to the outcomes and impact of various approaches is critical. This is relevant at two levels: first, at the level of the specific entity seeking to incorporate research knowledge into decision processes; and second, at a generic level, where the evaluation of interventions is designed to enhance capacity.
4.0 Limitations

This scan did not consider the full range of topics or capacity-building entities relevant to the subject of research transfer. There are several areas of life that can be affected by the use of research: health, health systems, policies, new products and services, commercial activity, and economic development. Within each of these areas, there are different groups of users (or individuals and groups that may use research results in a variety of settings); in the policy arena, for example, users include civil servants and politicians; within the commercial arena, small businesses or drug companies might be users. We have considered only those activities which could reasonably be expected to affect health outcomes, health-system outcomes, or policy directions. Therefore, activities that build capacity to commercialize research products or processes were not included. Although there is clearly a very wide range of educational programs that can ultimately influence how research is used within the system, we did not explicitly consider formal educational programs that help prepare the wide range of professionals working in the health sector.

Other entities excluded are those whose primary focus is increasing the capacity of researchers to do research, even though some of these programs may include efforts to enhance researchers’ RT skills as well. The public can also be thought of as an important user group when it comes to research knowledge. Health charities are well known for their role in making scientific knowledge available in appropriate ways for consumers. However, capacity-building entities that focus on enhancing public capacity to access and use research knowledge were not considered in this scan.

The analysis in this report is limited to formal activities (more in Section 5.3, “Capacity-building programs and activities”) sponsored by organizations that are attempting to influence RT activity beyond their own borders. Specifics are not given about formal activities that occur within organizations (such as health authorities) because we can make no claim that these entities are typical. We do not have the full picture, having interviewed representatives of only a few organizations. We did, however, attempt to identify all those capacity-building entities that have as part of their mandate the intention to build RT capacity in the community at large.

Moreover, although we spoke to individuals from a range of organizations, we cannot claim to have complete knowledge of those organizations. Some of them are very large. Rarely can large, complex organizations be described or considered as unitary entities. This observation is perhaps most relevant to large health regions and to government departments, where it is difficult to claim complete knowledge by talking to one or two people. Also, information about certain organizations identified herein may not be accurate due to developments that occurred after the scan was completed in May 2006.
5.0 Results

Findings are presented with relation to the two purposes of the scan: (a) to assess current support for research transfer in Western Canada; and (b) to inform direction-setting and coordination of programs and projects across the region. Support for research transfer is discussed in Section 5.3 on capacity-building programs, Section 5.4 on RT research, and Section 5.5 on exemplars of RT implementation. Section 5.6 provides expert opinion and recommendations to inform future directions.

The next two sections address two related themes that seemed to warrant specific attention: terminology used in speaking about research use, and the perceived importance of research transfer to informants.

5.1 Terminology

When respondents were asked how they talk about using research to improve health or health-system outcomes, the preferred phrase, and the one most commonly cited, was research use. Other terms mentioned include:

- application of research
- best practices
- commercialization
- decision support
- evidence-based
- evidence-informed
- implementation
- knowledge exchange
- knowledge management
- knowledge mobilization
- knowledge transfer
- knowledge translation
- knowledge utilization
- uptake
- using research to create change
- research transfer

Almost all respondents were familiar with several of these terms, and used them. Their choice depended on the audience. Although some terms were preferred, it was acknowledged that all were legitimate, depending on the target. Those chosen were selected because informants felt that they were the most appropriate for the particular context. For example, in dealings with researchers, knowledge translation was often used; in dealings with decision-makers or policy-makers (that is, individuals at least one step removed from direct interaction with a person receiving services) application and implementation were often employed; and in dealings with front-line staff research use was often the phrase of choice.

Many people pointed out that CIHR [2005] has had a major influence in this area, with its definition and use of the term knowledge translation (KT). Just as many people noted that, while it has served to focus attention on this area, the term is no longer helpful, practically speaking. It is, however, still used by many of the people interviewed and by their affiliated organizations (as evidenced on websites). As noted above, knowledge translation is an especially popular term when researchers are being targeted.

Another common opinion was that, whatever term is used, it should ideally acknowledge that this is a two-way, interactive, iterative process. For this reason, many preferred exchange to transfer or translation. Several people noted that evidence and knowledge have many shapes and forms; academic research is only one factor that influences decision-making. Politics, public interest, the balancing of stakeholder views, financial considerations, and a variety of other issues all factor into how decisions are made. Conceptualizing research or knowledge as only that which is rigorously peer-reviewed makes for a very narrow definition that potentially excludes other valuable sources. Terms used need to reflect this. In some instances, perhaps there is a need to qualify exactly what type of evidence is being referred to—research evidence, experiential evidence, or internal knowledge of one’s own system.

The multiplicity of terms complicates working in this field. This became apparent as data on RT researchers were retrieved from funding-body databases. Numerous search terms were required for thorough searches. Respondents expressed varying opinions about the need for common terms and, where such a need was perceived, what degree of commonality was desirable. One person stated, “If we don’t have some kind of shared understanding of terms, and precision of use of those terms, we won’t be able to have any generalizable insights. Working toward clarity of language is important.” Some respondents expressed opposing views.
On balance, the message conveyed was that what is needed is not the specific term, but rather the shared understanding. People do appear to be working toward this shared understanding. Realistically, developing a single generally accepted term would be difficult.

5.2 Importance of research use to stakeholders

Interviewees were asked to rate, on a scale of 1 to 10 (with 1 being not important at all, and 10 being extremely important), the importance to their organizations of certain topics and activities around the subject of research use. Further, they were also asked to explain their ratings.

Nearly all respondents struggled in selecting a number. Several opted out entirely, choosing instead to explain importance qualitatively. Many stated that in large, diverse, complex organizations, the importance of research use depends on one’s department, job responsibilities, and a variety of other factors.

Ratings varied between 2 and 10, typically being in the middle and upper range. Funding agencies, research institutes, researchers, and one government department reported the highest scores. The following are some examples of reasons provided to support these ratings:

- New appointments to the organization include a full-time communication person, as well as a director and staff with RT responsibilities.
- The organization is making changes to recruiting processes and screening for certain capabilities (writing research summaries and interacting with policy-makers).
- Thinking about research use is enabled by new technology and information systems.
- A regional health/university liaison position has been created within the organization.
- Organizations are supporting departments or units for research and evaluation.

A government interviewee stated that, because of geographic isolation, his department had less capacity to create research and was reliant on results from elsewhere.

Only two scores below 5 were noted. One respondent stated, “We simply don’t have the time to stay on top of what’s new, what others have written. We primarily rely on what has been done in other jurisdictions.” The second low score was predicted to increase, as research is not currently part of that organization’s focus, but it is expected to become, increasingly, an area of strategic importance.

Respondents observed that the importance rating changes over time. In many cases individuals had joined their organizations during periods of change or restructuring, when the importance of research use was much lower on the scale. As change stabilized, organizations were able to focus more strategically on this area. One person likened this to Maslow’s hierarchy of needs: once the basic needs are met and an organization is functioning at a modest level, more focus can be directed toward less basic or less operational activities. This was also noted to be true for new organizations. For example, when CIHR was first established, it focused on building research capacity. Over the years, however, building the capacity for using research has come to receive more attention.

People generally viewed the importance of research use to be higher than the resources dedicated to this function would suggest. One respondent noted that “in terms of resources, it is a 1; in terms of the importance we attach to it, it is much more than a 1. I would put it at a 7 or an 8.”

Another rated the importance to their organization as a 5 on the scale, but stated that resources committed to research use within that organization were “vanishingly small”. As an additional caveat, one person noted that “importance” does not equal “ability to deliver”. In an organization, research transfer may have a high profile, but the organization’s capacity to address it – both financially and otherwise – may be much lower.
It is worth noting that, among the senior decision-makers in the health system who were interviewed for this scan, the level of awareness of research transfer and the level of interest in discussing it were notably higher than they were when AHFMR [2001] conducted a similar exercise in 1999–2000. In the earlier scan (conducted in Alberta only) it was sometimes difficult even to identify the appropriate person within a health region for initial contact about research use. Not only was awareness much higher in 2006, but energy and enthusiasm were often coupled with sophisticated knowledge about the topic.

5.3 Capacity-building programs and activities

As noted previously, capacity is defined by CHSRF [n.d.] as “the set of skills, structures, and processes, as well as the organizational culture, that allows, encourages, and rewards knowledge exchange”. When asked to identify capacity-building programs and activities, interviewees supported this definition in their responses.

Well over 100 capacity-building programs and activities were initially identified. In an effort to reduce the list to a manageable size, for purposes of thorough description, initial results were categorized and certain categories focused upon. As described in Section 4 (“Limitations”), some types of entities were excluded; for example, programs that promoted the commercialization of health technology were excluded, as were programs and processes that focused on public education.

The entities remaining after the exclusion process were categorized as (a) “informal”, referring usually to less concrete types of entities and indicating relatively small changes in existing routines or processes; or (b) “formal”, usually meaning that there were specific boundaries to the activity, as well as tangible resources (see Table 2). *Informal* entities include activities that build RT capacity, although they are not specifically funded as research transfer. They are either part of an organization’s ongoing operations or part of its philosophical orientation. The *formal* category includes funded programs and activities. Some explicitly address research transfer or are viewed through the RT lens; with others, the connection is less direct (for example, decision-support or quality-improvement teams). All, however, have specific budget implications. It should be noted that only a small number of activities occurring in health authorities or university-based programs were included, as interviews were not conducted across the board. In the end, 89 entities were described as “formal” for purposes of analysis; of these, 71 targeted externally and were in theory open to participation by any interested person (and not just employees of a particular organization).

<table>
<thead>
<tr>
<th>Focus</th>
<th>Formal</th>
<th>Informal</th>
</tr>
</thead>
<tbody>
<tr>
<td>External: enhance capacity in other organizations</td>
<td>CIHR’s KT Fellowship Awards</td>
<td>Granting councils are increasingly expecting researchers to partner with decision-makers.</td>
</tr>
<tr>
<td></td>
<td>RTNA</td>
<td>Health organizations often expect evidence of best practices in reports done by consultants.</td>
</tr>
<tr>
<td></td>
<td>SEARCH Classic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(n = 71)</td>
<td></td>
</tr>
<tr>
<td>Internal: enhance capacity in own staff and/or organization</td>
<td>Vancouver Coastal Health: Innovation Program</td>
<td>Nurses in each area are being hired with research training and experience.</td>
</tr>
<tr>
<td></td>
<td>David Thompson Health Region: Research and Evaluation Department</td>
<td>Continuing professional development now includes KT as a topic.</td>
</tr>
<tr>
<td></td>
<td>(n = 18)</td>
<td></td>
</tr>
</tbody>
</table>
In addition to the formal—informal differentiation, capacity-building entities were also differentiated on the basis of program target—that is, the intended participants. Those that represented opportunities for individuals (or possibly organizations) regardless of where they were employed or located were described as having externally focused targets; and those that were of relevance only to employees in a particular organization were described as having internally focused targets.

Formal entities with an external focus were the primary focus of this scan; there were 71 of these. However, for a clear understanding of the process of research use in organizations, many more elements, including informal activities, must also come into play. The following section speaks briefly to these.

### 5.3.1 Informal capacity-building activities

As only a few interviewees from user organizations were included, it is impossible for this scan to provide a full picture of informal capacity-building activities (or, indeed, of formal activities) within organizations. It is clear, however, that there is a very wide range of activities helping to enhance capacity. The following elements, specifically related to informal activities, were among the most commonly mentioned:

1. **A capacity-building philosophy and/or a research-use approach within organizations.** This would be signalled by more user-friendly print and Web documents (if one is in a research setting); tools and products that provide a basis for lasting interaction (such as administrative data sets for shared use); and generalized investment in data development and information systems that build RT capacity. Adopting a view of research transfer as a cross-cutting theme relevant to everything the organization does is key – as has been reported by both AHFMR [2001] and the Michael Smith Foundation for Health Research [2006]. Taking this view, as opposed to seeing research transfer as an activity in and of itself, helps integrate it into a wide range of activities.

2. **Linkages and relationships.** This theme is about creating and nurturing relationships between individuals who work in different parts of what CIHR [2005] calls the “knowledge cycle”, which it depicts as involving those who (a) do research, (b) set priorities for knowledge, (c) synthesize knowledge, (d) distribute and use knowledge, and (e) evaluate uptake of knowledge. The predominant thread involves researchers and decision-makers working together to do research (mostly of an applied nature). Various types of involvement were described: researchers with RT expertise working as co-investigators on implementation projects; decision-makers helping to shape research questions; or practitioners participating in the research process (ideally, from the early stages).

3. **Changing expectations of funding agencies.** Granting agencies reported their expectation that applicants address research transfer in their proposals. Several grant programs now expect decision-maker partners on projects; these are further described in Section 5.4 (“RT research”) of this report.

4. **Refinements in human-resource practices and development.** Several comments reflected an increasing incorporation of elements designed to enhance research use by individuals scattered throughout the system. Continuing professional development is not always about content now; rather, it acknowledges that care providers have different roles (as collaborator, for example, or communicator or advocate) that affect the capacity of the health system to use research knowledge. Some informants recognized the importance of individuals’ obtaining advanced degrees on a part-time basis, as well as formal expectations that executives in the system will be actively involved in research activities. For example, one informant spoke of the expectation that all executives publish in peer-reviewed journals. Although the actual rate of publication continues to be quite low, a continuing focus on that dimension contributes to a more research-savvy culture. Hiring individuals “with the right skill set” or “with Ph.D.s” or “with experience in research” was reported by several.
5. Organizational structure and processes. It is evident that many service-delivery organizations have made explicit changes in their organizational structures and processes to make them better able to engage in the dialogue (and increased opportunities and/or expectations) around research and research use. The introduction of dedicated departments (research and evaluation departments, for instance) was reported by nearly all user organizations interviewed; and several now have well-integrated policy frameworks in place, creating expectations that research knowledge be considered in their daily operations. The organizing of a “Research Day” and the encouragement of programs such as journal clubs were reported.

5.3.2 Formal capacity-building programs

While acknowledging the critical contribution of the informal activities in enhancing capacity for research transfer and use, the following analysis refers only to those entities described as “formal”. There are two major types of formal entities: those that enable activity outside, or external to, the sponsoring organization; and those that focus internally.

With reference to these formal entities, programs were noted to be either doing activities in various dimensions of the Health Research in Practice (HRIP) framework (see Section 3.2), or enabling them. For example, a research and evaluation unit in a health authority would actually be generating research, while a funding agency that provided funds to help establish the unit would be enabling that activity. All programs of both types were placed in a matrix that cross-referenced the program according to its activities (as per the HRIP framework) and its targets (the person or group for whom capacity is being built). Table 3 shows how the various entities identified by this scan are distributed across the framework. Of a total of 89 formal entities, 71 were identified as targeting externally to their own organization; 18 targeted inside their own organization. These 18 represent only a small number of those that no doubt exist; we made no attempt to be all-inclusive in this category.

A word of caution is in order. Because of the uncertainties inherent in categorizing entities, this distribution should be used only to provide a general picture of activities. An example may help: In Motion is a Saskatoon research project funded by CIHR. The program takes a very participatory approach to working with the community, supporting city residents in becoming more physically active. The project enhances the ability of community members and groups to produce and use research results. Hence, it is about producing knowledge that may inform research transfer, about linking with community members, and about implementing a program using research knowledge related to physical activity.

The allocation of entities within this table gave rise to the following general observations:

1. Generally speaking, we identified more activity in the knowledge movement and linkage and exchange columns than elsewhere.

2. Generating knowledge about research transfer is more or less a stand-alone activity. Research-generating entities were often not listed anywhere else in the table.

3. Activities tended to cluster in the research synthesis, knowledge movement, and linkage and exchange columns; that is, if an entity appeared in one of those columns, often it appeared in one or both of the others. For example, the Health Technology Implementation Unit (Calgary Health Region and University of Calgary), the Knowledge Exchange Network (Canadian Cancer Society in Manitoba), and the Research Transfer Network of Alberta were all considered to be involved in building capacity for these three areas.
Table 3. Distribution of formal capacity-building entities identified by this scan

<table>
<thead>
<tr>
<th>Target</th>
<th>Health Research in Practice framework</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Research generation</td>
</tr>
<tr>
<td>National support</td>
<td></td>
</tr>
<tr>
<td>Individuals</td>
<td>5</td>
</tr>
<tr>
<td>Organizations</td>
<td>1</td>
</tr>
<tr>
<td>Both</td>
<td>2</td>
</tr>
<tr>
<td>Provincial support</td>
<td></td>
</tr>
<tr>
<td>Individuals</td>
<td>8</td>
</tr>
<tr>
<td>Organizations</td>
<td>7</td>
</tr>
<tr>
<td>Both</td>
<td>6</td>
</tr>
<tr>
<td>User organizations</td>
<td></td>
</tr>
<tr>
<td>Individuals</td>
<td>3</td>
</tr>
<tr>
<td>Organizations</td>
<td>4</td>
</tr>
</tbody>
</table>

a A program deemed to be “national” is funded by a national agency (e.g., CIHR, CHSRF, Cochrane Collaboration, SSHRC) that makes resources from its programs available to any qualified applicant in Canada.

b Entities labelled “provincial” are in most cases available in one province only.

c No cases were identified.

d This reflects information from a small number of user sites, and does not represent the whole population of user sites in Western Canada (unlike the nationally and provincially sponsored entities, where we did attempt to be as inclusive as possible).
4. If an entity was involved in *implementation* (actually using research knowledge in its operations), it was almost always involved in at least some of the activities earlier in the cycle (such as *linkage and exchange, knowledge movement, research synthesis*). For example, of the entities identified as provincially supported, the following were deemed to be enabling the *implementation* of research knowledge, and all of them were involved in one or more of *research synthesis, knowledge movement, or linkage and exchange*, often all three. (For a complete list of the entities identified, see Appendix 3.)

- SEARCH Classic
- SEARCH Custom
- Research Transfer Network of Alberta
- Toward Optimized Practice (Alberta)
- Alberta Drug Utilization Program
- In Motion (Saskatchewan)
- Health Services and Policy Research Support Network (British Columbia)
- The Need to Know Team (Manitoba)
- Tri-Territorial Arctic Health Research Network (Yukon, Northwest Territories, Nunavut)
- Health Quality Council quality improvement initiatives (Saskatchewan)

5. Not many explicit mentions were made of efforts to evaluate the uptake of research knowledge. This function may be inherent in projects supported by some of the programs; for example, within SEARCH Classic and the Need to Know program, evaluation of the program is part and parcel of the approach. There have been many projects evaluating various aspects of the SEARCH Classic program over the years. With the health quality improvement projects in Saskatchewan, using knowledge to improve and track progress is inherent in the process, so evaluation is implicit.

6. When discussing evaluation, it is also helpful to differentiate between the type of evaluation which is part of an activity or project supported by a particular program, and evaluation of the program as a whole and its ability to enhance the use of research knowledge. For example, the Research Transfer Network of Alberta (RTNA) is currently undergoing an evaluation of the organization’s overall impact; in the past, they have evaluated specific components of their activities. In the Health Quality Council, evaluation is implicit in each quality-improvement project; for the Council to assess its overall impact on research use in Saskatchewan would be another level of evaluation. CHSRF is supporting a formal evaluation of its knowledge-broker program that will be available in about two years.

7. When entities are observed within organizations (as in the bottom row of Table 3), generally they have multiple functions across the spectrum of the HRIP framework.

The entities represented under “National” and “Provincial” in Table 3 are listed in Appendix 3, with an indication of the specific type of capacity-building opportunities they enable.

Some of the capacity-building entities identified by the scan, however, warrant specific mention here because of the widespread knowledge of their activities in Western Canada and/or the centrality of their activities to this scan. The activities of the federal granting organizations CIHR, CHSRF, and SSHRC are, of course, relevant across Canada; in the West the following bodies are particularly notable:

- **SEARCH Canada** is widely recognized across Canada, according to those interviewed, as an innovative leader in capacity-building. Its recent emergence as a member-owned non-profit organization with a mandate beyond Alberta seems well supported by opinions offered in this scan.

- **Saskatchewan Health Quality Council.** Although it is relatively new in its current form, its aim of working with health regions throughout the province toward the specific goal of improving quality through knowledge is highly regarded.
• **Manitoba Centre for Health Policy.** In particular, the Need to Know program arising from this centre is well known and highly regarded.

• **Health Services and Policy Research Support Network (British Columbia)** is a component of MSFHR. It has a mandate to identify and support high-priority health services and policy research and KT initiatives; to enhance health-research capacity in the community of research users; and to support better alignment between researchers and users.

• **Tri-Territorial Applied Health Research Network.** This is still an idea in evolution, but it is indicative of a focused desire to use health research to improve health outcomes in an environment which is very challenging for service delivery.

• **Research Transfer Network of Alberta.** Supported by AHFMR, the RTNA provides learning and networking opportunities for middle managers, policy-makers and front-line decision-makers, and researchers.

### 5.3.3 Innovations

Notable innovations were identified, and some that were noted are shown in Table 4. The overwhelming impression is that there are many specific activities and innovations that are worth knowing about; the level of detail possible in this report does not do them justice. Those in the table should be viewed as examples, not the complete picture.

Just as this scan was being completed, the Canadian Institutes of Health Research [2005] published two casebooks of examples of knowledge translation (the CIHR term) in Canada. These casebooks provide many descriptions of ongoing activity and innovation.

### 5.3.4 Interprovincial activities and future plans

There was very little specific interprovincial activity noted in the scan, other than excellent collegial relationships between provincial research foundations. The exception is SEARCH Canada. Interprovincial connections began when SEARCH was still sponsored and hosted by AHFMR, and they continue in invigorated form. The Saskatchewan Health Research Foundation (SHRF) has supported participant and faculty involvement in the SEARCH program for several years; and recently SEARCH Canada and the Michael Smith Foundation for Health Research (MSFHR) have been collaborating in the development of programs within MSFHR’s Health Services and Policy Research Support Network in British Columbia. Prior to starting the Need to Know project in Manitoba, personnel attended SEARCH events.

It is not easy to comprehensively describe RT-related planning in Western Canada, as there is a huge amount of activity and planning going on. Suffice it to say that a great deal of change is anticipated within regions, within provinces, and within organizations. The SHRF is actively developing a KT strategy [Saskatchewan Health, 2004]. The Manitoba Health Research Council (MHRC) is about to embark on provincial planning for research generally [MHRC, 2005]. The programs of the MSFHR are still evolving; and, although AHFMR has been an innovator in the RT field for many years, clearly it is still charting new paths. CIHR is actively re-evaluating its approach to knowledge translation and has recruited a new leader for that portfolio; and SSHRC [2005] is evolving into a “knowledge council”. CHSRF has announced plans to resurrect the Canadian Research Transfer Network, which has been inactive for several years. The only thing that is certain is change.
Table 4. Innovative capacity-building features

<table>
<thead>
<tr>
<th>Organization</th>
<th>Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saskatchewan Institute of Agriculture, Rural and Environmental Health</td>
<td>... provides information to members of its Agricultural Health and Safety Network. The yearly membership fee is based on the mailing list, provided by the rural municipality, of families actively farming. Each farm family or enterprise on the list is assessed at the rate of $2.90, to a maximum of $1,000.00 per rural municipality. The rural municipal councils are invoiced annually. Membership fees are used as matching funds for grant applications. Staff of the Network apply to outside agencies for additional funds to support the development of materials for, and the provision of services to, Network members. Community-based services include Farm Response, the Respiratory Health Maintenance Program for Farmers, and the Hearing Conservation Program for Farmers.</td>
</tr>
<tr>
<td>A health region</td>
<td>... includes in its annual performance expectations that its vice-presidents publish in peer-reviewed outlets.</td>
</tr>
<tr>
<td>An individual researcher with core expertise in RT</td>
<td>... agreed to serve as a co-investigator for implementation research projects; built RT capacity in the research community in this way.</td>
</tr>
<tr>
<td>Manitoba Centre for Health Policy</td>
<td>... takes time at the front of each project to plan and develop tools that will provide a basis for lasting interaction and build capacity; they don’t focus just on the core project.</td>
</tr>
<tr>
<td>The Cochrane Library</td>
<td>... is licensed by the government and freely accessible to all users in the Northwest Territories, Saskatchewan, and Yukon.</td>
</tr>
<tr>
<td>Centre for Health Evidence</td>
<td>... offers as its core product an integrated Internet-based network, delivered via VIVIDESK software; it creates secure web-based environments for day-to-day support of research use (e.g., Capital Care uses a CHE desktop to support committee work; SEARCH Canada and CHSRF’s EXTRA program are also supported by CHE desktops).</td>
</tr>
</tbody>
</table>
Table 4. Innovative capacity-building features (continued)

<table>
<thead>
<tr>
<th>Organization</th>
<th>Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Northern British Columbia and Northern Health Region (Prince George)</td>
<td>… take a position that spans academic-practice boundaries in order to understand academic research questions, identify leading clinicians, and identify opportunities to create teams.</td>
</tr>
<tr>
<td>Saskatchewan Health Information Resources Partnership</td>
<td>… created a virtual health library for Saskatchewan’s health practitioners.</td>
</tr>
<tr>
<td>Canadian Health Services Research Foundation</td>
<td>… offers an organizational self-assessment tool which has been used very effectively to create interest within organizations; it provides a vehicle for entry into the RT discussions within organizations.</td>
</tr>
<tr>
<td>Calgary Health Region</td>
<td>… creates system-level mechanisms to build and coordinate capacity for knowledge use throughout the region. These will include strategies to improve sharing of information from existing internal research and knowledge-exchange initiatives; the building of rapid-response decision-support teams; the development of hybrid positions that bridge the knowledge gap between university and health region.</td>
</tr>
<tr>
<td>Michael Smith Foundation for Health Research</td>
<td>… made a conscious decision not to create an RT department, but to incorporate RT into all activities instead.</td>
</tr>
<tr>
<td>Centre for Knowledge Transfer</td>
<td>… offered an interdisciplinary course in knowledge utilization, involving a combination of WebCT and weekly in-person meetings suitable for teleconferencing and video conferencing. The course was taken by students in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, and Atlantic Canada.</td>
</tr>
<tr>
<td>SEARCH Canada</td>
<td>… was praised by many for its standard of excellence, one informant describing it as “the best capacity-building vehicle in Canada”, another as “the Cadillac program”.</td>
</tr>
</tbody>
</table>
In summary, there is a wide range of activities in Western Canada that are either actively attempting to transfer research or helping to build capacity to do that. The focused activities and interest of the organizations that fund health research are not surprising. What is perhaps a little unexpected is the level of activity (albeit more potential than actual at present) that is apparently emerging within health regions in the West. We did not speak to all the regions; but conversations with executives from several—and reports about others—made it clear that there is a very high level of actual and planned activity within health regions. This scan was not structured to assess that activity in any comprehensive way; but, as planning for capacity-building proceeds, it is certainly worth noting. The Calgary Health Region has undertaken a review of RT activities within its own boundaries, and this provides a systematic description of activities in at least one region [Scott & Gall, 2006].

5.4 RT research

The databases and websites of agencies which fund research informed the results in this second part of the scan about people or groups conducting research on research transfer per se. The following agencies were searched:

- Canadian Institutes of Health Research (CIHR)
- Canadian Health Services Research Foundation (CHSRF)
- Alberta Heritage Foundation for Medical Research (AHFMR)
- Michael Smith Foundation for Health Research (MSFHR)
- Social Sciences and Humanities Research Council of Canada (SSHRC)

The Saskatchewan Health Research Foundation and the Manitoba Health Research Council were not searched, because individuals from both agencies indicated that they had not funded research in this area. In addition to the names gleaned from agency searches, one research project identified through a word-of-mouth lead during an interview was included for analysis.

Results retrieved from the searches were screened for relevance. The primary screening criterion involved ensuring—as far as possible—that the research was actually contributing in some way to knowledge about research transfer (as opposed to disseminating the results of health-related research).

Table 5 summarizes the results of the search. Details of each research project—including names of the principal investigator and co-investigators, names of relevant institutions, project titles, and dollar amounts (as available)—are available upon request.

The CIHR Partnership for Health System Improvement program, the CHSRF Open Grants Competition, the Research Operating Grants Program of the MSFHR Health Services and Policy Research Support Network, and the AHFMR Health Research Fund (HRF) were included in the search because these competitions all require partnerships with decision-makers and are supported through matching funding. These are typically applied-research projects; however, some of them also have an RT focus. AHFMR’s HRF projects were the only ones further screened to identify programs with such a focus. This screening was not performed for the other organizations because of the volume of information retrieved, and because of complications resulting from incompatible or incomplete databases.

Several other factors complicated the process of search and analysis. First, reflecting the lack of agreed terminology in this field, a large number of keywords had to be entered as search terms. Second, studies that only briefly referred to knowledge translation in their abstracts were picked up, even though research transfer proved not to be a key component. Third, the fields retrieved from the various sources were not always comparable. (For example, co-investigators and dollar amounts were not always provided.) And finally, one particular program was transferred from one agency to another during the range of years being searched, and data available on award recipients were not easily comparable.
### Table 5. RT research: Summary of search results

<table>
<thead>
<tr>
<th>Source</th>
<th>Search strategy</th>
<th>Years</th>
<th>Number of projects</th>
<th>Retrieved</th>
<th>Analyzed</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIHR funding database</td>
<td>KT-related keywords&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1998–2005/06</td>
<td>186</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>CIHR funding database</td>
<td>Partnership for Health System Improvement program</td>
<td>2005/06&lt;sup&gt;b&lt;/sup&gt;</td>
<td>21</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>CHSRF website</td>
<td>Open Grants Competition</td>
<td>1999–2004</td>
<td>88</td>
<td>88</td>
<td></td>
</tr>
<tr>
<td>MSFHR website</td>
<td>Health Services and Policy Research Support Network: Research Operating Grants Program</td>
<td>2005&lt;sup&gt;c&lt;/sup&gt;</td>
<td>7</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>AHFMR website</td>
<td>Health Research Fund</td>
<td>1998–2005</td>
<td>147</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>SSHRC funding database</td>
<td>Areas of research: health, mental health, management, not specified</td>
<td>1998–2004/05</td>
<td>32</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Word of mouth</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>The keywords were as follows: dissemination research, evidence-based decision-making, evidence based decision-making, evidence-based decision making, evidence based decision making, evidence-based practice, evidence based practice, innovation diffusion, knowledge brokering, knowledge transfer, knowledge translation, research dissemination, research transfer, research utilization, and uptake of knowledge.

<sup>b</sup>Prior to 2005/06 this program was administered by the CHSRF as the Open Grants Competition.

<sup>c</sup>Funding to implement approved initiatives to build capacity in health authorities began in January 2005.
Although we recognize that total dollars awarded to an investigator is not the only indicator of quality, it is one that is easy to capture and use for the purpose of comparison. Therefore, this measure was used to extract from the CIHR database search results the 15 researchers in Western Canada with the highest dollar awards for RT research. These results are presented in Table 6. There are five researchers who have earned (as principal investigator) over one million dollars since 1998. Carole Estabrooks has had nine projects funded by CIHR, three times more than her nearest competitor.

In addition to those found by means of the keyword search of the CIHR database, six researchers active in research transfer in Western Canada were identified through the AHFMR search and the informant interviews:

Ted Braun, Anna Ehrenberg, Carole Estabrooks, Brad Hagen, and Marcello Tonelli (all from Alberta); and Craig Mitton (from Alberta and British Columbia). Also, the authors are aware of at least two large RT-relevant grants in Western Canada that were not retrieved using the search strategies: one to the National Centre for Knowledge Transfer (the administrative centre is at University of Alberta; principal investigators are Carole Estabrooks and Karen Golden-Biddle), and the other to the Western Regional Training Centre (University of British Columbia and University of Manitoba; Sam Sheps, principal investigator).

The main finding from this list and the above tables is that there is a very small number of senior RT researchers in Western Canada. Informant interviews substantiated this observation, several people noting that few researchers in the West have a substantial body of work in this area.

Beyond CIHR, provincial funding is playing a role in advancing RT research generation: of the six individuals noted above as working in this area, only two were also identified by the CIHR searches (Carole Estabrooks was identified as a principal investigator by the CIHR searches, and Craig Mitton as a co-investigator).

Titles and summaries of research projects (where available) were also analyzed. Projects tended to fall into one of three categories. The first category includes core research on research transfer – the so-called basic science of RT. Carole Estabrooks’ project “Developing a valid and reliable measure for research utilization” is an example of this type. The second category includes those projects that focus on a specific topic area other than research transfer, but which afford an opportunity to add knowledge to the RT field. Karen Chad’s “Saskatoon In Motion: Building community capacity through physical activity and health promotion research” is such a project. The third category includes primarily implementation research whereby, through secondary processes, there is opportunity to gain knowledge about research transfer. Julio Montaner, Michael O’Shaughnessy, and Martin Schechter’s Canadian HIV Trials Network at St. Paul’s Hospital in Vancouver is an example.

Most projects in the third category were excluded from analysis. Of those in the remaining two categories, the core-research projects constituted a small minority, whereas the transfer-opportunity projects constituted a large majority—although the extent to which researchers or research teams focused on the RT angle, or promoted it, varied.

Finally, it is also worth noting that many interviewees identified people in peripheral areas, such as communications or information technology, who do not focus on research transfer per se but whose research could (and should) influence this world.
### Table 6. Top 15 CIHR-supported RT researchers in Western Canada

<table>
<thead>
<tr>
<th>Principal investigator(s)</th>
<th>Region</th>
<th>RT-related CIHR grants</th>
<th>Affiliated individuals*</th>
<th>Total awarded for all PI grants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elizabeth BANISTER</td>
<td>BC</td>
<td>1</td>
<td>Bonnie LEADBEATER, E. Anne MARSHALL, Ted RIECKEN</td>
<td>206,809</td>
</tr>
<tr>
<td>Allan BEST</td>
<td>BC</td>
<td>1</td>
<td>Ellen BALKA, John BRUNT, Neena CHAPPELL, Charles FRANKISH, Stefan GRZYBOWSKI, Francis LAU, Nadine LOEWEN, Patricia Anne MACKENZIE, Margaret PENNING, Gary POOLE, Robert REID, Richard STANWICK, Martin TAYLOR, Sally THORNE, Holly TUOKKO, Andrew WISTER, Robert WOLLARD</td>
<td>2,503,545</td>
</tr>
<tr>
<td>Karen CHAD</td>
<td>SK</td>
<td>1</td>
<td>Tom ARCHIBALD, Nigel ASHWORTH, Paul GAUTHIER, Elizabeth HARRISON, Russ KISBY, Ronald LABONTE, Nazeem MUHAJARINE, Cordell NEUDORF, Bruce REEDER, Kevin SPINK</td>
<td>1,777,195</td>
</tr>
<tr>
<td>Lesley DEGNER</td>
<td>MB</td>
<td>1</td>
<td>Carole ESTABROOKS, Heather LASCHINGER</td>
<td>116,667</td>
</tr>
<tr>
<td>James DOSMAN</td>
<td>SK</td>
<td>1</td>
<td>Lorne BABIUK, Ernest BARBER, Robert BRISON, Yvon CORMIER, John FEDDES, Graham GAGNON, Susan KENNEDY, William PICKETT</td>
<td>524,189</td>
</tr>
</tbody>
</table>
Table 6. Top 15 CIHR-supported RT researchers in Western Canada (continued)

<table>
<thead>
<tr>
<th>Principal investigator(s)</th>
<th>Region</th>
<th>RT-related CIHR grants</th>
<th>Affiliated individuals⁴</th>
<th>Total awarded for all PI grants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christopher FLETCHER</td>
<td>AB</td>
<td>1</td>
<td>Karen EDWARDS, Leslie JOHNSON</td>
<td>181,250</td>
</tr>
<tr>
<td>Nancy GIBSON</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deborah SIMMONS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kendall HO</td>
<td>BC</td>
<td>2</td>
<td>Arun CHOCKALINGAM, Keith DAWSON, Michal FEDELES, Verlé HARROP, Sandra JARVIS-SELINGER, Malcolm MACLURE, Anne NGUYEN, Morgan PRICE, Mamoru WATANABE</td>
<td>216,667</td>
</tr>
<tr>
<td>Sandra JARVIS-SELINGER</td>
<td>BC</td>
<td>2</td>
<td>Arun CHOCKALINGAM, Keith DAWSON, Michal FEDELES, Verlé HARROP, Kendall HO, Malcolm MACLURE, Anne NGUYEN, Morgan PRICE, Mamoru WATANABE</td>
<td>216,667</td>
</tr>
<tr>
<td>Terry KLASSEN</td>
<td>AB/ON⁵</td>
<td>3</td>
<td>Karen BLACK, Claire BOMBARDIER, Francine DUCHARMEE, Jeremy GRIMSHAW, Lisa HARTLING, David JOHNSON, John LAVIS, John MCDONALD, David MOHER, Martin OSMOND, Amy PLINT, Peter TUGWELL, James WRIGHT</td>
<td>2,164,199</td>
</tr>
</tbody>
</table>
### Table 6. Top 15 CIHR-supported RT researchers in Western Canada (continued)

<table>
<thead>
<tr>
<th>Principal investigator(s)</th>
<th>Region</th>
<th>RT-related CIHR grants</th>
<th>Affiliated individuals&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Total awarded for all PI grants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoo LEE</td>
<td>AB/BC</td>
<td>3</td>
<td>John ANSERMINO, Khalid AZIZ, G. Ross BAKER, Keith BARRINGTON, Rollin BRANT, Catherine CRONIN, Jill HOUBE, C. Peter KELLER, Anne KLASSEN, Joanne LANGLEY, David Shing Chung LEE, Robert LISTON, Ying MACNAB, Laura MAGEE, Claudio MARTIN, James MATTHEW, Alex Charles MICHALOS, Craig MITTON, Jochen MOEHR, Christine NEWMAN, Arne OHLSSON, Abraham PELIOWSKI, Robert PLATT, Selina POPE, Koravangattu SANKARAN, Reg SAUVE, Mary SESHIA, Nicola SHAW, Nalini SINGHAL, Erik SKARSGARD, Bonnie STEVENS, Anne SYNNES, Paul THIESSEN, Peter VON DAELDSZEN, Cyril WALKER, Elizabeth WHYNOT, Robin WHYTE</td>
<td>1,388,000</td>
</tr>
<tr>
<td>Patricia MARTENS</td>
<td>MB</td>
<td>2</td>
<td>Sarah BOWEN, Michael MOFFATT, Leslie ROOS</td>
<td>271,831</td>
</tr>
<tr>
<td>Kim Raine</td>
<td>AB</td>
<td>1</td>
<td>Ruth COLLINS-NAKAI, Ronald DYCK, W. Keith MCLAUGHLIN, Kathleen NESS, Ronald PLOTNIKOFF</td>
<td>425,000</td>
</tr>
<tr>
<td>Janet SMYLIE</td>
<td>SK/ON&lt;sup&gt;b&lt;/sup&gt;</td>
<td>3</td>
<td>Ian ANDERSON, Neil ANDERSON, Yvonne BOYER, Larry CHARTRAND, Suzanne CRENGLE, Valerie GIDEON, Gail GUTHRIE VALASKAKIS, Mary HAMPTON, Janet HATCHER ROBERTS, William HOGG, Bonnie JANZEN, Bonnie JEFFERY, Nili KAPLAN-MYRTH, Carmel MARTIN, Lewis MEHL-MADRONA, Bruce REEDER, Ian RING, Dawn SMITH, Caroline TAIT, Wilfreda THURSTON, Peter TUGWELL, Lewis WILLIAMS</td>
<td>308,625</td>
</tr>
<tr>
<td>Connie VARNHAGEN</td>
<td>AB</td>
<td>1</td>
<td>Gay BISANZ, Jeffrey BISANZ, Terry Paul KLASSEN, Bonnie SADLER TAKACH, Laurie SCHNIRER</td>
<td>274,500</td>
</tr>
</tbody>
</table>

<sup>a</sup> Joint primary investigators and co-investigators affiliated with the grants awarded to the principal investigator.

<sup>b</sup> Principal investigator was awarded grants that are affiliated with institutions in both Western Canada and Ontario.
5.5 Examples of RT implementation

It was not the intent of this document to record all the instances of research transfer underway in Western Canada. However, we did ask informants to identify those which came to mind as exemplary, and described below are four representative examples of research transfer; they were chosen to reflect a range of settings and situations within which research transfer can be observed. The results of the Calgary scan [Scott & Gall, 2006] referred to in Section 5.3.4 (“Interprovincial activities and future plans”) are available, and provide an important glimpse into a large, complex organization in much more detail than is possible in this report.

The four examples chosen reflect research transfer in (1) a long-term-care organization that is a semi-autonomous component of a large health region; (2) a research setting where research transfer was an explicit objective; (3) a research setting where clinical end points are the main focus but where research transfer is a stated goal; and (4) an “emerging” setting (that is, one which does not have a long history of substantive involvement in research transfer).

5.5.1 Capital Care, Edmonton

Capital Care is a long-term-care organization committed to using evidence to inform and apply best practices. Its in-house research unit helps to shorten the time taken to get research into practice. It conducts its own research, enters into partnerships with external programs, and sometimes engages external researchers. Currently, an evaluation of a new veterans’ centre is being undertaken. The centre was designed according to the best environmental research; the evaluation includes broader areas such as behaviour of residents pre- and post-occupation. Capital Care and its research unit have developed close ties with university bodies, including the Knowledge Utilization Studies in Practice (KUSP) program and the Faculty of Rehabilitation Medicine at the University of Alberta.

Capital Care has received a three-year CHSRF grant and AHFMR support as one of six knowledge-brokering demonstration sites, engaging decision-makers and researchers in an ongoing exchange. They are looking at electronic resident-assessment instruments (RAI), which will provide streamlined and standardized assessments of long-term residents, and an indication of the best practices to implement in their care. The discussions involved will help to identify future research initiatives. RAI 2.0 will be incorporated into the Capital Care Best Practice Desktop, a unique purpose-built online resource, information, and education environment, where it will support efforts to identify, develop, communicate, and implement evidence-based best practices. The Desktop was created in collaboration with the Centre for Health Evidence and SEARCH Canada. It is being made available to interested staff members (best-practices committee, care managers, pharmacists, rehabilitation specialists) throughout the organization, with the goal of future access for front-line staff as well. It provides access to databases such as the Health Knowledge Network (a compilation of databases dealing with health-related literature) and is a place to post quarterly reports. In a sense, it is helping to create a community of practice at Capital Care.

5.5.2 Need to Know Team, Manitoba

The 25-member NTK collaborative-research team, drawn from health regions across Manitoba, creates new knowledge relevant to rural and northern regional health authorities (RHAs); builds two-way capacity; and acts as a dissemination resource for the Manitoba Centre for Health Policy (MCHP), where Need to Know is based. It grew out of a Rural and Northern Healthcare Day, involving discussions with researchers and RHA personnel, and has been expanded with funding from CIHR. The research projects are selected by consensus, and use the MCHP’s large administrative database. Team members all have access to the same data. The team meets three times annually, sometimes in the various regions in order to get more people involved. Participation of community partners has provided new perspectives on knowledge-translation theory. Collaborative evaluation is a guiding component of the project.
5.0 Results

5.5.3 Population Health Division, Northwest Territories

The Population Health Division of the NWT government is responsible for health promotion, health protection, and disease registries. It uses research generated elsewhere if that research is applicable to its unique Northern needs, but does many of its own surveys. A typical strategy—used for its tobacco study and currently being used for its injury-prevention research—is to write a report on the problem, review the literature on best practices, and create an action plan that includes implementation, monitoring, and evaluation.

The Division has a strong focus on using evidence. One of the most important capacity-building programs in the Northwest Territories is the year-old Canadian Cochrane Initiative, whereby anyone in the Northwest Territories who has Internet access can use the Cochrane database.

The proposal, submitted by the Tri-Territorial Arctic Health Research Network (AHRN) to the International Polar Year, involves capacity-building as well as research; it has received strong support from senior levels in the Northwest Territories. Work has been proceeding to create a consortium node that ties in with Cochrane. The aim is to identify specific research questions, influence the research agenda, and facilitate research-in-progress with linkages elsewhere. Health and Social Services distributes EpiNorth, a newsletter about epidemiology in the Northwest Territories.

5.5.4 HIV Trials Network, Vancouver

This is a partnership of researchers, physicians, governments, the pharmaceutical industry, and people living with HIV. They are working together to develop and expedite clinical trials that will prevent, treat, and ultimately cure HIV-related disease. Although it is a well-funded research enterprise ($18 million), the partners state that one of their activities is knowledge translation; that is, ensuring rapid translation of research results into safe, effective, and efficient clinical treatments. So they are doing research transfer, but they are not necessarily researching research transfer. With reference to the various types of research projects in which it may be possible to gain knowledge about research transfer, this is an example of the type in which that may occur, but is not necessarily an expected outcome. Therefore, generalizable knowledge about research transfer may not result; on the other hand, it may, but this is not the primary result that funders and others are presumably looking for. The primary objective is to improve outcomes in HIV-related disease.
5.6 Informant expert opinion

Informants were asked what they felt to be the most important ingredients for success and the greatest challenges in any attempt to enhance the transfer and use of research. They were also asked for their recommendations to funding agencies in Western Canada. A summary of their responses follows.

5.6.1 Factors critical to success

Comments clustered in four areas: (1) knowledge gleaned from research; (2) the retrieval and synthesis of knowledge; (3) characteristics of the user setting; and (4) a group of influences that can be described as “working in the middle” or “working in the white space”. Key themes in each of these areas are summarized below.

1. Knowledge. The underlying themes here are quality, relevance, and presentation. The research itself needs to be of the highest quality, and presented in a quality way. Many informants commented that there is a continuing need for excellent research; that the research needed is not always available; and that what is available is not always relevant. However, knowledge that emanates from a process involving both decision-makers and researchers is viewed as relevant. With respect to presentation, many commented on the need for plain language—and other forms of delivery as appropriate, such as stories or images—but not language that talks down to users. Presentation needs to be tailored to situation and context.

2. Retrieval and synthesis of knowledge. Many interviewees commented on the need for “information that you can go out and get”. People need to know it’s there, and the availability of high-quality syntheses of bodies of knowledge is critical. In many cases, rapid response is essential—if the knowledge is not readily available, the decision will be made in its absence.

3. User setting. Many dimensions of the user setting were identified as being critical to research transfer. These included a supportive environment (culture), organizational structures and processes, and people (human resources). The need for a supportive culture was perhaps the aspect that garnered the most comment. Such a culture includes executive-level support (mentioned by almost everyone), a continuous-learning environment, the deep valuing of research and evidence (for example, expectations for peer-review publication), multi-level engagement, innovation, and active management of change.

Organizational structures and processes, in and of themselves, contribute to a supportive culture; however, they were singled out as enabling success factors, as they are quite tangible and (in theory, perhaps) more amenable to manipulation. Some of the structures and processes mentioned were appropriate access to knowledge; specific entities that support and enable research and evaluation activities; and tools that enable systematic approaches—for example, the Plan-Do-Study-Act (PDSA) cycle. Infrastructure, such as appropriate technology, was also mentioned; one example cited was the ability to embed knowledge into decision-making processes by means of technology.

Comments related to human resources were predominant. Appropriate skills were mentioned, although it is not clear whether everyone knows what these are. Human-resources personnel who target research transfer and use were mentioned by many; they were described as “utilization officers” or “knowledge brokers”. Central to these roles are such attributes as the ability to ask the right questions, the ability to access evidence, and the ability to package evidence. In the human-resources realm, many felt it is essential to have an “issue champion” in the organization. Many recognized the importance of individuals working together; for example, in interdisciplinary situations or in high-performance teams.
4. **Working in the white space.** Clearly, many activities and events that are related to successful research use occur outside both research-generating organizations (most often universities) and user organizations. In a general sense, this reflects the complexity of the context, including the number of stakeholders involved in the process; for example, the research community, government, and the public. There seem to be two underlying themes: (a) the importance of connecting (best done face-to-face); and (b) a recognition that codified research knowledge is only one element of knowledge. It is in this white space that knowledge is reshaped, interpreted, or contextualized—based on lessons learned from interactions, as well as on tacit knowledge (knowledge which is contributed by individuals involved, but which is not usually written down).

Various types of activities can take place in this white space. They can be initiated by various entities, such as user site, research site, or intermediary site. These activities include knowledge push, where people proactively provide information they deem to be useful; creation of spaces for meeting (virtual, as with the RTNA; or physical, as with the workshops and conferences enabled by various grants); and linkages between networks and groups. Connections might be made within practitioner-led soft networks; between active, more formal networks (such as the Quality Improvement networks in Saskatchewan); or between researchers and communities of practice or policy. The underlying sense one gets of this approach is that it creates the opportunity for exchange, rather than necessarily creating a goal-oriented interaction with set boundaries.

5.6.2 **Forces for and against effective research transfer**

In addition to what they had identified as factors critical for success, informants had many thoughts about what helped and what hindered the transfer of research. These are summarized in Tables 7 and 8 respectively. Table 7 indicates which thoughts were top-of-mind for many, and which were less frequently mentioned.
### Table 7. Factors that enable or support research transfer

<table>
<thead>
<tr>
<th>Factor</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mentioned by many</strong></td>
<td></td>
</tr>
<tr>
<td>Early engagement of decision-makers in research</td>
<td>Grants are needed that enable the early engagement of decision-makers. Early engagement impacts not only the research project in question, but others as well.</td>
</tr>
<tr>
<td>Evidence that research use works</td>
<td>More knowledge about what works in research transfer is needed, and more creative strategies (knowledge push does not work).</td>
</tr>
<tr>
<td></td>
<td>Show researchers and research users the benefits of what has been done.</td>
</tr>
<tr>
<td></td>
<td>Foster a shared understanding of “where we’re at now” in research use.</td>
</tr>
<tr>
<td></td>
<td>Demonstrate what works.</td>
</tr>
<tr>
<td>Government showing real leadership</td>
<td>[Generally, informants thought this did not happen; it is left in this table, however, as it was most often mentioned as something critical to success, rather than as a barrier per se.]</td>
</tr>
<tr>
<td><strong>Mentioned by several</strong></td>
<td></td>
</tr>
<tr>
<td>Issue-focused teams</td>
<td>Bring teams together to work on an issue, as opposed to research transfer in general.</td>
</tr>
<tr>
<td>Risk-takers with patience</td>
<td>Progress takes time; we need patience, and also a willingness to take risks and push boundaries.</td>
</tr>
<tr>
<td>Clear knowledge base about what research transfer involves</td>
<td>The knowledge base (i.e., knowledge, principles, concepts) needs developing. The effect of infrastructure and resource support on research transfer needs testing.</td>
</tr>
<tr>
<td>Trusting, respectful relationships</td>
<td>We need this kind of relationship between researchers and decision-makers. Give feedback throughout the research process; we can’t wait for ultimate results.</td>
</tr>
<tr>
<td>Capacity-building programs</td>
<td>SEARCH, for example, democratizes knowledge (i.e., makes knowledge more accessible to a broader range of people). Build capacity among users (e.g., analytical skills, understanding of methods).</td>
</tr>
</tbody>
</table>
### Table 7. Factors that enable or support research transfer (continued)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mentioned by some</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Timing</strong></td>
<td>Research transfer can be more effective if the topic aligns with &quot;hot topics&quot; from government or powerful interest groups.</td>
</tr>
<tr>
<td><strong>Administrative databases</strong></td>
<td>Enable rapid response to certain questions.</td>
</tr>
<tr>
<td><strong>Powerful intrinsic rewards</strong></td>
<td>Involvement in research and research use provides opportunity for such rewards as enriched professional life, reflected glory.</td>
</tr>
<tr>
<td>Area</td>
<td>Supporting comments</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Related to knowledge</strong></td>
<td>Limited synthesis and retrieval capacity (including “prospecting” for relevant knowledge prior to when it is actually needed).</td>
</tr>
<tr>
<td></td>
<td>Most research knowledge can’t be used directly. We need processes that synthesize and interpret information to make it relevant in a specific situation.</td>
</tr>
<tr>
<td></td>
<td>Knowledge asymmetry: researchers know the problem, but not the situation; decision-makers know the situation, but not the problem.</td>
</tr>
<tr>
<td></td>
<td>Lack of ready access to research databases.</td>
</tr>
<tr>
<td><strong>Related to research production</strong></td>
<td>Universities do not value knowledge use, other than for commercialization. Summaries and syntheses of research are not valued.</td>
</tr>
<tr>
<td></td>
<td>Low expectations from funding bodies, governments, and universities for syntheses and summaries; instead, they value the generation of new research knowledge.</td>
</tr>
<tr>
<td></td>
<td>Lack of research, and lack of the right type of research.</td>
</tr>
<tr>
<td></td>
<td>Greatly increasing demands and expectations on researchers (e.g., teams and collaborations).</td>
</tr>
<tr>
<td></td>
<td>Lack of depth of researcher capacity in research transfer in Western Canada; research transfer is not seen as a strategic priority by research funders. A genuine critical mass is needed when the funding window closes.</td>
</tr>
<tr>
<td></td>
<td>Researchers themselves don’t value applied research as much as pure or basic research.</td>
</tr>
<tr>
<td></td>
<td>Huge disparity between funding for research generation and funding to support translation of that research into policy.</td>
</tr>
</tbody>
</table>
### Table 8. Factors viewed as barriers to research transfer or challenges to be overcome (continued)

<table>
<thead>
<tr>
<th>Area</th>
<th>Supporting comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Related to users</strong></td>
<td>Lack of time. The “tyranny of today” makes it difficult to focus on research transfer—or, indeed, anything that is not urgent. (Many comments, such as: no time for reflection; staff is burnt-out.)</td>
</tr>
<tr>
<td></td>
<td>We are a culture of doing, not studying, and are organized accordingly.</td>
</tr>
<tr>
<td></td>
<td>Institutional lethargy; e.g., gatekeepers who support the status quo; culture that does not value evidence.</td>
</tr>
<tr>
<td></td>
<td>No incentives for research transfer; e.g., cost savings go somewhere else.</td>
</tr>
<tr>
<td></td>
<td>Challenges in rural and remote areas; e.g., turnover, distance, travel costs, languages, culture, lack of critical mass.</td>
</tr>
<tr>
<td></td>
<td>Tension about using “real” money (funding allocated to service provision) for research purposes.</td>
</tr>
<tr>
<td></td>
<td>Lack of personnel to focus on research transfer. The health system is under-managed; this type of personnel has been eliminated.</td>
</tr>
<tr>
<td></td>
<td>No clear understanding of why research transfer is important.</td>
</tr>
<tr>
<td><strong>Related to relationships</strong></td>
<td>Lack of partnering skills (among both researchers and decision-makers).</td>
</tr>
<tr>
<td></td>
<td>Inadequate numbers of experts in the RT field.</td>
</tr>
<tr>
<td></td>
<td>Lack of trust (e.g., between researchers, policy-makers, and practitioners).</td>
</tr>
<tr>
<td></td>
<td>Less-than-ideal interprovincial and federal–provincial coordination and collaboration; e.g., there could be more collaboration with federal granting bodies.</td>
</tr>
<tr>
<td></td>
<td>Less-than-ideal communication between players (e.g., government, NGOs, research institutions, communities). Everything changes from one administration to another.</td>
</tr>
<tr>
<td></td>
<td>Working in “silos” (e.g., disciplines, researchers, clinicians, professions).</td>
</tr>
<tr>
<td><strong>Related to policy environment</strong></td>
<td>Lack of evidence-based leadership from governments.</td>
</tr>
<tr>
<td></td>
<td>Threats of accountability make some leery of going too far down the RT path. What expectations will we create? What if we can’t show a difference?</td>
</tr>
<tr>
<td></td>
<td>Fear (especially on the part of government ministries) of losing control over knowledge, given the political nature of many decisions.</td>
</tr>
<tr>
<td></td>
<td>Government wants to hear positive results, not negative ones.</td>
</tr>
</tbody>
</table>
5.0 Results

5.6.3 Informant recommendations

Informants had a wide range of recommendations for improving the RT environment in their own regions. The recommendations are grouped below into themes. There were a very large number of recommendations relating to the system level, as opposed to the level of any one organization or component. Beyond these themes, there were many individual, specific recommendations. The themes that emerged from the specific recommendations are reflected below.

1. Focus at the system level. There are two important concepts here: focus and system. Many spoke about the need to focus on specific targets, where we wanted to make a difference, and then to move collaboratively and in a deliberate way toward improved outcomes by means of research use. This implies coordination and planning at levels higher than regions—and probably higher than provinces, as several respondents indicated that others in neighbouring provinces had shared interests. There were several instances where higher-level coordination and planning would seem to make sense: in developing a pool of RT resources (including access to research databases); in funding research transfer across sectors and settings; and in creating opportunities to lever national funds. Many spoke of the need to use incentives (as opposed to coercion) to induce change.

2. Build on strengths. Possibly the message most often repeated was the importance of finding a way to replicate SEARCH—or at least to transfer the lessons learned from SEARCH to other provinces. The type of knowledge platform offered by the Centre for Health Evidence (CHE) was also mentioned, as was the Need to Know program. Many positive things are happening in Western Canada in the area of research transfer, and that wealth should be shared.

3. Foster a new breed of personnel. There were two predominant themes here. One involved focusing on the next generation by working very actively with education and training institutions such as colleges, universities, and technical schools. The second theme had to do with supporting hybrid models for existing personnel: researcher-practitioners and clinician-scientists with professional backgrounds (including physicians). It also proposed embedding personnel in other sectors for periods of time.

4. Fund research transfer across the system. There is a sense that research transfer will not happen without direct investment— for example, by introducing into the system knowledge brokers who are content experts; by allowing researchers to apply for grant renewals for RT purposes; by providing access to knowledge resources (such as online bibliographic and full-text databases); by increasing interaction between organizations and sectors to facilitate exchange; and by enabling leadership by government ministries.

5. Involve provincial governments as role models and core partners. Several informants reported provincial governments “missing in action” with respect to research transfer. They need more internal capacity and resources for it.

6. Demonstrate the value of research transfer. There is a call for evidence that investing in research transfer will actually produce positive outcomes in the health system.
6.0 Areas for action in Western Canada

In this section, the input we received is considered according to the HRIP framework.

There is no clear right answer here with respect to future directions. This is a complex field, and efforts from many directions could reasonably be expected to produce change greater than one single initiative. That said, there are no clear criteria upon which to choose one intervention (or even several interventions). Also, of course, local situations vary.

Table 9 presents some existing gaps, as derived from the data, and also some opportunities that may be present in Western Canada; it locates them within the dimensions of the HRIP framework. The opportunities were identified in the course of considering the recommendations given by expert informants, as discussed in the previous section (5.6.3). The list of opportunities should not be considered all-inclusive, nor necessarily prioritized. It simply provides examples of opportunities which seem to exist, based on the information collected during the scan.

Although considering the input received during the scan in terms of the HRIP framework is instructive up to a point, one of our major observations is that it is not adequate to reflect all of the areas for potential action. It seems that certain foundations are needed to enable productive action in each of the framework’s dimensions. These include adequate funding allocated specifically to research transfer; strategic action at the system level; attention to building human-resource capacity; and inter-organizational and inter-governmental coordination.
### Table 9. Possible gaps and opportunities, categorized within the HRIP framework

<table>
<thead>
<tr>
<th>Area of focus</th>
<th>Gaps</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Research generation</strong></td>
<td>There is not enough research on key health topics (especially those of high relevance). An enhanced knowledge base about the tools, techniques, and skills of research transfer is needed. Western Canada’s capacity in research transfer lacks depth.</td>
<td>Create a mechanism to add to the knowledge base about research transfer from activities (both research and research use), and find a way of making this knowledge available and useful to all. Introduce incentives for RT researchers in Western Canada to provide knowledge of specific interest to users, and to codify knowledge of RT processes derived from projects whose primary purpose is something else (e.g., implementation research).</td>
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<td><strong>Research synthesis</strong></td>
<td>Decision-makers’ access to usable knowledge (timely, plain-language, relevant) is inadequate.</td>
<td>Enhance our understanding of how both tacit and codified knowledge are an inherent part of the process.</td>
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<tr>
<td><strong>Knowledge movement</strong></td>
<td>Enhanced synthesis and retrieval capacity is needed.</td>
<td>Enhance the use of informatics platforms (e.g., CHE). Develop mechanisms for enabling pull research and synthesis in such a way as to contribute to the general body of knowledge.</td>
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<td><strong>Linkage and exchange</strong></td>
<td>More real (rather than token) relationships between researchers and users are needed. Many health regions are working proactively in this area; but each knows little or nothing about what the others are doing.</td>
<td>Enable hybrid models of personnel (scholar-practitioner; clinician-scientist), along with such mechanisms as exchange programs. Create mechanisms (or adapt such existing mechanisms as RTNA) to enable groups with similar interests to connect, thus enabling research transfer to help address shared goals and outcomes through a research-use approach. Share lessons and experience among settings (e.g., Need to Know, regional activities).</td>
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<td><strong>Implementation</strong></td>
<td>Capacity among users needs to be increased.</td>
<td>Enhance supportive environments in organizations (e.g., culture, structures, processes). Identify high-priority targets and, using research, work toward improved outcomes. Incorporate parallel research streams: one to inform progress on health outcomes, and one to inform the knowledge base related to research transfer.</td>
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<td><strong>Outcomes and evaluation</strong></td>
<td>There is a big need for hard evidence that research transfer works.</td>
<td>Enable rigorous evaluation of the effectiveness of RT interventions.</td>
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</table>
### Table 9. Possible gaps and opportunities, categorized within the HRIP framework (continued)

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<th>Area of focus</th>
<th>Gaps</th>
<th>Opportunities</th>
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<td><strong>Other areas</strong></td>
<td>Provincial governments seem to be “missing in action”. Federal–provincial coordination and collaboration in research transfer is less than ideal.</td>
<td>Provide powerful incentives to all parties (e.g., universities, users). All funding agencies (foundations, provincial government departments) should “walk the talk” and participate in ways other than simply funding activities. Western funding agencies should negotiate with national funding agencies to develop RT programs where there is a shared interest.</td>
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<td>More funds need to be allocated specifically to research transfer. Without resources, it will not happen.</td>
<td>Replicate SEARCH in other locations. Fund RT activities, including those on service-delivery sites; enable grant renewal for researchers to focus on research transfer as appropriate.</td>
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<td></td>
<td>Strategic thinking is lacking at the system level.</td>
<td>Plan at the regional, provincial, and interprovincial levels to enhance synergy between the various components.</td>
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<tr>
<td></td>
<td>Human-resource capacity needs to be developed.</td>
<td>Focus on bringing the next generation into the system with excellent RT skills and aptitude.</td>
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</table>
Building capacity for health research transfer in Western Canada

7.0 Concluding remarks

This was a challenging scan to undertake, for two main reasons. First, it is a relatively new area of focus (or, as some would say, viewing a longstanding issue through a new lens), with all the confusion attendant upon the evolution of the language of research transfer. Second, there is a great deal of activity (or, at the very least, talking) in this area. Together, these two factors signal a changing environment in which to advance the use of research. People are talking about it; they recognize its importance; and, in many cases, they are taking action. It seems clear that there is a timely opportunity to influence the future return on research investment in Western Canada.

That said, however, the dialogue is not yet very coherent; nor are the paths to progress clear. The challenge is to capitalize on the energy that is being exerted to increase the return on investment in research, while also adding to our collective understanding of how to do this well.

Following are some summary comments relating to key areas examined in the scan:

1. Talk about “using research”. Most of those interviewed, despite acknowledging the influence of the language promoted by national granting bodies, still prefer to talk about “research use”. Many recognize the value of shared understandings, but doubt the wisdom of trying to force any particular terminology. What is important is to talk about using research within different contexts, and to use the language that communicates best with different audiences. These different contexts include professional provision of care (provider–client interaction); service delivery (many related activities which produce a service for a client); public policy; community agencies; actions of individuals that influence health; and the private sector, where commercial motives influence the availability of goods and services that affect health outcomes.

2. The user system is ready. There is a great deal of discussion about, and acknowledgement of, the value of using research to change outcomes in the system. Increasingly, significant resources are also being put into research use by the organizations delivering services.

3. Opportunities exist for collaboration across provincial borders. There are many opportunities for joint effort to reduce duplication and to enhance research use. While there were in this scan hints at what some of these may be, some mechanism is needed for sharing lessons learned and identifying areas for joint action.

4. We need to increase our understanding of how the body of knowledge about research transfer can be enhanced. Although there is a lot of activity focused on increasing research use, there is no sophisticated dialogue about how to inform the body of knowledge about research transfer (as opposed to the body of knowledge about particular clinical, health-system, or policy topics under discussion). We have made initial efforts to illuminate the various routes through which this body of knowledge could be informed; however, even within the research community, it seems that the greatest emphasis is on actually doing research transfer, rather than adding to our collective knowledge about how it is effectively done, or what the intellectual underpinnings are. This area is made particularly challenging because the actual activity (using research knowledge to contribute to improvements in areas of health) has superimposed upon it the research activity of studying that research use to contribute to a related, but different, body of knowledge.
Bibliography


Appendix 1  Research transfer scan interviewees

NATIONAL

**Dr. Mark Bisby**  
Vice-President, Research  
Canadian Institutes of Health Research

**Irving Gold**  
Director, Knowledge Transfer and Exchange Unit  
Canadian Health Services Research Foundation

**Dr. Jeremy Grimshaw**  
Director, Clinical Epidemiology Program  
Ontario Health Research Institute

**Dr. Réjean Landry**  
CHSRF/CIHR Chair on Knowledge Transfer and Innovation  
Laval University

**Dr. John Lavis**  
Director, Program in Policy Decision-Making  
McMaster University

**Dr. Renee Lyons**  
Canada Research Chair in Health Promotion  
Atlantic Health Promotion Research Centre  
Dalhousie University

**Liz Stirling**  
Knowledge Translation Specialist  
Canadian Institutes of Health Research

**Glenda Yeates**  
President and Chief Executive Officer  
Canadian Institute for Health Information

BRITISH COLUMBIA

**Dr. Charlyn Black**  
Director, Centre for Health Services and Policy Research  
University of British Columbia

**Patricia Evans**  
Senior Advisor to the President  
Michael Smith Foundation for Health Research

**Cherry Graf**  
Vice-President, External Affairs  
Michael Smith Foundation for Health Research

**Dr. Kendall Ho**  
Director, Continuing Professional Development and Knowledge Translation  
University of British Columbia

**Dr. Janet Joy**  
Director, Innovation Program  
Vancouver Coastal Health Research Institute

**Malcolm Maxwell**  
Chief Executive Officer  
Northern Health Authority

**Timothy Murphy**  
Senior Vice-President, Corporate Services and Programs  
Michael Smith Foundation for Health Research

ALBERTA

**Dr. Ann Casebeer**  
Associate Director, Centre for Health and Policy Studies  
University of Calgary

**Kelly Deis**  
Associate Director, Centre for Health Evidence  
University of Alberta

**Dr. Carole Estabrooks**  
Principal Investigator, Knowledge Utilization Studies in Practice  
University of Alberta

**Dr. Tom Feasby**  
Vice-President, Academic Affairs  
Capital Health Region

**Dr. Karen Golden-Biddle**  
Director, Health Organization Studies  
University of Alberta

**Christa Harstall**  
Assistant Director, Health Technology Assessment  
Alberta Heritage Foundation for Medical Research

**Sarah Hayward**  
Chief Executive Officer  
SEARCH Canada

**Dr. Don Juzwishin**  
Director, Health Technology Assessment  
Alberta Heritage Foundation for Medical Research
### ALBERTA

**Dr. Shoo Lee**  
Scientific Director, Integrated Centre for Care Advancement through Research  
University of Alberta

**Dr. Jacques Magnan**  
Vice-President, Programs  
Alberta Heritage Foundation for Medical Research

**Murray McKay**  
Health Accountability Division  
Alberta Health and Wellness

**Dr. Robert Sheldon**  
Vice-President, Research  
Calgary Health Region

**John Vogelzang**  
Chief Executive Officer  
David Thompson Health Region

**Carol Klassen**  
Vice-President, Corporate Services  
Regina Qu’Appelle Regional Health Authority

**Pauline Rousseau**  
Executive Director, Policy and Planning  
Ministry of Health

### SASKATCHEWAN

**Dr. June Bold**  
Chief Executive Officer  
Saskatchewan Health Research Foundation

**Dr. Karen Chad**  
Associate Vice-President, Research  
University of Saskatchewan

**Dr. Ben Chan**  
Chief Executive Officer  
Health Quality Council

**Dr. Eber Hampton**  
Indigenous Peoples Health Research Centre  
University of Regina

### MANITOBA

**Louis Barre**  
Director, Health Information Management  
Manitoba Health

**Dr. Dexter Harvey**  
Volunteer, Knowledge Exchange Network  
Canadian Cancer Society, Manitoba Division

**Dr. Pat Martens**  
Director, Manitoba Centre for Health Policy  
University of Manitoba

**Dr. Leonie Stranc**  
Senior Health Information Consultant  
Manitoba Health

**Christina Weise**  
Executive Director  
Manitoba Health Research Council

### YUKON TERRITORY

**Jan Horton**  
Coordinator, Primary Health Care Transition Fund  
Yukon Health and Social Services

### NORTHWEST TERRITORIES

**Dr. André Corriveau**  
Chief Medical Health Officer  
Department of Health and Social Services
Appendix 2  Abbreviations

ORGANIZATIONS
ACADRE  Aboriginal Capacity And Developmental Research Environments network
AHFMR  Alberta Heritage Foundation for Medical Research
AHW  Alberta Health and Wellness
CADRE  Capacity for Applied and Developmental Research and Evaluation
CAHR  Community Alliances for Health Research
CCOHTA  Canadian Coordinating Office for Health Technology Assessment
C.H.A.I.N.  Contact, Help, Advice and Information Network
CHAPS  Centre for Health and Policy Studies (Alberta)
CHE  Centre for Health Evidence (Alberta)
CHR  Calgary Health Region
CHSRF  Canadian Health Services Research Foundation
CIHR  Canadian Institutes of Health Research
CKT  National Centre for Knowledge Transfer
CPIH  Canadian Population Health Initiative
CRTN  Canadian Research Transfer Network
CURA  Community – University Research Alliance
DTHR  David Thompson Health Region
EPOC  Effective Practice and Organisation of Care Group (Cochrane)
EXTRA  Executive Training for Research Application
FRSQ  Fonds de la recherche en santé du Québec
HKN  Health Knowledge Network (Alberta)
HQC  Health Quality Council (Saskatchewan)
HSPPRSN  Health Services and Policy Research Support Network (British Columbia)
IARE.H  Institute of Agricultural Rural and Environmental Health
IAPH  Institute of Aboriginal Peoples’ Health (CIHR)
iCARE  Integrated Centre for Care Advancement through Research (Alberta)
IHE  Institute of Health Economics
KUSP  Knowledge Utilization Studies in Practice (Alberta)
MCHP  Manitoba Centre for Health Policy
MHRC  Manitoba Health Research Council
MSFHR  Michael Smith Foundation for Health Research
NAPHRRO  National Alliance of Provincial Health Research Organizations
NCE  Networks of Centres of Excellence
NHS  National Health Service (UK)
NLCAHR  Newfoundland and Labrador Centre for Applied Health Research
NSERC  Natural Sciences and Engineering Research Council of Canada
NSHRF  Nova Scotia Health Research Foundation
OCRN  Ontario Cancer Research Network
OHRI  Ottawa Health Research Institute
PHSI  Partnerships for Health System Improvement
RC  Research Canada: An Alliance for Health Discovery
RHA  Regional Health Authority
RTNA  Research Transfer Network of Alberta
SEARCH  SEARCH Canada (Swift, Efficient Application of Research in Community Health)
SHRF  Saskatchewan Health Research Foundation
SSHRC  Social Sciences and Humanities Research Council
VCH  Vancouver Coastal Health (authority)
VCHRI  Vancouver Coastal Health Research Institute
WRTC  Western Regional Training Centre for Health Services Research

TERMINOLOGY
CB  capacity-building
HRIP  Health Research in Practice (framework)
HTA  health technology assessment
ICE  Interdisciplinary Capacity Enhancement
NET  New Emerging Teams
KE/QI  knowledge exchange/quality improvement
KT  knowledge transfer, or (more commonly) knowledge translation
KTE  knowledge translation and exchange
REISS  Research, Exchange and Impact for System Support competition
RFA  Request for Applications
RIP  research in practice
RT  research transfer
RU  research use
Appendix 3  Formal RT capacity-building activities in Western Canada

The entities included below exist within funding agencies, universities, and non-profit organizations, and were identified by informants during interviews. Further information was sought from documents, websites, and, in some cases, telephone interviews with individuals from the sponsoring organizations. Formal entities observed within health organizations that focused on building internal capacity for using research are not included here. For each entity in the table, an x indicates the dimension(s) of the Health Research in Practice framework in which it is active. These dimensions are abbreviated as follows:

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<td>Alberta Drug Utilization Program (ADUP)</td>
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### Provincial and territorial entities (continued)

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About the authors

**Dr. Judy Birdsell** is the principal of On Management Health Group, a company that consults for organizations in the healthcare, health research, and voluntary sectors. Dr. Birdsell has an M.Sc. in healthcare research and a Ph.D. in organizational analysis.

**Ms Karen Omelchuk** is a consultant at On Management Health Group. She has an M.B.A. and a B.Sc. in Dietetics.