

Knowledge Translation

Final report from the workshop held at
The University of Calgary
June 6-8, 2002

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This document was compiled by Dr. Karen Benzies, Faculty of Nursing, and Dr. Ted Weiden, Director, Centre for Social Work Research and Development, University of Calgary, with the assistance of the Workshop Planning Committee members, Erin Ludwig, Research Assistant University of Calgary, and staff at the Canadian Institute for Child Health.

The views expressed in this document are the authors' and do not necessarily reflect the opinions of the sponsors of the Workshop.

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1 EXECUTIVE SUMMARY

1.1 Background

The objective of the Canadian Institutes of Health Research (CIHR) is to create new knowledge and *translate* it into "improved health for Canadians, more effective services and products and a strengthened Canadian health care system"¹. With the CIHR's commitment to knowledge translation, the Institute for Human Development Child and Youth Health (IHDCYH) and Canadian Institute for Child Health (CICH) embarked on an initiative designed to contribute to the broader understanding of the process and impact of knowledge translation. The University of Calgary agreed to host the Knowledge Translation Workshop and a planning committee was formed. The purpose of the Workshop was to discuss knowledge translation based on the CIHR model and to make recommendations on what this model means to issues affecting all health research, particularly those of interest to the IHDCYH.

1.2 Planning Process

The planning committee met approximately once per month via teleconference to provide advice on the Workshop program and budgets. Dawn Walker, Karen Kidder, and Janice Sonnen at the Canadian Institute for Child Health (CICH) and their staff provided considerable administrative support by distributing invitations and receiving confirmation of attendance from participants. Drs. Ted Weiden and Karen Benzies from the University of Calgary were responsible for the research trainee participants, the logistics of hosting the Workshop at the University of Calgary, and preparation of this report.

1.3 Design of the Knowledge Translation Workshop

Scientists, policy decision makers, and service providers with an identified interest in knowledge translation were invited to attend the Workshop. The planning committee designed the Workshop to encourage all participants to draw upon their professional experiences and to generate ideas about knowledge translation in the context of human development, child and youth health. The Workshop provided a unique platform for discussion by bringing together participants from diverse backgrounds, often people who would not otherwise have had an opportunity to share their expertise and engage in discussion about knowledge translation. In particular, the research trainees repeatedly provided positive feedback to organizers

¹ Canadian Institutes of Health Research Act, C-13 (2000).

about the effectiveness of their full participation in a forum with established researchers, policy decision makers, and service providers.

1.4 **Research Trainee Selection Process**

To assist in building research capacity in the area of knowledge translation, research trainees, including graduate students and post-doctoral fellows, were invited to attend the Workshop. The primary aim of including research trainees was to encourage emerging investigators to participate in and contribute to the development of a national knowledge translation agenda. The Vice-Presidents (Research) at each of the 16 universities across Canada with a Health Science Centre were asked to recommend research trainees to attend the Workshop.

1.5 **Participation**

Final attendance at the Workshop included approximately 80 participants, including scientists, policy decision-makers, service providers, and 25 research trainees.

1.6 **Knowledge Translation Themes**

From an analysis and synthesis of participants' ideas from the workshops small group discussions, six main themes emerged. These themes are summarized below.

Valuing Knowledge Translation – How do we get employers, academics, institutions and others to value KT and support its realization? What is the currency?

Promoting the Flow – How can we promote, support and ensure the multidirectional flow of information and knowledge among researchers, service providers, policy decision-makers, volunteer organizations, other consumers, and the public? What are the barriers, opportunities, strategies?

Giving Voice to the End-User – How do we meaningfully involve the public, the community and the consumer in setting research priorities?

Brokering the Transfer of Knowledge – Who is to do the brokering? What is it that is brokered? How is brokering to be done?

Measuring and Evaluating Knowledge Translation – How do we know when we get it right? What difference does it make?

Checks and Balances – How do we control for conflict of interest?

1.7 Final Comments

There is no doubt that knowledge translation is a complex process with unknown impact on the health and well-being of society. Workshops such as this one have their strength in the capacity to bring together partners from many disciplines and sectors to address the broader issues associated with knowledge translation. This knowledge translation workshop has created and fostered opportunities to develop relationships among experts and research trainees and to build further interest and capacity in the area of knowledge translation.

2.0 BACKGROUND

The objective of the Canadian Institutes of Health Research (CIHR) is to create new knowledge and *translate* it into "improved health for Canadians, more effective services and products and a strengthened Canadian health care system"². The CIHR describes knowledge translation broadly as a concept that encompasses the process from the creation of new knowledge to its application to yield beneficial outcomes for the health and well-being of society. In a draft framework for knowledge translation, Dickson³ defines knowledge translation as "the exchange, synthesis and ethically-sound application of knowledge – within a complex system of interactions among researchers and users – to accelerate the capture of the benefits of research for Canadians through improved health, more effective services and products, and a strengthened health care system". Dickson suggests that knowledge translation may include knowledge dissemination, communication, technology transfer, ethical context, knowledge management, knowledge utilization, two-way exchange between researchers and those who apply knowledge, implementation research, technology assessment, synthesis of results within a global context, development of consensus guidelines, and more. However, a clear understanding of the process and impact of knowledge translation has yet to be realized.

In concert with the CIHR's commitment to knowledge translation, the Institute for Human Development Child and Youth Health (IHDCYH) and Canadian Institute for Child Health (CICH) embarked on an initiative designed to contribute to the broader understanding of the process and impact of knowledge translation. The need for this initiative was identified at an IHDCYH Institute Advisory Board meeting in the fall of 2001. The University of Calgary agreed to host the Knowledge Translation Workshop (hereafter called the "Workshop") and a planning committee was formed. The purpose of the Workshop was to discuss knowledge translation based on the CIHR model now being developed and to make recommendations on what this model means to issues affecting all health research, particularly those of interest to the IHDCYH.

3.0 PLANNING PROCESS

The planning committee (see Appendix A for a list of the Planning Committee members) met approximately once per month via teleconference to provide advice on the Workshop program and budgets. Dawn Walker, Karen Kidder, and Janice Sonnen at the Canadian Institute for Child Health (CICH) and their staff provided considerable administrative support by distributing invitations and receiving confirmation of attendance from participants. Drs. Ted Weiden and Karen Benzies from the University of Calgary were responsible for the research

² Canadian Institutes of Health Research Act, C-13 (2000).

³ Dickson, E. (2002). A Draft Framework for Knowledge Translation at the Canadian Institutes of Health Research.

trainee participants, the logistics of hosting the Workshop at the University of Calgary, and preparation of this report.

4.0 DESIGN OF THE KNOWLEDGE TRANSLATION WORKSHOP

The original intent was to conduct a small, weekend workshop with ten to twelve IHDCYH scientists. As the breadth and depth of the need for information about knowledge translation became more apparent and interest grew, the Workshop developed into a much larger event. Using a matrix conceptualized to ensure representation from the four pillars of the CIHR and all geographic regions across Canada, scientists, policy decision makers, and service providers with an identified interest in knowledge translation were invited to attend the Workshop. To facilitate attendance, the Workshop was designed to run over 2 ½ days at the end of the week.

The planning committee designed the Workshop to encourage all participants to draw upon their professional experiences and generate ideas about knowledge translation in the context of human development, child and youth health. After keynote presentations and reaction panel presentations, a series of three breakout groups were conducted wherein the participants were asked to identify and address key questions about knowledge translation. Undergraduate student recorders were hired to assist with capturing the ideas generated in the breakout sessions. Small discussion group reporters were elected to synthesize the discussion from individual breakout groups and present the information to the large group.

The Workshop provided a unique platform for discussion by bringing together participants from diverse backgrounds, often people who would not otherwise have had an opportunity to share their expertise and engage in discussion about knowledge translation. In particular, the research trainees repeatedly provided positive feedback to organizers about the effectiveness of their full participation in a forum with established researchers, policy decision makers, and service providers.

5.0 RESEARCH TRAINEE SELECTION PROCESS

To assist in building research capacity in the area of knowledge translation, research trainees, including graduate students and post-doctoral fellows, were invited to attend the Workshop. The primary aim of including research trainees was to encourage emerging investigators to be full participants in and contribute to the development of a national knowledge translation agenda. A secondary aim was to begin to develop linkages among scientists, policy decision makers and research trainees in similar content and methodological areas. Opportunities to develop these linkages early in their research careers are expected to assist emerging investigators establish innovative, productive, and independent research programs.

To ensure representation across the four pillars of the CIHR and the geographical regions of Canada, the Vice-Presidents (Research) at each of the 16 universities across Canada with a Health Science Centre were asked to recommend research trainees to attend the Workshop. Each university was asked to partner with the CIHR to send two research trainees to the knowledge translation workshop, one funded by CIHR and one funded by their home university.

Research trainees who accepted the invitation to participate received a package of pre-session readings about knowledge translation. In addition to attending the Workshop, the research trainees also participated in an orientation and team building session immediately prior to the Workshop. Dawn Walker, President and CEO, Canadian Institute for Child Health, Dr. Ted Weiden, Faculty of Social Work, and Dr. Karen Benzies, Faculty of Nursing, welcomed research trainees, conducted a round of introductions, and invited full participation by research trainees in the Workshop. Research trainees were apprised of potential opportunities resulting from the Workshop, such as publications and research partnerships in their area of interest.

Dr. Nicola McDermott, Assistant Director, IHDCYH, gave a presentation about the CIHR and knowledge translation within IHDCYH. Research trainees then broke into small groups and were asked to begin to develop their own perspectives of knowledge translation in preparation for the research trainee presentation scheduled for Saturday morning. To begin the process of preparing for the presentation, research trainees generated six major questions for which they expected answers during the course of the workshop. See Appendix B for Student Expectations of the Workshop. Twenty-five research trainees attended the Workshop, including graduate students at the Master's and doctoral levels, as well as post-doctoral fellows from universities across Canada.

6.0 KNOWLEDGE TRANSLATION WORKSHOP PROGRAM

6.1 Introduction and Background to Knowledge Translation

Dr. Jean Lafrance chaired the Workshop. See Appendix C for the complete Workshop Program. On the evening of June 6, Dr. Lafrance introduced Ms. Sherry Thompson, Intergovernmental Initiatives and Policy Research, Alberta Children's Services, and Dr. Jim Frideres, Associate Vice President Academic, University of Calgary, who welcomed workshop participants to Alberta and to the University of Calgary. Ms. Dawn Walker, President and CEO, Canadian Institute of Child Health, introduced Dr. John Challis, Scientific Director, CIHR-IHDCYH who delivered the opening address to an enthusiastic audience at the University Club, University of Calgary.



Dr. Jean Lafrance, Edmonton Division head, Faculty of Social Work;
Member, Institute Advisory Board, IHDCYH



Ms. Sherry Thompson, Intergovernmental Affairs & Policy Research,
Alberta Children's Services



Dr. James Frideres, Associate VP Academic, University of Calgary



Ms. Dawn Walker, President & CEO, Canadian Institute of Child Health



Dr. John Challis, Scientific Director, IHDCYH

On June 7 and 8, participants heard from many distinguished speakers during the Workshop and engaged in lively discussions in response to questions for breakout groups. The following sections summarize the key presentations and offer a synopsis of ideas presented at each of the breakout sessions.

6.2 The CIHR Knowledge Translation Framework: Opportunities, Challenges and Gaps

Dr. Elizabeth Dickson

Senior Policy Advisor, Director of Knowledge Translation, CIHR

Elizabeth Dickson is the Senior Policy Advisor and Director of Knowledge Translation at the CIHR. In past she has held positions as the Director of Biotechnology and Health Care Products at Industry, Science, and Technology Canada, Director of Chemicals and Bio-Industries, Director General of Biodiversity at Environment Canada, and Director of Programs at the Medical Research council of Canada.

CIHR Knowledge Translation Framework

A systematic representation of the overall mandate of Canadian Institutes of Health Research (CIHR) was presented within which "priority research" arises from a "foundation of research" that includes the activities of the former MRC and

NHRDP. Dickson's⁴ definition of Knowledge Translation (KT) is "the exchange, synthesis and ethically-sound application of knowledge within a complex system of relationships among researchers and users." She suggests that KT is involved at several points of the research cycle: first, in drawing upon researchers and knowledge users to define research questions and methodologies; second, in conducting research such that the findings contribute to global knowledge. Third, from global knowledge, KT is involved in contextualizing research findings against the background of other knowledge and socio-cultural norms as well as in publishing research findings in plain language and accessible formats for direct use by other researchers and knowledge users. Fourth, KT is involved in applying contextualized knowledge that influences subsequent rounds of research based upon the impact of knowledge use. Finally, knowledge is used as the basis for policy decisions; program planning and administration; provision of health care services; health promotion; commercialization; and future research.

CIHR activities focused upon KT are aimed at building KT capacity, advancing KT in research, and providing CIHR leadership in KT. Within the CIHR KT Draft Framework, building KT capacity includes: (a) promoting communications, dialogue and partnerships on health-related KT, (b) providing easy access to electronic resources that are important to the Canadian health KT community, (c) assessing gaps and developing new programs to meet them, and (d) raising awareness and promoting a common understanding among the public and other participants in health-related KT. Additional KT activities include: (a) advocacy to encourage Canadian institutions to create environments and infrastructure conducive to health-related KT, (b) support for Training Centres and trainees in KT research, (c) incentives to encourage integration of KT training into graduate programs in health-related disciplines, (d) support for professional exchanges among different types of participants in health-related KT, and (e) scholarships for science writers.

Advancing research capacity in the area of KT includes supporting research into KT itself through contributions to (a) the development of innovative KT approaches by working with partners to support the evaluation of selected pilot KT projects, (b) incentives for the integration of KT across all CIHR supported research, (c) support to meet emerging research needs, (d) dialogue among researchers and knowledge users to define research questions and methodologies, and (e) coordination with other key partners in supporting the contextualization of health knowledge and strategies for use uptake and application.

Finally, in collaboration with Institutes, the CHIR is providing leadership by overseeing the evaluation of the KT Draft Framework, plans, and budgets. It is

⁴ Dickson, E. (2002). A Draft Framework for Knowledge Translation at the Canadian Institutes of Health Research.

anticipated that the CIHR will evaluate the effectiveness of CIHR initiatives in health-related KT and work strategically to develop initiatives that will advance KT capacity in health-related fields. To date, CIHR KT initiatives have included: (a) scholarships to support science writer training, (b) support for training programs, (c) support for research through "Strategies for Knowledge Translation in Health" program, and (d) support for a traveling museum exhibit on genomics.

6.3 Reaction Panel Presentations in Response to Dr. Dickson's Draft Knowledge Translation Framework

6.3.1 Dr. Martin V. Pusic

**Evidence Transfer in Child Health Research Unit,
Centre for Community Child Health Research, BC**

Martin Pusic's research focuses on the development and evaluation of new medical education and knowledge transfer techniques using information technology; the integration of computer-aided instruction into clinical environment, as well as general clinical research in pediatric emergency medicine.

Knowledge Transfer in Health Care

Within the Knowledge Cycle, information from researchers circles toward policy makers, the public, the private sector, and health care providers and then back from these sources toward researchers. In ideal circumstances, anyone confronting a health-related decision would have instant access to relevant contextualized research findings. In his presentation, Dr. Pusic discussed the role of librarians, health informaticians, and health educators in KT. Three challenges were summarized. First, academic health centres should implement a network that facilitates the flow of recorded knowledge. Second, academic and administrative organization information data bases should be linked with those of hospitals. Finally, rapid integration of information technologies in the learning and practice of the health professions should be encouraged. In response to the above challenges, a long-term funding strategy was implemented by the National Library of Medicine to develop the "Integrated Academic Information Management System" (IAIMS). IAIMS serves as a mediator of information between a variety of information sources and end users of that information. With respect to medical education, KT is viewed as crucial to effective contextualization and lasting behavioral change within an evolving model of medical education of distributed and apprenticeship learning. Dr. Pusic ended by posing a series of questions about the role of libraries, information technology, decision support, and medical educators in KT.

6.3.2 Dr. Rejean Landry

Professor, Department of Political Science, Laval University

Rejean Landry was the 2000 Chair on Dissemination and Uptake of Knowledge in Health Services funded by the Canadian Health Services Research Foundation. Dr. Landry is also a principal of the Center for Knowledge Transfer, an interdisciplinary collaboration for the education of graduate students with a specific content focus on knowledge utilization and policy implementation.

The CIHR Framework for Knowledge Translation: How Does it Stand the Reality Test?

CIHR researchers may know more about KT and engage in more KT activities than they realize. Significant explanatory factors in the use of KT in research are supply, demand, and linkages between the two. It was noted that actions undertaken or underway by the CIHR specific to these factors include: (a) operating grants programs, (b) transition programs (CAHR, IHRT), (c) science writer scholarships, (d) KT Training Centre, (e) two competitions on KT (RFA on KT), and (f) working groups, presentations, and workshops organized by various of the thirteen CIHR Institutes and CIHR central.

The transfer of protected intellectual property and unprotected knowledge are among the future challenges in KT. Examples of transfer of protected intellectual property may include filing of patents applications, registration of copyright for computer software or databases, registration of copyright for educational material, registration of integrated circuit topographies, registration of industrial designs, filing for protection of trademarks, and filing of applications for plant breeders' rights. There is limited incentive to transfer protected intellectual property to private sector users because of the low return generated by the commercialization of university research.

KT is a process of interactive exchange between suppliers and users that results in cumulative learning specific to solving particular problems with codified and tacit knowledge. One of the main challenges associated with the transfer of knowledge to users, such as policy makers, administrators, healthcare providers, the general public and patients, is deciding what knowledge should be transferred and to whom.

KT is institutionalized at three levels: micro (individuals), meso (organizations), and macro (policies). Knowledge travels through various levels by formal and informal interactions. It was suggested that KT at CIHR is, and will continue to be, supplier-dominated because the funds are primarily allocated to researchers for the creation of knowledge. Further, interactions between suppliers and users are minimal and KT is not recognized in any manner. In contrast, the concept of Knowledge Utilization (KU) by health care organizations is user-dominated, and based on sustained and intense interactions between suppliers and users. KT-KU depends on the absorptive and learning capacity and research activities of users.

While it is not documented, recognized, or rewarded, researchers may be engaged in more KT than they realize. The emphasis now should be on doing more of what researchers already do in KT. The next steps in implementing the CIHR vision are to: (a) encourage and support documentation of activities and success stories regarding KT, (b) recognize KT by adding a new section on KT in the Curriculum Vitae module, (c) recognize the research costs of KT by adding a new section in the budget section of the application forms, (d) provide guidelines and tools on KT for researchers, and (e) organize events or opportunities fostering interactions between researchers and users. These small changes would contribute the emergence of better practices in KT. Finally, it was pointed out that only a small percentage of all research knowledge is created in Canada. Thus, it was recommended that we need to become more efficient regarding the application of the 95% of the research knowledge produced outside Canada.

6.3.3 Dr. Claude Roy

**Department of Pediatrics, Hopital Ste. Justine;
Professor Emeritus, Universite de Montreal**

Claude Roy is a member of the Society for Pediatric Research, the American Pediatric Society, the Canadian Pediatric Society, the American Gastroenterological Association, the Canadian Association of Gastroenterology, the Society of Experimental Biology and Medicine.

Framework for Knowledge Translation at CIHR

The excellence of the first draft for a Framework for KT at CIHR was recognized in that it: (a) sets the agenda in the context of CIHR objectives, (b) defines producers and users of knowledge, (c) proposes an infrastructure for KT at CIHR, and (d) lists organizations with a KT mandate. Suggested for inclusion in the final document are additional sections: (a) "Reliable knowledge is not enough", (b) description of the knowledge cycle or the "virtuous cycle", and (c) discussion of strategies specific to optimizing impact on the five categories of users. Capacity building should include the training and recruitment of "integration" and "application" scholars. The need to build capacity for communicators of research in the public realm, for KT researchers, and for evidence-based decision making was identified. A new approach to KT would result in: (a) a matrix of investigators replacing the single investigator, (b) core laboratories replacing pirating of basic labs, (c) provision of funding for general clinical research centres where none has existed, (d) training for applied researchers as rigorous as for basic researchers, (e) educational opportunities for clinical faculty replacing a "learn on the job" approach, and (f) scholarships for study of "integration" and "application" of knowledge being given equal consideration in place of the current situation of promotion on the basis of scholarship of "discovery".

Dr. Roy contends that medical practitioners should integrate not only best evidence, but also the experience of caregivers and the choices of the patients. Many times evidence is not available because information systems are inadequate however, physician buy-in can be a major obstacle to evidence-based medicine. KT research could increase evidence-based medicine through the establishment of specific procedures to guide changes in practice patterns, and provide clinical guidelines as decision-making aids for medical practitioners.

Numerous challenges and barriers associated with KT were noted for each of the following: (a) researchers across disciplines and research strategies, (b) policy makers and administrators, (c) health care providers, and (d) the private sector. With respect to researchers across disciplines and research strategies, emphasizing "integration" scholarship was suggested as a framework for researchers to: (a) make connection across disciplines, (b) place their own research in broader patterns, (c) move beyond disciplinary boundaries, and (d) mobilize sciences other than the life sciences. "Application" scholarship describes a 'connectedness' through which research is 'authenticated' and made to live in society; with the application scholar assessing how an intervention works when applied to humans. This type of scholarship is evident in medical education and clinical practice scholarship.

Barriers between researchers, policy makers and administrators include non-scientific factors such as economic, ideological, and bureaucratic interests. Scientific factors include the use of science as ammunition, not as a method for policy formation. Additional barriers include the fact that policy makers can't wait for all the answers to be in before making decisions. Dissent and conflict between researchers is good for science, but bad for policy. Building bridges between science and policy requires: (a) learning the language, (b) avoiding arrogance, jargon, and the damage that can be created by unfulfilled promises, (c) recognizing the politicization of science, (d) knowing the policy process, issues and outcomes, and (e) identifying the change makers. Patience and perseverance are essential. Health care providers represent a wide spectrum of professionals who dispense care in a variety of setting. KT must address the importance of networking and retraining, measuring outcomes, clinical success, health perceptions, functional measures, patient satisfaction, and quality of life for Canadians.

Issues raised with respect to KT in delivering science to the public include: (a) increased accessibility to information and misinformation, (b) fraudulent science and sensationalism, (c) increased interest in science, as well as more prevalent distrust of science, and (d) unrealistic expectations of the public. Barriers to improving the quality of health care include: (a) the uncertainty influencing all decision making, (b) delays in disseminating results and the use of new technology, (c) research outcomes are not necessarily reproducible in community setting, (d) a need for large databases, (e) overuse and under use of services, (f) paucity of work on compliance, (g) a need for one stop services, and (h) non-

clinical settings. A suggested research agenda for KT is to: (a) identify gaps in knowledge and areas where research is insufficient, (b) explore mechanisms to transform knowledge information into action, and (c) provide training and career support for KT research.

With respect to KT, the private sector, and the use of science to succeed as a nation, Dr. Roy points to the need for a strong science base by: (a) increasing public funding, (b) developing infrastructure to identify innovative science and its potential to generate wealth, business and jobs, (c) recognizing the importance of excellent curiosity-driven research as major breakthroughs come from that type of research, (d) strengthening the links of the bench-bedside-community-market chain of innovation, (e) bringing universities and businesses closer together, (f) speeding product and patent approval, and (g) protecting intellectual property. Finally, consumers are viewed as fuelling agents in the process of innovation. Thus, it is important to promote the benefits and reassure consumers about safety of research. Public trust is vital to innovation. Science is too important to be left only to scientists.

6.3.4 Dr. Serge Carrier
Scientific Director, Servier Canada

Serge Carriere has an interest in the relationships between government, university and investors, and how each of these relates back to society. He recently presented a talk entitled, "Transforming Medical and Health Research Innovation into Successful Entrepreneurial Ventures" at an event sponsored by the Centre for Entrepreneurship and Family Enterprise.

Knowledge Translation Workshop: Institute of Human Development Child and Youth Health

The facilitation function of CIHR among sector partnerships and research tools was described through its activities of providing for research training and funding, linking health researchers, establishing a national research agenda, and managing complex health research issues. Social transformation, benefits to investors, and better health care depends upon and feeds into CIHR's facilitation function. The framework for KT was judged to be based upon sound principles and well thought out interaction. Although some key players are forgotten, no specific action plan was outlined, and no reference was made to systems already implemented. Nevertheless, through this framework, CIHR can build capacity, stimulate research, and strengthen KT which will have an impact upon implementation and evaluation within the social, health research, and health care arenas.

Within health research, a model for technology transfer and innovation is the 1993 MRC initiative for the creation of CMDP. Several needs were identified with respect to research and development: (a) sensitization of health research

administrators, (b) larger investments, and (c) consolidation. Evaluation of basic research outcomes was summarized with respect to intellectual property protection, drug candidate molecules, spin off companies, interactions with pharmaceutical companies, and funding from granting agencies and investors.

KT within health care was described in terms of the source of information used by physicians, policy makers, administrators, and politicians. KT is important to health care implementation in terms of prevention, treatment, and disease management. In conclusion, there was expressed agreement with the principles underlying the Framework. However, it was also noted that yet to be demonstrated were practical changes and results and specific implementation plans. It was suggested that 'champions' would be advisable for carrying the framework forward.

6.4 Small Group Discussions

The reaction panel presentations were followed by small breakout group discussions. Groups were formed by randomly assigning numbers to all participants. Each group consisted of a spokesperson, a planning committee member acting as facilitator, one scribe/recorder, and workshop participants, including research trainees.

The questions addressed in the breakout groups were as follows:

- What is your understanding of knowledge translation in the context of your work/discipline?
- How important is knowledge translation in the context of your work?
- What do you want to be able to learn in this workshop to apply to your work?

Each group was given the questions in a different order, to ensure that no question was missed due to time limitations. Participants identified as many issues as possible surrounding the process and impact of KT in their particular area of expertise. At the end of the breakout session, all ideas that were identified were posted in the meeting hall. Participants were then asked to prioritize the top three issues for them by placing colored dots on the priority issues. These priority issues then formed the basis for future breakout group discussions.

6.5 What Is Working In Knowledge Translation And Why?

6.5.1 Dr. Ray DeV. Peters

Professor, Department of Psychology; Research Director, Better Beginnings, Better Futures Research Coordination Unit, Queen's University

Ray Peters has been involved in the field of child development and children's health for over 25 years. The focus of his research is evaluation of community-

based programs that influence the development of young children and their families. Dr. Peters is also a member of the Directing Council of the Centre of Excellence for Early Childhood Development and the Chair of its Services Committee.

What's Working in Knowledge Translation?

Two important aspects of research are the "medium" (How do we get messages of research findings out to the public and policy makers?) and the "message" (What do we want to say about research findings?). Examples of meta-analyses, literature review catalogues, and best practice lists of evidence-based interventions were described to illustrate different approaches to answering a research question.

American Psychological Association criteria for empirically validated treatments were outlined. For example, well-established interventions are typically supported by evidence from at least two strong between-group design experiments which have demonstrated efficacy. Efficacy is demonstrated by superior to a placebo intervention, another treatment and/or equivalent to an established treatment. In addition, characteristics of the client samples must be clearly specified and at least two different investigators or research teams must have demonstrated effects. Common characteristics of issues in best practice research were also outlined by contrasting lab studies (efficacy trials) and clinical studies (effectiveness trials).

Among the conclusions drawn are that few studies of the effects of prevention and early intervention programs have been adequately designed, implemented and evaluated, particularly for children younger than seven or eight years of age. Even fewer studies have followed the children or parents after the program ended to determine long-term effects. The most effective demonstrations are small scale (involving less than 100 families). Little is known about the effects of expanding these demonstration programs to larger groups. Costs of implementing programs are seldom collected or reported and few quality economic analyses carried out, making it difficult for policy makers to make informed decisions.

KT may be assisted through the efforts of the Centres of Excellence in Early Childhood Development. The mandate of these Centres is to disseminate scientific knowledge on the social and emotional development of young children to trainers and educators, policy makers, service planners, and health and education practitioners.

6.5.2 Dr. Terry Klassen
Chair of Paediatrics, University of Alberta

Terry Klassen is Chair of Pediatrics at the University of Alberta. He developed his interest in evidence-based practice while working in the pediatric emergency department at the Children's Hospital of Eastern Ontario. He has published systematic reviews on a number of topics and continues to have a strong interest in evidence-based decisions in child health. Dr. Klassen is a member of the Canadian Association of Pediatric Health Centres.

Knowledge Translation Workshop

Two assumptions about KT were outlined: new knowledge is created that has the potential to improve health and prevent disease, and although complex it is possible to "know" the truth. Research challenges are: (a) the creation of new knowledge, (b) dissemination of knowledge (publication), (c) synthesis of knowledge, and (d) utilization of knowledge. New knowledge creation efforts range from randomized clinical trials (RCTs) to observational studies, depending on the question. Research on therapies makes use of RCTs, whereas research about risk factors, complex interventions, legislative interventions make use of observational studies. With respect to uptake and utilization, there can be up to a 20-year lag before evidence produced is utilized in practice. Important aspects of uptake and utilization include: (a) the form of the evidence, (b) the context of decision-making (it informs but does not determine the decision), and (c) bringing evidence to the point of decision-making.

Contextual factors within which the clinician/policy maker operates include the health region, peers, Alberta Health and Wellness, and the patient/family. In the current situation, attention to political influences, resources, culture and the patient's perspective dwarf attention devoted to evidence. The future may evolve such that evidence and the patient's perspective will dominate attention.

The issue of publication bias was also presented. Publication does not equal dissemination. Forty percent of randomized control trial studies presented at major pediatric scientific meetings are not published because the probability of publication is related to positive results.

The systematic review process was described as a means for synthesis of knowledge. Requirements for a systematic review are a clear: (a) focused clinical question, (b) systematic and comprehensive search for the evidence, (c) clear inclusion/exclusion criteria, and (d) assessment of the quality of studies. From a systematic review, data may be extracted and synthesized through qualitative or quantitative systematic review. Examples include meta-analysis, the Cochrane and Campbell Collaborations, the Alberta Research Center for Child Health Evidence. In conclusion, it was noted that the task ahead is complex but essential to improve decision making. Knowledge synthesis, and bringing understandable products into the decision-making process, makes possible the ultimate goal of improving and promoting the health of Canadian children and youth.

6.5.3 Ms. Linda Nosbush

Understanding the Early Years Pilot Project, Prince Albert, SK

Linda Nosbush is Community Research Coordinator for the Prince Albert Pilot Site for the HRDC funded Understanding the Early Years Project. Ms. Nosbush also works as the Early Learning consultant for the Saskatchewan Rivers School Division. Her academic interests include developmental learning strategic learning, literacy, community development and community learning. She has worked as a classroom teacher, university professor and consultant.

What “Understanding the Early Years” Can Contribute

Three terms used in referencing KT were differentiated: (a) knowledge *diffusion* occurs in a non-linear, multifaceted, multi-dimensional manner, (b) knowledge is *translated* from one language or medium to another, and (c) knowledge *exchange* consists of a dialogue between research and lived experience where relationship is critical, content is relevant to professionals and citizens, a common language is used, trust is built at many levels among many voices and further requires active engagement of the whole person. The importance of knowledge with respect to the global economy has been emphasized by the Federal government⁵.

Within a “Virtuous Circle”, a prosperous society leads to social stability, and thus to resources to fund programs that foster healthy child development, which in turn leads to healthy children and adolescents who are prepared and able to contribute to innovation and a competitive workforce. Understanding the Early Years, a 5-year longitudinal study funded by Human Resources Development Canada and Applied Research Branch designed to build knowledge around community influences on child development, to monitor progress in terms of child outcomes, and to catalyze communities toward improved child outcomes. Within the Knowledge Exchange – Knowledge Action Plan phase, the study is developing tools that make data understandable. Community Mapping is an example of visual presentation that is useful, integrated, workable in a variety of formats, that is open to a variety of types of dialogue and analysis, and accessible to a variety of different audiences.

Knowledge Exchange is conceptualized as an interactive process used to generate knowledge through research and effective practices, exchange it through interactive, timely and accessible engagement, and use it for practice, planning, policy making and development of new research. The process of “butterfly metamorphosis” was used to describe the transformational process that occurs within a community through the knowledge exchange process. In the “egg” stage, data are encapsulated, difficult to permeate, and in a form that is not

⁵ Human Resources Development Canada. (2000). Skills and Learning for Canadians: Canada’s Innovation Strategy, Ottawa: Author.

easily understood. In the “caterpillar” stage, information emerges as data are interrelated to make it more understandable and relate it to previous research. In the “chrysalis” stage, knowledge results from synthesizing the information by integrating it with lived experience and background knowledge. At the “butterfly” stage, evidence-based decision-making leads to informed decisions about policies and programs. Ms. Nosbush ended with a detailed description of the complexities and principles of developing and working within a framework of service integration, intersectoral work, and effective partnerships at multiple levels.

6.5.4 Ms. Dawn Walker

Executive Director, Canadian Institute of Child Health

Dawn Walker is a member of the IHDCYH Institute Advisory Board and the Directing Council of the Centre of Excellence for Early Childhood Development.

One of the main tasks of the Canadian Institute for Child Health is “information brokerage”, the moving of information about child and youth health, well-being and rights between sectors and between information producers and users. Ms. Walker’s illustration of information brokerage was in the form of the following two stories.

Once upon a time, in the late 1980’s researchers from afar, in other lands, determined four risk factors for reducing the incidence of Sudden Infant Death Syndrome. People, researchers, physicians, policy makers alike, in other countries like Canada were skeptical. However, brave souls primarily from self-help groups, parent support groups and the voluntary sector, who were concerned about child health, convinced the government to host a meeting to discuss the findings and programs from far away places. When the scientists were together there was great rumbling and discourse. What did it mean? Why did these risk factors make a difference? Did the sleeping position of a baby really make a difference? Why? Was it worthwhile promoting these risk factors to parents and professionals? What was the message we were sending to parents grieving the loss of a child to Sudden Infant Death Syndrome (SIDS)?

All the players discussed and negotiated for the next few months. Health professional groups discussed the science and its effect on practice. Eventually, all the players agreed upon a written national statement and a multi-pronged social marketing and education plan. Teaching programs, focusing on hospital newborn care and parenting practices, promoted “Back to Sleep” and reinforced increased breastfeeding, smoke free environments and cooler bundling (clothing). Multi-media campaigns on the radio, in magazines, and television helped spread the message. All health professionals were informed and consistent messaging followed over the following years. The result: a 60% reduction in SIDS in the overall Canadian population. Although higher rates

remain in the Aboriginal population where the risk factors have not been as comprehensively embraced.

Scientists, health professionals, child advocates and many others have also been discussing Fetal Alcohol Syndrome (FAS) for many years. They too have attempted national statements as well as teaching tools. There has also been the creation of interventions. Although there has been some increase in awareness in some sectors, there remains little agreement on FAS. Science has not been clear nor has the message been translated in a way that has multi-sectoral “buy-in”. There continues to be debate on tolerable alcohol level in pregnancy, as some believe there is no tolerable level while some continue to believe there is. The difference in opinions includes both health professionals and the general public. The overall messages are blurred and inconsistent. We continue to flounder in our efforts to address FAS in a comprehensive and integrated manner.

These are but two stories which illustrate a number of points:

- Science / evidence must be the basis of decision-making
- The translation comes in many forms depending on who is receiving the information
- Consistency of messaging is critical to the uptake of practice change
- Public policy and professional and parenting practice should reinforce and compliment each other
- Results occur when everyone from across the spectrum of prevention and care and treatment are involved in a consistent manner
- It sometimes takes a brave soul to stick out ones neck to provoke discussion.

6.6 Where Are We Going With Knowledge Translation?

Ms. Sonja Corkum

Vice President Knowledge Translation and Partnerships, Canadian Institutes of Health Research

Translating Research into Action

East Coast KT: “Tell me where you are at and I will come to where you are to.” And Youth KT “Well I’ll tell you what I want – what I really, really want...” An injury prevention program was used to illustrate translating research into action and point to some important questions: Have we discovered a new concept? Whose job is KT anyway? Is there a role for a knowledge broker? How much should we expect/ask researchers to be KT experts? Who are decision-makers? Who are policy-makers? How is just-in-time knowledge created? To what degree should users be involved in research and vice a versa? What role does cost-benefit analysis play in decision making? Is all research KT-able? Key Points included conceptualizing KT as a *ménage a trois*, emphasizing a link between

knowledge creators & users, considering what we already know (i.e., single pieces of research vs. global knowledge), and making use of evidence so others do not have to evaluate.

6.7 Research Trainee Presentation

In preparing their presentation, research trainees began with discussion of several points: translational knowledge, incorporating stakeholders, and education and training. Likewise, several broad questions were explored regarding advancing the knowledge translation research agenda:

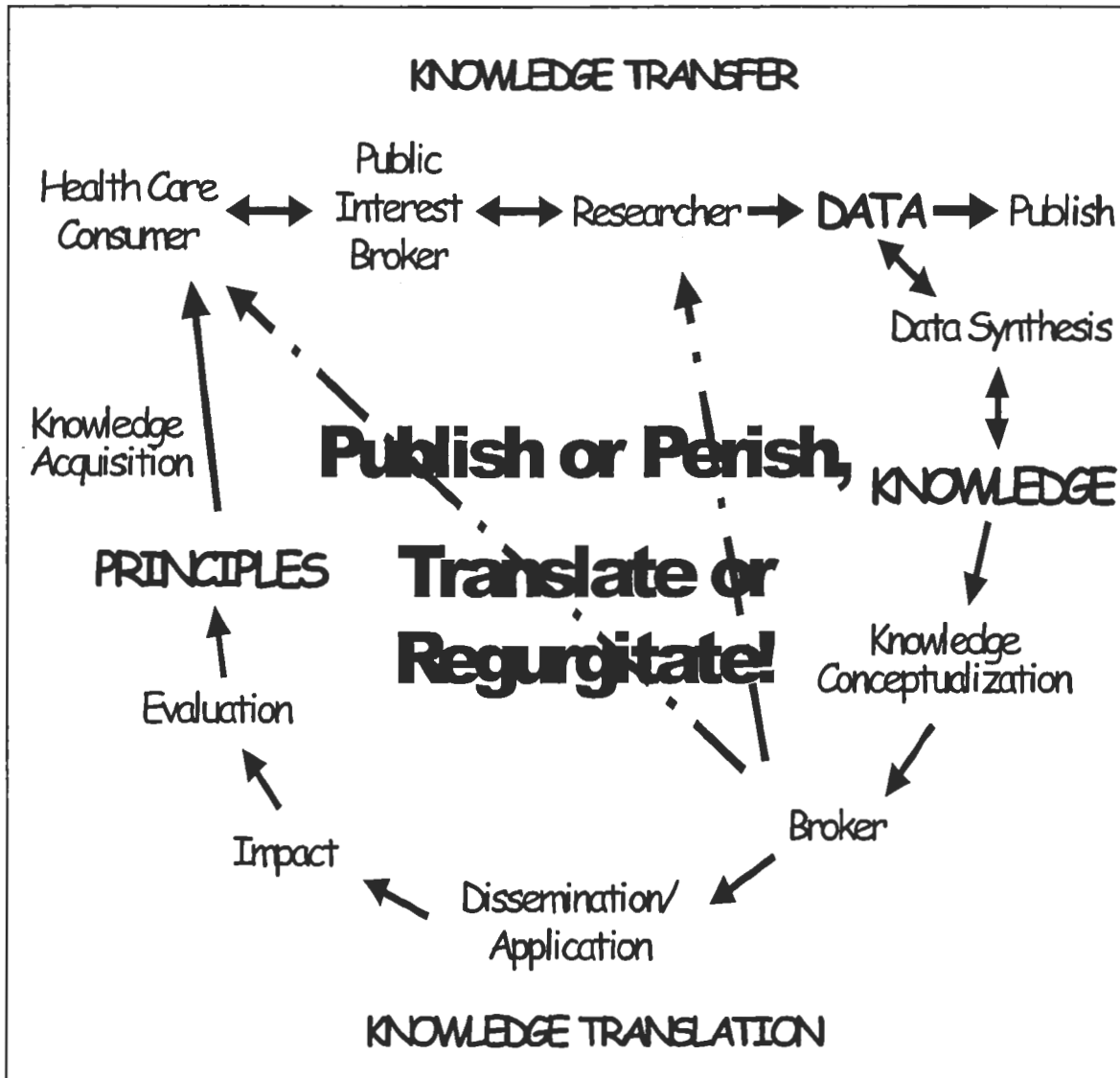
1. Does the process of transferring, translating and exchanging knowledge vary according to:
 - the nature of the research theme?
 - characteristics of the target audience?
 - contextual factors?
2. More precisely, for each research theme and for each target audience are there differences in the following:
 - Effective dissemination strategies?
 - Distinguishing features of linkage mechanisms?
 - Uptake/application?
 - The measurement of impact?
3. Should we be considering how each of the target audiences engages in decision-making, and how this influences uptake?
4. What is the evidence on brokering?
 - What does successful brokering look like?
 - Does it differ across themes and users?
 - What can we learn from other disciplines?
 - Are knowledge transfer, translation and exchange equally important across all themes and user groups?
 - If not, should we identify where it is most important, and focus there?

It was suggested that next steps for KT involve the following: (a) clearly define knowledge translation, (b) synthesize what we know, and (c) design and conduct intervention studies that address multiple approaches. Further points of discussion included 'selling' knowledge translation to emerging researchers, researcher accountability, and providing support for the paradigm shift.

Finally, a model distinguishing Knowledge Transfer, KT, and Knowledge Acquisition was proposed for discussion. See Figure 1. It was proposed that the process of KT begins with the researcher who collects and analyses data, publishes findings and synthesizes data for transfer to health care consumers through a public interest broker. In the process of Knowledge Translation,

synthesized data contributes to Knowledge Conceptualization, moves through brokers toward dissemination and application. Principles emerge from evaluation of impacts of application. Those principles are then moved to the health care consumer through a process of Knowledge Acquisition. Finally, it was suggested that, with the explicit introduction of KT, the maxim of “publish or perish” may change to “translate or regurgitate”.

Figure 1. Process of Knowledge Translation



Comments emerging from the research trainee presentation include the following:

- It is recognize that in the real world things do not necessarily work according to Figure 1. The proposed model for KT is a model of an 'ideal' cycle of KT
- Should researchers have the last word at the 'principles' level, or should the influence of the stakeholders be felt?
- Upstream feedback is essential. Researchers need to know success of results at a stakeholder level.
- After evaluation, re-conceptualization needs to be addressed before KT occurs.
- There is need for a mechanism by CIHR to facilitate KT.
- Recognition is needed for the importance of KT.
- Funding is needed for KT research in particular. Funding would be useful for a connection point between researcher and receptor – this workshop is a step in this direction.
- KT should **not** be cheap. Standards need to be set in order to be successful, and you do not want to set the standard too low
- Incorporate all stakeholders in the process – Representatives of all stakeholders need to be at the table, involved in the KT process.
- There are many factors other than knowledge creation that are necessary to be an effective researcher, and KT should fit into this
- There is a need to advance the KT research agenda – what don't we know about KT utilization?
- Is KT equally important across all groups?
 - We need to synthesize what we already know.
- There is a need to sell KT to emerging researchers:
 - emerging researchers need to know their role in KT;
 - they need to understand the value of KT within their research;
 - they need to understand what KT means in terms of career development, rewards and incentives.
- Research data need to be targeted and used properly by the audience to which they are intended.
- Implications for a "paradigm shift":
 - emerging researchers are already used to dealing with people from different disciplines;
 - emerging researchers should be encouraged to explore different disciplines;

- emerging researchers should not be pushed to 'over-specialize';
- fund KT research and involve emerging researchers in making KT happen.

6.8 Closing Address

Dr. Jonathan Lomas, Executive Director, Canadian Health Services Research Foundation

The Canadian Health Services Research Foundation (CHSRF) promotes and funds management and policy research in health services and nursing to increase the quality, relevance and usefulness of this research for health-system policy makers and managers. The Foundation works with these health-system decision makers to support and enhance their use of research evidence when addressing health management and policy challenges. Jonathan Lomas' main interest is in the impact and transfer of evidence for decision making. In Canada, he has been a consultant to national and provincial governments, as well as providing research and advice to various non-governmental organizations, task forces, and inquires.

If Knowledge Translation is the Answer, What's the Problem?

Dr. Lomas used two examples, the SCIENTIFIC BASIS OF BASEBALL, and the story of Children's Hospital of Eastern Ontario, by way of illustrating the uneasy relationship between expert researchers and the broader community. With respect to this relationship, he described KT strategies used by the research community as having passed through four eras: PASSIVE, PUSH, PULL, and PARTNER. Until the 1960s KT was PASSIVE, with diffusion of information through journals. Beginning the 1970s there was a PUSH toward active dissemination (e.g., practice guidelines). From the 1990s there has been a PULL to create demand (e.g., contract research). Finally, since 2000, a PARTNER era has emerged wherein KT is thought of in terms of linkage and exchange (e.g., joint approach to research). It was noted that the two best predictors of research use by practitioners are that they already believed the research findings before you told them, and that they were involved in the research from the start. In the move from PUSH to PARTNER, the current view of research as a product and of decision-making as an event is shifting to a view that both research and decision-making are processes. Some implications of this shift require attention to dissemination and receptor capacity; to the ongoing interaction between the 'linkage and exchange' processes; and issues of knowledge brokers or boundary spanners. KT is like a contact sport about relationship-building involving all aspects of the research enterprise: (a) priority-setting, (b) research design and conduct, (c) results interpretation, (d) synthesis of findings, (e) formatting for communication, (f) vehicles for and sources of results communication, (g) receptor capacity, (h) identifying champions and brokers, and (i) clarifying shortcomings and impact.

Dr. Lomas described “Listening for Direction: A National Consultation on Health Services and Policy Issues”, a partnership of five national organizations involved with health service research. The aim is working together to identify health system priorities to inform program directions and decisions is to provide a more coordinated response to the needs of policy makers and managers for health services research and reduce the consultation burden. A participatory priority-setting model has been developed that emphasizes the importance of involving stakeholders from the start through: (a) environmental scan, (b) identification of stakeholders to consult, (c) consultation and validation of priority issues, and (d) identification and validation of priority research themes.

Communicating research findings was put into the context of the lexical difficulty of various sources of information, by pointing to the importance of receptive capacity of users/stakeholders. Dr. Lomas also noted that the ‘science of synthesis’ of research for practitioner use is under-developed. He pointed out that synthesis is a contextualizing process. The ‘unit of transfer’ is not the single study, but instead a theme-based synthesis, which responds to user needs. This synthesis is as much an art as a science. He suggested several pre-requisites for ethical application of research by the users: (a) individual skills of professionals in acquiring and appraising research, (b) structures for acquiring, appraising and adapting research for use by the organization, and (c) processes for applying research to the organization’s operation. Contemplating the role of knowledge brokers, Lomas quoted Ferlie et al.⁶ “the development of hybrid researcher-practitioner roles (rather than the reliance on external ‘scientists’) may help such as the development of mechanisms to promote active boundary spanning, dialogue and joint learning is important.” Some CHSRF approaches to operating under a ‘Linkage and Exchange’ assumption include: (a) merit rather than peer review in priority-setting, (b) requiring all applicants to have decision-maker partners in design, conduct and results interpretation, (c) development of an explicit policy synthesis program, (d) plain-language workshops, knowledge broker support and training, and theme-based knowledge networks to aid communication, and (e) a self-assessment tool for receptor capacity.

Challenges identified for CIHR were: (a) to make KT respected and rewarded in universities, (b) to avoid duplication and complement pre-existing organizations and initiatives in KT, (c) to find common ground for KT across the four pillars of CIHR, (d) to differentiate roles for Institutes versus “CIHR central”, and (e) to ‘split’ rather than ‘lump’ audiences. Lomas closed by pointing out the potential power of research based on scientific demands for evidence of fact and provision of criteria to test the evidence.

6.9 Knowledge Translation: Six Themes for Answers and Actions

⁶ Ferlie et al. (2000) ;5(2):101) JHSRP

Workshop participants actively engaged in small group discussions. From an analysis and synthesis of participants' ideas six main themes emerged. These themes are summarized below. See Appendix D for further details.

1. Valuing Knowledge Translation – How do we get employers, academics, institutions and others to value KT and support its realization? What is the currency?
2. Promoting the Flow – How can we promote, support and ensure the multidirectional flow of information and knowledge among researchers, service providers, policy decision-makers, volunteer organizations, other consumers, and the public? What are the barriers, opportunities, strategies?
3. Giving Voice to the End-User – How do we meaningfully involving the public, the community and the consumer in setting research priorities?
4. Brokering the Transfer of Knowledge – Who's to do the brokering? What is it that's brokered? How is brokering to be done?
5. Measuring and Evaluating Knowledge Translation – How do we know when we got it? What difference does it make?
6. Checks and Balances – How do we control for conflict of interest?

7.0 PARTICIPANT EVALUATION

Overall, participants who completed an evaluation form rated their satisfaction with the Workshop as 3.8 on a 5-point scale. On average, participants were most satisfied with the extent to which they were able to gain a national perspective on KT (3.9/5). Participants were least satisfied with information that would assist them to determine the direction of knowledge translation in the next decade (3.1/5). Participants expected to exchange more strategies to enhance KT in their own research. The development of a KT "tool kit" designed for researchers and various end users of research was seen to be valuable strategy that might be undertaken by the CIHR. Additional comments by participants suggest that additional workshops are needed to refine and expand the understanding of KT and to further develop strategies to ensure that KT becomes entrenched in all programs of research.

8.0 FINAL COMMENTS

There is no doubt that knowledge translation is a complex process with unknown impact on the health and well-being of society. While ideas for action generated during the Workshop create an opportunity to expand and further develop the concept of knowledge translation, the complexity of the concept may preclude perfect understanding of the concept for some time. For the time being, Workshops such as this one have their strength in the capacity to bring together

partners from many disciplines and sectors to address the broader issues associated with knowledge translation. At the same time, this knowledge translation workshop has created and fostered opportunities to develop relationships among experts and research trainees to further build interest and capacity in the area of knowledge translation.

The vision of the Canadian Institutes of Health Research (CIHR) is to create new knowledge and *translate* it into "improved health for Canadians, more effective services and products and a strengthened Canadian health care system"⁷. The results of this Workshop demonstrate that IHDCYH is working in concert with the CIHR to make certain that knowledge translation is understood and exploited to the fullest extent to improve the health and well-being of Canadians.

⁷ Canadian Institutes of Health Research Act, C-13 (2002).

APPENDIX A - Planning Committee Members

Dawn Walker

President & CEO,
Canadian Institute of Child Health

Karen Benzies

Assistant Professor, Faculty of Nursing
University of Calgary

Ted Weiden

Director, Centre for Social Work
Research and Development,
Faculty of Social Work
University of Calgary

Jean Lafrance

Associate Professor and Division Head
Faculty of Social Work,
Edmonton Division
University of Calgary

Karen Kidder

Director of Research
Canadian Institute of Child Health

Sonya Corkum

Vice President
Knowledge Translation & Partnerships
Canadian Institutes of Health Research

Claire Fortier

Vice President and
Chief Stewardship Officer
The Hospital For Sick Children
Foundation

Elizabeth Dickson

Senior Advisor, Policy
Canadian Institutes of Health Research

Nicola McDermott

Assistant Director
Institute of Human Development, Child
and Youth Health
Canadian Institutes of Health Research

Elaine Orrbine

Chief Executive Officer
Canadian Association of Paediatric
Health Centres (CAPHC)

Francois Weldon

Human Resources Development
Canada

Maureen Van Dreumel

Knowledge Exchange Coordinator,
Applied Research Branch, Strategic
Policy
Human Resources Development
Canada

David Mowat

Director General
Health Canada

Appendix B - Student Expectations of the KT Workshop

Research trainees/students want to understand the following:

1. The CIHR perspective on KT
 - a. How to build KT capacity
 - b. Mentoring as part of capacity building
 - c. How to develop mentorship capacity
2. Tools and processes to facilitate KT
 - a. Identify producers and consumers of knowledge
 - b. Understand how stakeholders participate
 - c. How to make "connections"
 - i. Funding to generate this process
 - ii. Messengers/translators at the table with politicians
3. How to change the "currency" of research from publications
4. Students want to participate in identifying barriers to KT
 - a. Define barriers
 - i. Policy to practice
 - ii. User to population/group
 - iii. Basic science to clinical
 - b. Identify and "get rid" of old MRC barriers
 - c. Identify barriers at the user end
 - i. Population level
 - ii. Group level
 - iii. Individual level
 - d. How to open channels from the public back to researchers.
5. Understand the partnership process and new product development
 - a. Define partnerships (corporate, stakeholders)
 - b. Participation /role of decision-makers
 - c. Process may be different for each of the 4 pillars
 - d. Obtain a list of partnership opportunities within CIHR
6. Knowledge and evaluation of KT
 - a. When should knowledge be transferred?
 - b. To Whom It May Concern: Do we really want to transfer "everything"?
 - c. How to bring knowledge to where people will use it.

APPENDIX C - KNOWLEDGE TRANSLATION WORKSHOP PROGRAM

Thursday, June 6

- 3:00 – 5:00pm **Student Orientation**, Professional Faculties Building 1297 (students only).
- 6:00 – 7:00pm Social, University Club
- 7:00 – 9:00pm Dinner: University Club
Welcome & Introductions: Dr. James Frideres, University of Calgary; Ms. Sherry Thompson, Alberta Children's Services; Ms. Dawn Walker, Canadian Institute of Child Health
Presentation: Dr. John Challis, Scientific Director, the Institute of Human Development, Child and Youth Health

Friday, June 7

- 8:30 – 9:00am **Welcome and Introductions**. Rozsa Centre.
- 9:00 – 9:45am CIHR KT Presentation – Dr. Elizabeth Dickson, Senior Policy Advisor, Director of Knowledge Translation, CIHR
(Based on CIHR KT Framework – discussing how, why, where it is going – commenting on opportunities, challenges and gaps)
- 9:45 – 10:45am **Reaction Panel**
Dr. Martin Pusic, Evidence Transfer in Child Health Research Unit, Centre For Community Child Health Research, BC.
Dr. Réjean Landry, Professor in the Department of Political Science, University of Laval
Dr. Claude Roy, Department of Pediatrics, Hôpital Ste. Justine
Dr. Serge Carriere, Scientific Director, Servier Canada
- 10:45 – 11:00am Break (provided on site)
- 11:00 – 12:00pm **Small Group Discussions**
- What is your understanding of KT in the context of your work/discipline?
 - How important is KT in the context of your work?
 - What do you want to be able to learn in this workshop - to apply to your work?
- 12:00 – 1:00pm Lunch (provided on site)

- 1:00 – 2:00pm Re-Cap. Ms. Dawn Walker.
- 2:00 – 3:00pm **Panel on What is Working in KT and Why**
Dr. Ray DeV. Peters, Professor in the Department of Psychology, Queen's University
Dr. Terry Klassen, Chair of Pediatrics, University of Alberta
Dr. Linda Nosbush, Understanding the Early Years, Prince Albert
Ms. Dawn Walker, Executive Director, Canadian Institute of Child Health
- 3:00 – 4:00pm **Small Group Discussions**
- 4:00 – 5:00pm Re-cap. Ms. Dawn Walker

Saturday, June 8

- 9:00 – 9:30am Motivational introduction to the day, focused on what happened Friday and where we are going.
Ms. Sonya Corkum, CIHR.
- 9:30 – 10:30am **Small Group Discussions**
- 10:30 – 11:00pm Re-cap. Ms. Dawn Walker.
- 11:00 – 12:00pm **Student Presentation**
- 12:00 – 1:00pm Lunch (provided on site)
- 1:00 – 2:00pm Speaker Wrap Up
Dr. Jonathan Lomas, Executive Director, Canadian Health Services Research Foundation
- 2:00 – 3:00pm Student debriefing. Rosza Centre. (Students only)

Acknowledgements:

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APPENDIX D - SMALL GROUP DISCUSSIONS

VALUING KNOWLEDGE TRANSLATION - How do we get employers, academics, institutions and others to value KT and support its realization? What is the currency?

- KT activities need to be considered more directly by universities within the promotional path.
- Teaching is not valued enough in university promotional considerations, yet teaching is fundamental Knowledge Translation.
- Resources are needed to ensure KT activities in institutions.
- KT activities should not be translated to commercialization.
- Universities should be surveyed on the following question: "What place does KT activity hold for tenure of faculty?"
- KT activity needs to be funded at the university level, rather than in individual departments.
- It is essential that KT be part of research team activities.
- Change how universities perceive KT activity:
- Consider a university or CIHR KT award program.
- Incorporate KT activity as part of tenure requirements.
- The value of KT needs to be recognized and articulated by researchers, employers and institutions.
- Public awareness of KT and the value of it needs to be put into place.
- KT is cheap but not free: funding is essential
- Three components of funding are:
- What works in KT as an enterprise?
- KT supports in the form of a web site, resource database, researcher accessibility (a CIHR responsibility?).
- To create linkages for KT to occur – knowledge brokers.

PROMOTING THE FLOW – How can we promote, support and ensure the multidirectional flow of information and knowledge among researchers, service providers, policy decision-makers, volunteer organizations, other consumers, and the public? What are the barriers, opportunities, strategies?

- Translation of knowledge will only occur effectively when there is a flow of knowledge in many directions. Knowledge brokers would be able to assist in this process.
- In order for KT to be successful, we need to ask:
 - How do we to influence behavioral change through KT?
 - How do we to evaluate change as a result of KT?
 - What are the barriers to change in relation to KT from multiple perspectives?
- To decrease barriers from the researchers' perspective, CIHR should continue to sponsor workshops around the subject of KT.
- Funding is needed from CIHR and other funders to support KT.

- The knowledge that is in the research community needs not only to be made accessible to the public but specifically brought to the public's attention.

GIVING VOICE TO THE END-USER – How do we meaningfully involving the public, the community and the consumer in setting research priorities?

- A mechanism needs to be put into place where by feedback can be obtained from the public for researchers.
- In order for KT to be effective, researchers first need to understand what it is the public and other knowledge users want and need to receive.
- KT needs to be recognized as a multi-way exchange; the end users' input is as relevant as the researchers'.
- The applicability and feasibility of public input needs to be considered.
- We must be clear about who the community is. Elected officials represent public interest, which is not always indicative of public opinion.
- Definition of the researcher's role in transferring public needs, opinion and pressure into research is required.

MEASURING AND EVALUATING KNOWLEDGE TRANSLATION – How do we know when we have it right? What difference does it make?

- It is essential to first understand the process of KT. What is involved?
- Initial focus should be on short-term solutions, generating increased understanding and knowledge of the KT process.
- The strategic framework for evaluating KT process should be on at least three dimensions:
 - Short-term/ Medium-term/ Long-term, Temporal Dimension
 - Program/ Organizational/ Health Issue, Process Dimension:
 - Knowledge, Attitude and Behavior, Action Dimension
- CIHR should undertake to support:
 - KT evaluations.
 - Enhancement for research abstracts to have relevance for the public – positives and negatives findings both need to be published.
 - The establishment of best practice guidelines, "kits" for:
 - investigative groups
 - peer groups
 - public groups
- The implementation of a process to provide a "stamp of approval" around research findings, perhaps through a CIHR knowledge web site
- Facilitate brokerage and evaluate the success of outcomes.
- CIHR needs to recognize and acknowledge:
 - best practices in KT.
 - maintenance of competence in KT.
 - profiles of KT effectiveness.

BROKERING THE TRANSFER OF KNOWLEDGE – Who's to do the brokering?
What is it that's brokered? How is brokering to be done?

- There may be an unfair expectation on researchers to be effective translators of knowledge. The skills that make you a good researcher are not always conducive to effective communication, nor should this be expected.
- KT is not new – historically, social movements have been driven by the uptake of intermediaries, usually the voluntary sector. This infrastructure is weaker now than it once was, but can be developed into an effective knowledge brokerage.
- Knowledge brokers are essential, since researchers are not always effective at KT.
- There is a need for knowledge brokers who can translate both upstream and downstream knowledge into usable language for different groups.
- There is a need for different types of brokers e.g., between clinician and researcher; between clinician and public; between public and researcher.
- The knowledge broker bridges, negotiates, facilitates, and synthesizes knowledge.
- The knowledge broker could be an existing network (e.g., Canadian Institute for Child Health) or individual.
- It would be the responsibility of CIHR to monitor and survey these groups with regard to their KT activities and plans.
- CIHR's role in terms of knowledge brokers needs to be defined.
- CIHR could be effective in implementing brokers through the funding programs and community involvement activities.
- Funding is needed from CIHR to help develop an understanding of the process of knowledge brokering, as well as to address problems and issues around this topic.
- Brokerage is a chain, not just a one-way, or even a two-way street – knowledge must be brokered and feedback given from a number of directions in order for KT to be effective.
- Who is doing the brokering right now? There is a need to identify the groups within organizations that are using knowledge well and those who are not, followed by an evaluation of why one group is successful while the other is not.

CHECKS AND BALANCES – How do we control for conflict of interest?

- There is too much risk of bias in appointing the researchers with the task of dealing with policy as well as research. Research should not be tied to the researcher's agenda.
- The profit motive introduces a KT bias within the private sector.
- The public sector does not want to publish negative results.

- Symposia and publication of negative results is needed e.g., establish an accessible database for negative findings to avoid unnecessarily having to re-do research.
- Unfortunately, research is too often directed toward exploitable, 'sexy' topics – these are more marketable.

