KNOWLEDGE TRANSFER PROJECT

By

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Executive Summary

 The internship was performed at the Division of Medical Education (DME); the author worked as a Research Assistant on The Knowledge/Transfer/Exchange Project. which is within the Faculty of Medicine. Canadian Institute of Health Research 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" (Canadian Institutes of Health Research, 2005). Current literature shows knowledge translation and knowledge transfer refer to the same process of spreading information; however knowledge translation is used in health care. The terms knowledge transfer and knowledge translation are used interchangeably in certain instances in this report.

The internship started January 3, 2007 and was completed April 4, 2007. The main responsibilities consisted of searching online databases for research papers on Knowledge Translation (KT) and reviewing the articles for writing reports. The author's key responsibilities were creating a document analysis concerning issues on how to address knowledge translation to health professionals in clinical settings, factors influencing KT in organizations, how to effectively convey new health knowledge and research results to the general public, performing a literature review on knowledge translation models and how gender and socio-economic status affects KT activities. The scope of work for the internship was completed and reports were delivered to the Project Coordinator. The reports submitted include the following: Knowledge Translation Strategy Development, Structures Necessary to Support Knowledge Transfer and Related Activities and Strategies to Communicate Research Results to the General Public. Future work on the KT project could focus on updating the reports delivered at the end of the internship with new information. More work could also be done on managing medical knowledge management, and performing research with health professionals to find the KT strategies that work best for them and why. The author obtained a good understanding of KT activities by working on the project.

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1.   Introduction

The main component of the internship was ongoing report writing on identifying knowledge translation (KT) needs of specific audiences, summarizing effective knowledge translation strategies and collaborating with the project team to develop a comprehensive report on knowledge translation. Canadian Institute of Health Research 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" (Canadian Institutes of Health Research, 2005). Knowledge translation and knowledge transfer refer to the same process of spreading information; these terms are used interchangeably in some cases in this report.

The author performed online library searches to obtain research resources on knowledge transfer. The list of research articles obtained were reviewed, assessed and synthesized to create a comprehensive literature review on knowledge transfer. The deliverables for the KT project were reports prepared by the author pertaining to issues on addressing knowledge translation to health professionals in clinical settings, frameworks on knowledge Translation, how gender and socio-economic status impacts KT, communicating research results to the general public and structures necessary to support KT related activities. Research findings indicate that there is a gap between actual clinical practice and known evidence. Publishing research findings in peer-reviewed journals has been a preferred channel of disseminating research findings, but clinicians have limited time to read the information. More than 400,000 articles are added to biomedical literature each year, and as a result health professionals are overburdened with reading materials (Davis, Ciurea, Flanagan, Perrier, & Ontario Guidelines Committee., 2004). Information from the deliverables will support dissemination and use of research findings to change practice, inform decision-making processes and ultimately improve the well being of the general public. Knowledge obtained from the Health Informatics program assisted the author to analyse and understand the various health research papers used in the synthesis of the literature.

2.   Description of the organization

The Division of Medical Education is within the faculty of Medicine at Dalhousie University. The Division supports the undergraduate and postgraduate continuing education as well as research. The Division supports research and medical education in the following areas:

- Faculty Development Program
- Medical Informatics Program
- Communication Skills Program
- Medical Humanities Program

The faculty development program coordinates and provides faculty with programs in leadership skills, themes that guide teaching and learning initiatives, professional, academic and personal development in the Faculty of Medicine. These programs are put in place based on the response to changes that occur in healthcare. The key areas in the faculty development program are in social accountability, cultural diversity, interprofessional education and problem-based learning. In addition, the Division also partners with local, national and international organizations to facilitate knowledge transfer to achieve faculty development goals. The sharing of knowledge assists researchers in the field of medical education to determine issues affecting the education of physicians and other health professionals. The Division supports the Medical Informatics program as well. The International Health Office at Dalhousie University also partners with the Division to improve medical education curriculum in Turkey and Tanzania.

The communication skills program provides communication skills training on patient-physician interaction to medical students. In addition to the communication skills program, the division conducts research about doctor-patient communication. Learning programs such as the Case-Oriented Problem-Stimulated Program (COPS), Distributed Learning and Information Technology instruction programs are supported as well to help future physicians adapt to the growth of medical knowledge and the use of Information Technology. The Distributed Learning program provides videoconferencing and self-

directed learning through e-learning programs. The Continuing Medication Education (CME) special program focuses on designing seminars to train faculty and clinicians to use video conferencing to outreach to rural communities. The CME program also provides professional education programs for physicians (Division of Medical Education, 2004).

The Medical Humanities Program supports the humanities in the Dalhousie Medical School. The program places emphasis on achieving a balance between medical sciences and understanding human values. Some of the activities of the Humanities Program include summer research studentships, humanities evenings for student presentations at the faculty club and discussion groups.

3.   Discussion

Health information deals with retrieving and organizing information in a user-friendly format to improve clinical decision-making. Communicating health information to its users is facilitated by the use of Information Technology (IT). Health informatics brings together various disciplines to improve health care; it makes uses new medical knowledge or research results, clinical information systems, decision-support systems, error detection and reduction to advance knowledge.. Knowledge Management is one of the disciplines under Health Informatics and knowledge transfer is one of the components of Knowledge Management. Knowledge Translation (KT) comprises of the stages between the creation of new knowledge and its application to benefit society. KT includes the following: knowledge dissemination, communication, the use of Information Technology, ethical context, knowledge management, knowledge utilization and two-way knowledge exchange between researchers and the users of the knowledge (Canadian Institutes of Health Research, 2005).

The internship involved gathering relevant KT research papers for report writing to guide the implementation of future knowledge translation projects. The internship is about how to make information available at the point of care for health professionals and policy makers for decision-making; the objective of the internship relates to Health Informatics (Child & Family Research Institute, 2006). The author's academic training in Research Methods, Knowledge Management, Health Information Flow and Use as well as Project Management was used to analyse research papers to meet internship goals. How the academic training in Health informatics impacted the author's practical experience is explained briefly in the following section.

First and foremost, the Research Methods course exposed the author to various methods of performing health research and several health information databases for literature searches. Skills obtained from statistics principles reinforced the concepts studied in Research Method. This was necessary to understand the design of health research, data analysis and interpretation of results. Knowledge obtained from this course was applied in analysing and understanding the various health research papers used in the synthesis of the literature review.

Secondly, the use of health information for administrative purposes such as health policy was discussed in the Health information Flow and Use course. Various health delivery systems, ethical issues and legislations were examined as well. Issues discussed on the utilization of health information provided the author with a good knowledge and understanding of the importance of making information available to decision-makers and health professional in a timely way. Information on how health care professionals use health information was essential when selecting appropriate methods from research papers for addressing knowledge translation in clinical settings.

Thirdly, the course in Knowledge Management analysed issues regarding challenges experienced in developing knowledge management solutions in health care organizations. This course assisted the author to identify appropriate methods of addressing knowledge translation issues in health care organizations from research papers. Project management

skills were also applied in breaking down the scope of work into manageable sections as well as setting deadlines for deliverables. The author gained a good understanding of KT activities and had the opportunity to apply some of the skills from the Health Informatics program. The internship was a valuable learning experience for the author.

4. Work performed by the Intern
4.1 Description of Responsibilities

The author's main responsibilities consisted of researching and collecting published research work, organizing and managing published articles and reports. The author performed library searches and classified publications on knowledge translation based on the relevance to the project. The author compiled a broad range of research articles from a variety of online resources. The author's key responsibilities were creating a document analysis that meets the following objectives:

- Addressing KT translation needs for health professionals in clinical settings.
- Conducting a literature review on effective KT tools and structures necessary to support KT activities.
- Collaborating with the principal investigators, the Project Coordinator and stakeholders to develop a comprehensive report outlining appropriate KT strategies for specific audiences.

The author was also required to attend seminars on knowledge translation at the IWK Health Centre to gain more ideas and knowledge on KT in clinical settings. Attending meetings with project stakeholders and the Project Coordinator was essential to clarify the scope of work as the project progressed. Secondary responsibilities of the position include managing references using RefWorks, an application program for managing references. Microsoft Project planning software was also used to create project plans and to set deadlines for completing

deliverables. Preparing materials and reminding participants for teleconferences are other responsibilities taken on by the author.

4.2   Description of Work Performed and Achievements

The internship was about providing a literature review on how research results and new health knowledge can be applied in real-world situations. The author reviewed literature on knowledge translation to develop a knowledge base to guide future knowledge dissemination projects. Relevant research papers from various online health journals were used to guide the report. The key component of working on the literature review was finding relevant sources and synthesizing the information. The various topics in the scope of work were analyzed to select various concepts or variants of terms to use in the literature search. Categorizing the concepts assisted with developing a search plan for the literature searches. The research papers obtained were analyzed critically to identify the sources that are useful by using the following guideline:

    i.   Skimming through the abstract to get familiar with the material

    ii.   Locating the key points and key themes in the research article

    iii.   Writing the report (Brusaw, Alred, & Oliu, 1993)

Examples of keywords used are knowledge transfer, knowledge translation and knowledge transfer and exchange. The author made use of the Dalhousie University Library collection to find relevant published work on knowledge translation. The research papers obtained from the literature search were read, analyzed and synthesized for writing the various project reports. The objective of the literature review was to contribute and expand the knowledge base of the project. Critical analysis skills were applied to identify appropriate reports and research papers. The citations and bibliography was managed using RefWorks on-line application program. The internship was primarily based on report writing and includes the following:

- Gaining an understanding of the scope of the work

- Working with current knowledge translation documents relating to future strategic directions.
- Developing a knowledge base that includes the following:
    i. Addressing knowledge translation to health professionals in clinical settings.
    ii. A literature review on KT frameworks
    iii. Providing an update of the literature on how gender and socio-economic status impact KT
    iv. Structures essential to support KT activities.
    v. Strategies to communicate research results to the general public.

The reports submitted at the end of the internship are listed as follows:

i. Knowledge Translation Strategy Development
ii. Structures Necessary to Support Knowledge Transfer and Related Activities
iii. Strategies to Communicate Research Results to the General Public
iv. Summary of Knowledge Translation Models
v. Literature Review on the Impact of Gender and Socio-economic status on Knowledge Transfer

The main points of the deliverables submitted at the end of the internship are summarized in the subsequent sections.

4.3   Summary of Reports

(ii) Knowledge Translation Strategy Development

The Knowledge Translation Strategy Development report addressed effective strategies to address knowledge translation for health professionals in clinical settings. Some of the strategies presented include the use of clinical practice guidelines, electronic methods, the use of the media, clinician behaviour change and communities of practice. Barriers to knowledge translation could be removed through training and educational outreach programs to improve the use of research findings (Grimshaw, Eccles, & Walker, 2002).

(ii) Structures Necessary to Support Knowledge Transfer and Related Activities

Factors that influence KT activities in organizations include the following: availability of resources and funding, strategic planning, organizational readiness, resistance to change, the practice environment, the potential adopters, characteristics of the innovation or new knowledge, KT strategies, adoption, intermediaries, outcomes and sustainability. This report concentrates on how these factors listed above influence effective knowledge transfer. Assessing and removing theses barriers as well as providing adequate resources may sustain KT implementation processes in organizations (Logan & Graham, 1998, Barwick, Melanie A., et al., 2005).

(iii) Strategies to Communicate Research Results to the General Public

Transferring knowledge to the general public requires multifaceted approaches to ensure that various audiences are reached. Methods to communicate research results to the general public discussed in this report include newsletters and pamphlets, social activities, health networks, focus groups, social marketing, partnerships and outreach programs. The strategies identified in this report could be used to support knowledge translation programs to assist with the dissemination of research results and new health knowledge to the general public (Gowdy, January, 2006; Racher & Annis, 2005).

(iv) Summary of Knowledge Translation Models

Some of the knowledge translation (KT) models the author discovered in research papers include the following: The Ottawa Model of research use by Graham and Logan 1998 (Logan & Graham, 1998), the CIHR knowledge cycle (Canadian Institutes of Health Research, 2005), Research Utilization Model in Policy (Hanney, Gonzalez-Block, Buxton, & Kogan, 2003), and the Canadian Stroke Network Draft strategic plan 2004(Canadian Stroke Network, 2004). However, this report selects and summarizes three models in detail that applies to the KT Project. Key information obtained from the literature indicates that KT it is context specific and there is no single model of knowledge translation that fits all of its activities.

(v) Literature Review on the Impact of Gender and Socio-economic Status on Knowledge Transfer

This report highlights how gender and socio-economic status influences knowledge transfer. If KT programs are to be effective then some of the programs put in place should be gender sensitive. Gender (Keleher, 2004), the roles and responsibilities of women and men in the family and community influences causes, consequences and management of disease and ill-health (Doyal, 2001). Interventions developed to improve the well-being of individuals and health services have to focus on the differences between men and women. Health policies and programs that take into account differential biological differences between men and women, income, social vulnerability to health risks and unequal power relationships between the sexes into account tend to be more successful (Priroska et al., 2007). Addressing gender issues in knowledge transfer can be achieved by developing programs that deal with gender inequities and also strengthens individuals and communities (Priroska et al., 2007).

5.   Challenges and Solutions

The internship was centred on performing literature searches and applying critical analysis principles to classify research papers according to their relevance. One of the challenges experienced by the author is ensuring meanings and information from the research papers were preserved in the project reports. Another challenge experienced by the author is the managing of the various research articles obtained from online databases. Health Informatics focuses on health information management with Information Technology as its enabler, so the RefWorks application program was used to manage the citations electronically. RefWorks is a web-based bibliography manager that allows users to create a personal database of references with unlimited online access. The application also allows the sharing of references with colleagues.

6.   Conclusion

The scope of work for the KT project primarily involved determining the KT needs of target audiences such as health professionals and the general public as well as conducting a literature review on effective KT tools and strategies. KT research papers and resources from online journals and databases were reviewed, analyzed and synthesized to meet the objectives of the scope of work. Gaining an understanding of the scope of the work and working with current knowledge transfer research documents assisted with the creation of a knowledge base that addresses issues on effective knowledge transfer. The author achieved the internship objectives by presenting the required reports. The reports are listed as follows:

a) Knowledge Translation Strategy Development
b) Structures Necessary to Support Knowledge Transfer and Related Activities
c) Strategies to Communicate Research Results to the General Public
d) Summary of Knowledge Translation Models
e) Literature Review on the Impact of Gender and Socio-economic Status on Knowledge Transfer

These reports discuss strategies that can be applied to close the clinical care gap in healthcare organizations as well as methods to inform the general public on new health knowledge. From the literature review, factors such as the practice environment, strategic planning and the availability of funding affect KT implementation processes. Transferring knowledge to the general public requires multifaceted approaches to ensure that various audiences are reached. Some of the methods that can be used to communicate research results to the general public include newsletters and pamphlets, social activities, health networks, focus groups, social marketing, partnerships and outreach programs. Gender and socio-economic status also impact KT, therefore gender specific programs should be put in place if KT messages are to be effective (Doyal, 2001).

7. Recommendations

The reports presented at the end of the internship could be updated with reviewed information from new research papers on KT. Future work on knowledge translation could focus on the following:

- Medical knowledge Management in Clinical settings.
- Research with health professionals to find out which knowledge translation strategies work best for them and why.
- The use of Information Technology enabled knowledge translation for health professionals and decision-makers.

Managing health care knowledge and making it available at the point of care for health professionals and health-policy makers contributes to the improvement of health care delivery.

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