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Building Capacity in Applied Health and Nursing Services Research in Canada: A Seven Year Journey

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Healthcare Policy/Politiques de Santé seeks to bridge the worlds of research and decision-making by presenting research, analysis and information that speak to both audiences. Accordingly, our manuscript review and editorial processes include researchers and decision-makers.

We publish original scholarly and research papers that support health policy development and decision-making in spheres ranging from governance, organization and service delivery to financing, funding and resource allocation. The journal welcomes submissions from researchers across a broad spectrum of disciplines in health sciences, social sciences, management and the humanities and from interdisciplinary research teams. We encourage submissions from decision-makers or researcher–decision-maker collaborations that address knowledge application and exchange.

While *Healthcare Policy/Politiques de Santé* encourages submissions that are theoretically grounded and methodologically innovative, we emphasize applied research rather than theoretical work and methods development. The journal maintains a distinctly Canadian flavour by focusing on Canadian health services and policy issues. We also publish research and analysis involving international comparisons or set in other jurisdictions that are relevant to the Canadian context.

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Healthcare Policy/Politiques de Santé cherche à rapprocher le monde de la recherche et celui des décideurs en présentant des travaux de recherche, des analyses et des renseignements qui s'adressent aux deux auditoires. Ainsi donc, nos processus rédactionnel et d'examen des manuscrits font intervenir à la fois des chercheurs et des décideurs.

Nous publions des articles savants et des rapports de recherche qui appuient l'élaboration de politiques et le processus décisionnel dans le domaine de la santé et qui abordent des aspects aussi variés que la gouvernance, l'organisation et la prestation des services, le financement et la répartition des ressources. La revue accueille favorablement les articles rédigés par des chercheurs provenant d'un large éventail de disciplines dans les sciences de la santé, les sciences sociales et la gestion, et par des équipes de recherche interdisciplinaires. Nous invitons également les décideurs ou les membres d'équipes formées de chercheurs et de décideurs à nous envoyer des articles qui traitent de l'échange et de l'application des connaissances.

Bien que *Healthcare Policy/Politiques de Santé* encourage l'envoi d'articles ayant un solide fondement théorique et innovateurs sur le plan méthodologique, nous privilégions la recherche appliquée plutôt que les travaux théoriques et l'élaboration de méthodes. La revue veut maintenir une saveur distinctement canadienne en mettant l'accent sur les questions liées aux services et aux politiques de santé au Canada. Nous publions aussi des travaux de recherche et des analyses présentant des comparaisons internationales qui sont pertinentes pour le contexte canadien.

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GUEST EDITORIAL

The Regional Training Centre: If We Build It [Well], They Will Come

True confessions of a guest editor: I'm thinking a lot about house plans these days, with building of my own about to begin. So it's no surprise that the analogy of a blueprint springs to mind when I describe my approach to this special supplement of *Healthcare Policy/Politiques de Santé*.

When you have a blueprint, you have an official, stamped model of what you expect at the end of the day. The builders and tradespeople see the blueprint as the guiding principle that explains exactly how they are to build this house. On the other hand, it doesn't necessarily tell them how many nails to put into a particular piece of lumber or the type of countertop to put in the kitchen; nor does it prevent the house builder from making slight (or even major) changes along the way. When things take shape in "real life" as opposed to the static blueprint, the totality can be surprising, and at times may require rejigging to meet the needs of real people in real places.

And so the Regional Training Centre (RTC) undertaking bears a resemblance to blueprints and real houses. The Canadian Health Services Research Foundation (CHSRF) and the Canadian Institutes of Health Research (CIHR) took on the basic blueprinting task when they envisioned the RTCs as a new approach to increasing capacity in applied health and nursing services research in Canada. But training programs, like a house under construction, are organic, not static. The "blueprint" gives guidance within certain constraints. But the actual building process must accommodate changes to meet needs not anticipated at the outset.

This special issue of the journal was created through the efforts of a special group of people – those who have been involved with the RTCs at the outset as funders, along the way as builders and even those who inhabited the "house" – graduate students, faculty, decision-makers. As a reader, you will gain some insight into how the RTCs started, how they evolved, what worked and where, what evolution has taken place from the original blueprint and how RTCs can continue to evolve and thrive in the future. In some sense, this initiative is a quality improvement journey, getting better along the way with continuous input from those affected by the RTCs. In another sense, it resembles our Canadian healthcare system itself, which "grew" from various provincial experiments and continues to evolve as a living organism. That's the beauty of the RTCs – four different groups (Centre FERASI, Atlantic Regional Training

Centre, Ontario Training Centre and Western Regional Training Centre), all with similar foundations, all meeting the needs within different contexts, yet all able to interact and learn from one another.

This special issue on health services research training programs was specifically designed as a forum for essays and commentaries that address the following objectives:

- summarize the historical development and implementation of the Regional Training Centres and how each responded in unique ways to the common program elements outlined in the original call for grant applications;
- profile the current RTCs for a varied readership by describing the programs from multiple perspectives;
- describe leading or promising practices for training researchers in applied health services, and transfer lessons learned to international and national audiences – in effect, to create a "how-to" guide for designing similar programs;
- summarize the evaluation results from the fourth-year review of each RTC;
- serve as a marketing, promotion, accountability and positioning tool for regional funders, decision-maker supporters and senior university administrators.

When I spoke with the contributors who were setting out to write this supplement, my "blueprint" concept elicited the response that CHSRF/CIHR provided somewhat of a plan, or rather foundational principles, for the RTCs, but these principles produced four very different houses – or, perhaps more aptly, "neighbourhood complexes." The actual process of realization turned out to be very much like research itself. Researchers "operationalize the construct" by asking, for example: "What specific questions shall we ask in our survey?" "What fields in a chart audit or an administrative database are we going to analyze?" In operationalizing the founding principles, the RTC leaders produced different, multiple houses, all structured with a similar foundation, yet each adapted to regionally sensitive contexts.

A note of caution to the reader: You can't expect to understand the whole house by seeing just one room. I encourage you, therefore, to read the entire issue – wander into each of the rooms, and experience the richness of the whole house. The whole is much greater than the sum of its parts!

Conrad starts the tour with background on the "blueprint" phase – the vision of creating capacity in applied health and nursing services research in Canada. Brachman et al. let us peek into the framework during construction, while Dallaire et al. describe the interdisciplinary structure built into it. Then we get insight into the plumbing and wiring – how do you merge the two worlds of decision-maker and academic? Sheps et al., D'Amour et al. and DiCenso et al. discuss the challenges and successes of designing a program that makes training within these two worlds experiential and real. Taking a step back, so that we can view the house from a distance, Davey and Altman

describe the fourth-year evaluation of the RTCs. The ultimate question, however, is the satisfaction of the occupants: Are they happy living in the house? Rathwell et al. and Morrison et al. give us the perspectives of decision-makers and graduate students, respectively. And what's the future of this house? Can it stand on its own? Can the occupants maintain it, pay the taxes? Montelpare et al. explore the sustainability of RTCs into the future. Finally, Timmons summarizes the lessons learned.

I would like to thank the contributors to this special issue. First, of course, the writers of the papers – they took on the challenge, despite very tight timelines, of documenting the RTC house-building enterprise for the benefit of regional funders, decision-maker supporters and university academics and administrators. Secondly, thanks go to the two people on the Advisory Group who helped review the articles – Lillian Bayne, BC Regional Officer, CHSRF and President-Elect, CAHSPR; and Raynald Pineault, Direction de santé publique de Montréal, Institut national de santé publique du Québec. Their hard work and thoughtful comments contributed greatly to the quality of this supplement. As well, Rebecca Hart, Managing Editor of Longwoods Publishing, was an invaluable "right hand" and helped me immensely in my role as guest editor. Finally, I would like to thank the funders, CHSRF and CIHR, for their vision. My comment to them would be, "Yes, you drew up a great blueprint, and the builders did a fine job of making your vision a reality." Thanks also to my husband, for tolerating my extra workload despite the fact that we are "living the experience" of the blueprint/house-building analogy.

Now it's your turn to walk through the RTC house. Enjoy the issue!

PATRICIA J. MARTENS, PHD

Le Centre régional de formation : si vous le construisez (bien), ils viendront

Les confessions d'une collaboratrice spéciale. Je pense beaucoup aux plans de ma maison ces temps-ci puisque nous entreprendrons bientôt sa construction. Il n'est donc pas surprenant que la comparaison avec un plan me vienne à l'esprit lorsque je tente de décrire ma contribution à ce supplément spécial de *Healthcare Policy/Politiques de Santé*.

Avec un plan, vous avez un modèle officiel et approuvé de ce que vous vous atten-

dez à obtenir à la fin de la journée. Les constructeurs et les ouvriers considèrent le plan comme le principe directeur qui explique précisément comment construire la maison. Par contre, il ne leur dit pas nécessairement combien de clous seront requis pour fixer tel montant ou le type de comptoir à installer dans la cuisine. Il n'empêche pas non plus le constructeur d'effectuer de légères (ou d'importantes) modifications en cours de route. Lorsque les choses prennent forme « pour de vrai », à l'opposé du simple dessin du plan, l'ensemble peut être surprenant et il peut parfois nécessiter quelques retouches afin de répondre aux besoins concrets des gens et du milieu.

Donc, la mise en place d'un Centre régional de formation (CRF) n'est pas sans rappeler les plans et les maisons. La Fondation canadienne de la recherche sur les services de santé (FCRSS) et les Instituts de recherche en santé du Canada (IRSC) ont commencé à dresser un plan des CRF lorsqu'ils ont envisagé ceux-ci comme une nouvelle façon d'accroître les capacités de recherche en services de santé et en soins infirmiers au Canada. Cependant, les programmes de formation, tout comme une maison en construction, sont organiques et non statiques. Le « plan » donne une orientation et certaines contraintes, mais le véritable processus de construction doit permettre d'apporter des modifications afin de répondre à des besoins qui n'avaient pas été prévus d'entrée de jeu.

Cette édition spéciale de la revue a été rendue possible grâce aux efforts d'un groupe particulier de personnes : ceux qui ont participé aux CRF dès le début en tant que fondateurs, puis comme bâtisseurs et même ceux qui ont habité la « maison », c'est-à-dire les étudiants de cycle supérieur, les professeurs et les décideurs. En tant que lecteur, vous découvrirez comment les CRF ont démarré, comment ils ont évolué, ce qui a fonctionné et où, quelles modifications ont été apportées au plan original et comment les CRF peuvent continuer à évoluer et à progresser dans les années à venir. D'une certaine façon, cette initiative constitue une expérience d'amélioration continue de la qualité rendue possible grâce à la contribution de ceux qui sont touchés par les CRF. D'une autre façon, elle ressemble à notre système de santé canadien, qui s'est enrichi grâce à diverses expériences provinciales et qui continue de « grandir » tel un organisme vivant. C'est la beauté des CRF : quatre groupes différents (le Centre FERASI, le Centre régional de formation de l'Atlantique, le Centre de formation de l'Ontario et le Centre régional de formation de l'Ouest) avec des fondations similaires qui répondent à des besoins dans des contextes différents, mais qui sont tout de même capables d'interagir et d'apprendre les uns des autres.

Cette édition spéciale sur les programmes de formation dans le domaine de la recherche en services de santé a été spécialement conçue comme un forum pour les essais et les commentaires traitant des objectifs suivants :

- résumer le développement historique et la mise en œuvre des centres régionaux de formation ainsi que les réponses uniques élaborées pour satisfaire aux éléments de

programme communs énoncés dans l'appel original de demandes de subvention;
- dresser un portrait des CRF actuels pour un lectorat varié en décrivant les programmes selon plusieurs perspectives;
- décrire les principales pratiques ou les pratiques les plus prometteuses pour la formation des chercheurs en services de santé et partager les leçons apprises avec un public national et international; bref, créer un guide pratique sur la conception de programmes semblables;
- résumer les résultats des évaluations de quatrième année de chaque CRF;
- servir d'outil de marketing, de promotion, de responsabilisation et de positionnement pour les bailleurs de fonds régionaux, la clientèle des décideurs et les cadres supérieurs des universités.

Quand j'ai discuté avec les collaborateurs qui s'apprêtaient à rédiger ce supplément, leur réponse à mon concept de « plan » a été que la FCRSS/IRSC fournit en quelque sorte un plan, ou plutôt des principes fondamentaux, pour les CRF. Cependant, ce plan a produit quatre types de maisons. En fait, il serait plus pertinent de parler de quatre types de « quartiers ». Le processus concret de mise en œuvre s'avère être très semblable à celui de la recherche. Les chercheurs « opérationnalisent la construction » en posant des questions comme « Quelles questions précises devrions-nous inclure dans notre sondage? » ou « Quels champs de la vérification des dossiers médicaux ou de la base de données administrative devrions-nous analyser? ». Grâce au processus d'opérationnalisation des principes fondamentaux, les dirigeants des CRF produisent plusieurs maisons différentes, disposant toutes d'une fondation semblable, mais chacune adaptée à des contextes régionaux particuliers.

Il faut ici prévenir le lecteur : vous ne pourrez comprendre le fonctionnement de toute la maison en observant qu'une seule pièce. Je vous encourage donc à lire tous les textes contenus dans cette édition. Visitez chaque pièce et découvrez la richesse de la totalité de la maison. L'ensemble est beaucoup plus grand que la somme de chacun de ses éléments!

Conrad amorce la visite avec de l'information sur la phase de planification : la vision consistant à créer une capacité de recherche en services de santé et en soins infirmiers au Canada. Brachman et coll. nous donnent un aperçu de la charpente pendant la construction, alors que Dallaire et coll. décrivent la structure interdisciplinaire qui y est intégrée. Nous nous tournons ensuite vers la plomberie et l'électricité : comment peut-on fusionner le monde des décideurs et celui des universitaires? Sheps et coll., D'Amour et coll. ainsi que DiCenso et coll. discutent des défis et des réussites associés à la conception d'un programme de formation concret et enrichissant à l'intérieur de ces deux mondes. Nous prenons un peu de recul afin d'observer la maison d'une certaine distance, puis Davey et Altman expliquent les évaluations de quatrième année des CRF. La question ultime concerne, toutefois, la satisfaction des occu-

pants. Est-ce qu'ils sont heureux de vivre dans cette maison? Rathwell et coll. ainsi que Morrison et coll. nous présentent respectivement les points de vue des décideurs et des étudiants de cycle supérieur. Quel est l'avenir de cette maison? Peut-elle se tenir debout d'elle-même? Est-ce que ses occupants peuvent l'entretenir et payer les taxes foncières? Montelpare et coll. se penchent sur la viabilité des CRF dans les années à venir. Enfin, Timmons résume les leçons qui en sont tirées.

J'aimerais remercier tous les collaborateurs de cette édition spéciale. Premièrement, bien entendu, les auteurs de ces articles. Malgré un délai très court, ils ont relevé le défi de documenter l'entreprise de construction d'un CRF au profit des bailleurs de fonds régionaux, de la clientèle des décideurs, des universitaires et des administrateurs. Deuxièmement, merci aux deux membres du groupe consultatif qui ont aidé à évaluer les articles, soit Lillian Bayne, agente régionale pour la C.-B. de la FCRSS et présidente élue de l'ACRSPS, ainsi que Raynald Pineault, de la Direction de santé publique de Montréal et de l'Institut national de santé publique du Québec. Leur travail et leurs commentaires éclairés ont grandement contribué à la qualité de ce supplément. De même, Rebecca Hart, directrice de rédaction de Longwoods Publishing, a assumé la tâche de « bras droit » à la perfection et son aide m'a été précieuse dans mon rôle de collaboratrice spéciale. Finalement, je tiens à remercier les bailleurs de fonds, la FCRSS et l'IRSC, pour leur vision. Je voudrais leur dire qu'ils ont dessiné un excellent plan et que les constructeurs ont accompli du beau travail pour donner vie à leur vision. Merci à mon mari, qui a toléré ma charge de travail supplémentaire, malgré le fait que nous « vivions l'expérience » concrète de la planification et de la construction d'une maison.

C'est maintenant votre tour de visiter la maison des CRF. J'espère que vous apprécierez cette édition!

PATRICIA J. MARTENS, PHD

To Boldly Go: A Partnership Enterprise to Produce Applied Health and Nursing Services Researchers in Canada

Aller de l'avant : un partenariat pour la formation de chercheurs en services de santé et de soins infirmiers au Canada

by PATRICIA CONRAD, PHD, MHSA, MSC
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Abstract

This paper describes the origins of the Regional Training Centres (RTCs) from the perspective of the Canadian Health Services Research Foundation (CHSRF), a national funder of applied health and nursing services research in Canada. The author details the contributions of CHSRF, Canadian Institutes of Health Research (CIHR) and Capacity for Applied and Developmental Research and Evaluation (CADRE) program, as well as an essential feature of the RTCs: their application of the linkage and exchange model (Lomas 2000). The discussion encompasses the RTC program requirements and selection process, as well as the fourth-year review, the aim of which was to assess the early results of the RTCs. The role that CHSRF plays in facilitating the national network of RTCs is highlighted. The author concludes with reflections on what has worked well, what might be done differently and advice to others interested in developing graduate education based on the linkage and exchange model.

Résumé

Cet article décrit les origines des Centres régionaux de formation (CRF) du point de vue de la Fondation canadienne de la recherche sur les services de santé (FCRSS), organisme de financement national dans le domaine de la recherche appliquée en services de santé et de soins infirmiers. L'auteur expose en détail la contribution de la FCRSS, des Instituts de recherche en santé du Canada (IRSC) et du programme Capacité et développement en recherche appliquée et évaluation dans les services de santé et en sciences infirmières (CADRE). Elle décrit également une caractéristique fondamentale des CRF : leur application du modèle de lien et d'échange (Lomas, 2000). L'article englobe les exigences du programme des CRF, le processus de sélection ainsi que l'examen de la quatrième année dont le but consistait à évaluer les premiers résultats des CRF. Le rôle que joue la FCRSS pour promouvoir le réseau national des CRF y est souligné. En conclusion, l'auteur soumet ses observations sur ce qui a bien fonctionné et sur ce qui pourrait être changé et fourni des conseils à ceux qui souhaiteraient élaborer un programme d'études supérieures fondées sur le modèle de lien et d'échange.

Key messages

- An unprecedented 10-year funding commitment by CHSRF and CIHR enabled the RTCs to focus on program implementation rather than contend with funding uncertainty.
- A compulsory residency with a decision-maker organization is a core requirement that differentiates the RTCs from many discipline-based graduate education programs that train applied health and nursing services researchers in Canada.
- Through the CADRE program, CHSRF and CIHR have launched a new genre of training programs using the linkage and exchange model popularized by CHSRF.
- The RTCs are becoming important hubs of training activities linking students, faculty, health system decision-makers and Executive Training for Research Application (EXTRA) fellows.

In the 1996 Canadian federal budget, funding was announced for the establishment of a health services research fund. These monies were allocated in direct response to the recommendations of the National Forum on Health (1997). Encouraged by the United Kingdom's emphasis on a research and development strategy in the early 1990s, the Canadian government agreed to invest an endowment for the creation of a foundation to improve the scientific basis for decisions made by those managing health services. The Canadian Health Services Research

Foundation (CHSRF) was the realization of this vision. CHSRF was incorporated as a not-for-profit Canadian foundation with charitable status in the spring of 1997. CHSRF's mission is to support evidence-informed decision-making in the organization, management and delivery of health services through funding research, building capacity and knowledge transfer (CHSRF 2008a). CHSRF's strategic goals are:

1. to create high-quality new research that is useful for health service managers and policy makers (especially in the foundation's priority theme areas);
2. to increase the number and nature of applied health services and nursing researchers;
3. to get needed research into the hands of health system managers and policy makers in the right format, at the right time, through the right channels; and
4. to help health system managers, policy makers and their organizations to routinely acquire, appraise, adapt and apply relevant research in their work (CHSRF 2008a).

CHSRF's Board of Trustees identified health system managers and policy makers as the primary audience for the work of the foundation. CHSRF adopted an overall "linkage and exchange" model (Lomas 2000) to achieve its ends, offering programs and activities that encouraged far greater interaction between those doing research on the health system and those who might use it.

Three years after the creation of CHSRF, the federal government made another significant contribution to health services research. In June 2000, the Canadian Institutes of Health Research (CIHR) was established as the major federal agency responsible for funding health research in Canada. "It aims to excel in the creation of new health knowledge, and to translate that knowledge from the research setting into real world applications. The results are improved health for Canadians, more effective health services and products, and a strengthened Canadian health care system" (CIHR 2008).

CIHR consists of 13 "virtual" institutes, each headed by a Scientific Director and an Institute Advisory Board, which provides oversight (CIHR 2008). Given this focus, CIHR shares a similar, but much broader, mandate with CHSRF.

Together, CHSRF and CIHR have responded to the challenges associated with building capacity for applied health and nursing services research. In keeping with recommendations from the National Forum on Health (1997), CHSRF and CIHR committed a portion of their funding to address the shortage of applied health and nursing services researchers in Canada. As such, CHSRF and CIHR jointly designed the Capacity for Applied and Developmental Research and Evaluation (CADRE) program, which was a comprehensive response to develop more research capacity in Canada, as well as to shift the orientation of researchers towards the application and use of research.

The purpose of this paper is to provide a history of the CHSRF/CIHR Regional Training Centres (RTCs) from a funder's perspective. The discussion will highlight the need for and rationale underpinning the RTC initiative and describe the program requirements to which university consortia were invited to submit applications. The selection process, how the RTCs were reviewed at year four and the role of CHSRF in supporting their development are presented. Finally, reflections are offered on deliberate decisions taken by CHSRF and CIHR that have contributed to the accelerated implementation of the linkage and exchange model.

The CADRE Program

Announced by federal Minister of Health Allan Rock in November 1999, the CADRE program is a partnership between CHSRF and CIHR to develop increased capacity in applied health and nursing services research (CHSRF 2008b). A need was perceived not only for more research capacity in Canada, but also for an increase in the orientation of the existing and developing stock of health services and policy researchers towards the application of research.

The CADRE program consists of four comprehensive and interlocking initiatives designed to address short- and long-term capacity needs on a regional basis. Originally, these included 10-year awards for education and mentoring chairs, RTCs and annual awards for post-doctoral training and career reorientation. The mandate of the RTCs is to offer graduate-level training in applied health and nursing services research using a multi-university, interdisciplinary approach. The RTCs complement the CHSRF/CIHR Chair Awards, the commitment of which is to provide strong mentoring environments for trainees at various levels of graduate education. The Post-doctoral Awards offer qualified researchers the training and experience necessary to establish an independent research career. Finally, the Career Reorientation Awards are aimed at individuals interested in changing the direction of their careers towards applied health services research. This award was suspended following a CHSRF Board of Trustees decision in August 2007 because it was not successful in attracting applicants.

Each of the CADRE programs focuses on fostering planned interactions between researchers based in academic settings and decision-makers (defined as health system managers and policy makers). Lomas (2000) popularized this approach, commonly known as "linkage and exchange." The impact of the CADRE program was expected to extend beyond the direct program participants and into applied healthcare provider organizations responsible for healthcare policy, management and delivery.

The CADRE budget represents an annual investment of approximately $6.5 million. The core funding for the CADRE program consists of equal contributions from CHSRF and CIHR. CHSRF's portion is further divided into allocations from core funds and the Nursing Research Fund (NRF), which was created using a $25 million

endowment from the federal government specifically targeted towards nursing. The NRF has spent the equivalent of $2.5 million per year for 10 years (1998–2008) for nursing research capacity development and research on nursing issues, a portion of which goes to support the four components of the CADRE program.

The CADRE program has been formalized in a memorandum of understanding between CHSRF and CIHR. CHSRF is the designated administrative lead. This role involves program management and fulfilling accountability requirements. In addition, CHSRF has led such initiatives as the fourth-year evaluation of the CADRE program, in particular, an assessment of the Post-doctoral Award, development of a newsletter, oversight of the annual post-doctoral competition and organization of twice-yearly network development and educational meetings for the RTCs and the chairs.

Rationale for the Linkage and Exchange Approach

The National Forum on Health (1997) promoted the use of evidence to improve health system outcomes. The emergence of evidence-informed management points to a need for trained health and nursing services researchers who are competent in transferring research, with the aim of increasing its use by healthcare leaders to make policy and management decisions.

Training for applied health services researchers has been available in various locations across Canada. Graduate training, however, is most often discipline-based and traditionally embedded in community health and clinical epidemiology programs, and to a lesser extent, in public health and health sciences faculties (Smith and Edwards 2003). More importantly, graduate-level training has been largely devoid of interaction with users of research in applied settings (Boyer 1990; Lomas 2000).

Support to develop a "linkage and exchange" approach within training programs emerged from a need to respond to the shift from evidence-based medicine to evidence-informed management (Denis et al. 2008). The philosophy underpinning the CADRE program, and in particular the RTC requirements, emerged from a notion that decision-makers should be involved in the training of researchers as producers of new knowledge (Lomas 2000).

The traditional approach to graduate training in applied health services research has predominantly emphasized development of academic skills, including the preparation of peer-reviewed publications and grant proposals (Smith and Edwards 2003). Although these skills are essential to the repertoire of health services researchers, Lomas (2000) and others have pointed out various shortcomings in such training. First, the lack of exposure to applied environments isolates students from understanding how research can be applied (Lomas 2000; Boyer 1990). While established graduate education provides a solid foundation in research methods, grant writing skills

and traditional approaches to academic dissemination (Smith and Edwards 2003), it has been limited in its efforts at engaging students with the end-users of research. CHSRF and CIHR were convinced that the "linkage and exchange" approach showed promise and was worth investing in to address these deficiencies.

The environment in which the RTCs currently operate is different from the one in which they were created. There has been, in recent years, a proliferation of funding for graduate training in applied health and nursing services research. For example, in 2001 CIHR launched the Strategic Training Initiatives in Health Research. This training grant program has similar objectives and expected outcomes to those that had been established for the CHSRF/CIHR RTCs, although the funding commitment was for a shorter time frame (i.e., six years).

Regional Training Centres: Program Requirements

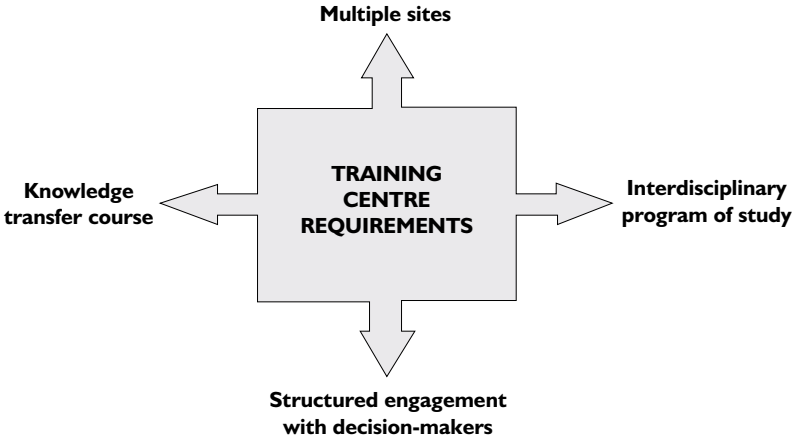
The Regional Training Centre award competition was launched in 2000 and was addressed to post-secondary academic institutions interested in creating consortia to develop and administer graduate-level programs to train applied health services and nursing researchers. Cross-institutional composition of the RTCs was a deliberate decision. This approach was viewed by the funders as an incentive to promote innovation in curriculum content, program design and delivery.

CHSRF anticipated proposals that would draw from and expand upon existing graduate programs in order to accelerate the production of this needed capacity, both regionally and nationally. The RTCs were also expected to complement the 10-year commitment to education and mentoring programs established through the chairs program and provide additional regional training capacity. The objectives of the RTCs were:

- to build consortia among post-secondary academic institutions, departments, faculties and decision-makers to augment current training; and
- to offer applied research training that is interdisciplinary and takes into account the concerns of health system managers and policy makers (CHSRF 2001).

In order to respect the diversity of university infrastructure and academic programs, the RTCs were given broad guidelines to develop training programs. The stipulated involvement of at least two academic institutions per training centre was intended to offset discrepancies between the traditional academic hubs with flourishing graduate programs and regions that had less developed resources in applied health services and nursing research training. Program requirements common to all training programs included (1) multiple sites, (2) a curriculum that includes training in knowledge transfer, (3) mandatory student residency with decision-makers and (4) an interdisciplinary approach (Figure 1).

FIGURE 1. RTC program requirements



The RTCs were designed to maximize opportunities in response to identified regional needs and gaps. The funding to develop the RTCs was viewed by CHSRF as one strategy to stimulate innovative, inter-institutional and collaborative graduate education in applied health and nursing services research. If the training was to be regionally appropriate and relevant, each centre had to take into account institutional strengths of participating universities when preparing their letters of intent and full-scale applications. Each consortium was required to demonstrate how the participating academic programs, faculties, departments and institutions were contributing their expertise to the RTC. Dallaire et al. (2008) explain how the RTCs have embraced interdisciplinarity to encompass diverse disciplines and methodological approaches to finding solutions for increasingly complex healthcare issues and challenges.

In tandem with the program requirements, there was a deliberate emphasis by CHSRF and CIHR on increasing capacity in regions across Canada that had less well-developed resources in health services and nursing research training. The RTCs responded by proposing innovative strategies to extend the reach of their training through distance and Web-based educational platforms interspersed with face-to-face courses and workshops. CHSRF promoted the development of recruitment strategies to increase access for students from disciplines and faculties that are traditionally under-represented in health services and nursing research.

The RTCs were asked to demonstrate how students would learn about communicating research in ways to enhance its use by decision-makers. D'Amour et al. (2008) describe strategies that the RTCs designed to achieve knowledge transfer and exchange. Students were required to complete a compulsory placement with health system decision-makers. This residency, or "real-life experience," was expected to play a dual role in (1) exposing students to the ways in which evidence created through

research is used to support effective management of healthcare and (2) actively engaging decision-makers and their organizations in graduate training. These requirements have differentiated the RTCs from existing graduate education programs. See Brachman et al. (2008) for a detailed description outlining how these regional training programs were launched and are currently operating. Morrison et al. (2008) describe how the RTCs give students exclusive access to regional health services and policy networks and underline graduates' belief that this training experience has facilitated new methodological approaches and innovative research ideas.

FIGURE 2. Network of RTCs: site distribution

WRTC Universities
- Alberta
- British Columbia
- Manitoba
- affiliates*

OTC Universities
- Lakehead
- Laurentian
- McMaster
- Ottawa
- Toronto
- York

FERASI Universities
- Laval
- McGill
- Montreal
- Sherbrooke

ARTC Universities
- Dalhousie
- Memorial
- New Brunswick
- Prince Edward Island

* University of Calgary, Brandon University, University of Northern BC, University of Victoria, Simon Fraser University, University of Saskatchewan, University of Winnipeg

WRTC: Western Regional Training Centre **OTC:** Ontario Training Centre **FERASI:** Centre FERASI **ARTC:** Atlantic Regional Training Centre

Selection of the Regional Training Centres

The application for the RTC award comprised two stages: a letter of intent followed by a full application. A review of applications was undertaken during each phase of the competition by an international Merit Review Panel consisting of academics and decision-makers.

Five university consortia were awarded funding; the Atlantic Regional Training Centre in Applied Health Services Research (ARTC), the Centre FERASI (Formation et expertise en recherche en administration des services infirmiers), and the Western Regional Training Centre for Health Services Research (WRTC) in 2001, and the Ontario Training Centre in Health Services and Policy Research (OTC) in 2002. One national centre – the Centre for Knowledge Transfer – was also established. This centre existed from July 2001 until June 2006. Following a review of the RTCs in the fourth year of operation, and upon recommendation of the Merit Review Panel, the funders decided not to extend funding for this national centre.

A list of the university consortia including current and former principal investigators, along with centre and site directors for the currently funded RTCs, is presented in Appendix 1. The map in Figure 2 illustrates the pan-Canadian distribution of RTCs and shows the multi-site composition for each centre currently funded by CHSRF and CIHR.

The RTCs have been able to secure additional sources of funding, including provincial co-sponsors. These include the Alberta Heritage Foundation for Medical Research, the Ontario Ministry of Health and Long-Term Care, the Fonds de la recherche en santé du Québec and the Nova Scotia Health Research Foundation. In addition, the Centre FERASI and the OTC receive funding from the Nursing Research Fund. All RTCs have received local support for one-time initiatives such as annual workshops and institutes or course conversion to Web-based delivery. Finally, many healthcare organizations provide substantial student support on an annual basis by paying for the student residencies arranged by the RTCs as part of the program requirements.

Fourth-Year Review

CHSRF was accountable to its Board of Trustees and CIHR to carry out a rigorous review of the RTCs in relation to their mid-point performance against their stated program objectives and achievements. The intent was to strengthen each RTC and provide it with substantial feedback such that it could develop a sustainability plan to secure funding to extend the RTCs beyond the initial 10-year commitment by CHSRF and CIHR. Davey and Altman (2008) offer a detailed report on this review.

The fourth-year review process was based on a Program Logic Model that identified relevant evaluation issues, questions and potential indicators. Figure

3 depicts the logic model based on the Canadian government's Results-based Accountability Framework designed by the Treasury Board. The review had four major objectives:

- document each RTC's progress against the objectives and implementation plan set out at the time of application (or revised objectives as approved by CHSRF);
- determine whether a given RTC is sufficiently established and poised to make a valuable capacity-building contribution over the next six years and beyond;
- render a recommendation regarding continuation of funding for the remainder of the grant period;
- provide feedback to each RTC on ways to optimize performance over the next six years (CHSRF 2004).

Each Merit Review Panel included Drs. Ken Davey and Jack Altman as co-chairs in addition to a third panellist selected from a list of potential reviewers submitted by each RTC. The panel was supported during the site visit by the CADRE staff and an occasional observer from the CIHR. Panel members completed a thorough orientation and prepared for each review well in advance of the actual site visit. Six to eight weeks before the visit, panel members received the following documentation:

- a copy of the original award application, as well as the international peer review comments and recommendations;
- a customized review report prepared by the RTC that included short-term outputs and outcomes, a strategic plan and an accountability framework;
- results of anonymous online surveys developed and administered by CHSRF staff and sent to students, participating faculty, principals and decision-makers;
- financial reports setting out expenditures to date and a budget to support the strategic plan over the remaining six years;
- a database containing details about the students involved in the program;
- annual reports submitted to the CHSRF, including CHSRF's feedback; and
- a proposed site visit agenda (CHSRF 2004).

The preparation of the customized review report involved a period of intense self-study during which each RTC focused on assessing crucial program elements, such as curriculum/program of study, institutional support, governance, strategic planning and accountability. This report formed the documentary basis for the review, together with annual progress reports and the initial application.

The site visit began with a brief presentation by the RTC director, followed by a question-and-answer session. The rest of the day featured interviews with students, decision-maker partners, members of the Advisory Board and senior administrators

of the university. Lastly, the panel convened briefly to discuss its preliminary findings, and then met in camera (in the absence of CHSRF staff) with the RTC's director.

The morning following the site visit was spent preparing a draft of the review results. The recommendation page provided one of three options: renewal without condition, renewal subject to specified conditions or cancellation of funding. Following receipt of the Merit Review Panel's report, CHSRF convened a teleconference with the funders to discuss the findings and recommendations.

Four of the five training centres were renewed through this process, with the one national centre being recommended for non-renewal. A key question arising from the review of the Centre for Knowledge Transfer was whether the RTC model, used to develop regional capacity, was an appropriate choice for a centre with a mandate to provide national-level training.

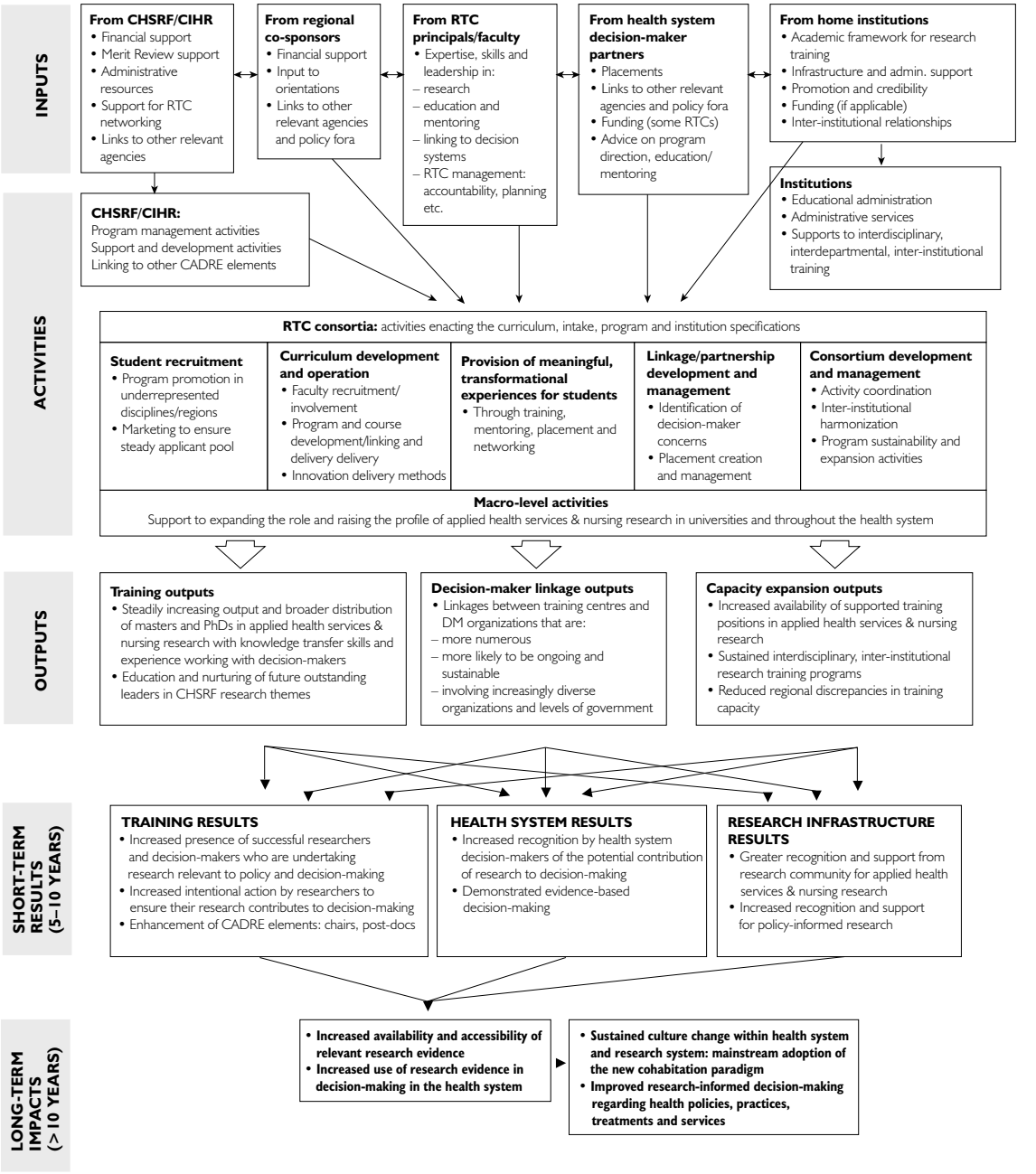
Cross-Program Synergies

It is evident that the funding provided by CHSRF and CIHR has been a significant incentive for numerous post-secondary academic institutions across Canada to cooperate in developing multi-site consortia to implement and administer the RTCs. Significant contributions have been made in facilitating complementary arrangements among universities that did not have an established track record in cooperative educational program design and delivery. DiCenso et al. (2008) present an insightful discussion highlighting the benefits and challenges of forming these inter-institutional consortia.

In addition to building research capacity through graduate education, each RTC also functions as a Regional Mentoring Centre (RMC) funded through the Executive Training for Research Application (EXTRA) program. As one of CHSRF's flagship programs, EXTRA focuses on building individual and organizational capacity. It received 10 years of Canadian government funding to optimize the use of research evidence in managing Canadian healthcare delivery. EXTRA develops regional capacity by giving health system managers across Canada the skills to better incorporate research evidence into their daily work through a two-year national training program. In their role as RMCs, the centres function as a conduit into regional academic mentoring resources to support the completion of the EXTRA fellows' intervention projects.

Most of the RTCs have also been involved with the organization of CHSRF Research Use Weeks. This initiative was designed to improve regional receptor capacity for research use by engaging health system managers and policy makers in short-term training. The involvement of the RTCs in both Research Use Weeks and EXTRA has enhanced their profile as regional "go-to places" for resources that support evidence-informed decision-making. The creation of the RMCs has also enabled

FIGURE 3. Program Logic Model of the Regional Training Centres Program



RTC students to interact frequently with EXTRA fellows, who represent decisi-makers at the executive level. As these mutually beneficial relationships continue to unfold, regional healthcare organizations are hiring RTC graduates, while the RTCs continue to rely on these organizations to assist students in gaining applied experience in knowledge transfer and exchange. Montelpare et al. (2008) explore how the RTCs intend to capitalize on these dual functions and synergistic pursuits while building on the suggestions generated by the fourth-year reviews to shape the future of the RTCs beyond CADRE.

Reflections from the Funder's Perspective on the Journey to Here

As the papers in this special supplement demonstrate, the RTCs have travelled a considerable distance since the original CHSRF/CIHR call for applications. Reflections from a funder's perspective on key aspects of this journey follow: what has worked well and why; where, in hindsight, we might have done things differently; and our advice to others.

What has worked

STABLE SOURCE OF RTC FUNDING

The 10-year funding commitment for the RTCs (assuming a favourable result from the mid-term review) gave these multi-university consortia the freedom to focus on program development and to create longer-term partnerships with regional and provincial funding co-sponsors and health system decision-makers.

REGULAR EXCHANGES AMONG THE CADRE NETWORK

The CADRE program organizes semi-annual educational meetings in various locations. These initiatives have facilitated a national network fostering collegiality, trust and collaboration in which the RTCs have been able to develop a common perspective, share program resources and work together to resolve problems of mutual concern. Of further benefit is the exchange between funders and the RTCs and between the funders themselves. The RTCs' involvement in additional linkage and exchange activities led by CHSRF has helped the centres to become more quickly acculturated to this model of collaborative research production using knowledge transfer and exchange strategies and techniques.

PARTNERSHIP BETWEEN FUNDERS

The memorandum of understanding between CHSRF and CIHR set out important processes for the CADRE program, such as the four-, eight- and 10-year reviews and annual reporting requirements for fundees. Assigning administrative leadership to CHSRF provided clarity of communication and a single contact point.

INTERNATIONAL MERIT REVIEW TO SELECT THE RTCs

The RTCs were selected by a Merit Review Panel made up of decision-makers and health researchers. This feature of the RTC selection process, coupled with the international dimension, provided additional profile and prestige to the award holders.

CORE REQUIREMENTS FOR THE RTCs

The success and leverage enjoyed by the RTCs, despite their differences and varied approaches, is in part due to the identification of the "right" core program requirements:

- *Multiple sites*: Options for graduate education were created that otherwise would not have been available. Smaller academic institutions were able to tap into regional expertise within larger academic institutions to increase access to graduate training in applied health services and nursing research.
- *Interdisciplinarity*: The RTCs created a "home" for interdisciplinary health research studies that would have been problematic in a discipline-based academic environment.
- *Mandatory student–decision-maker placements*: Relationships were established between academic institutions and health system managers that otherwise would not have developed.
- *Knowledge transfer and exchange*: Generated an array of tools, curricula and expertise across Canada.

MONITORING PERFORMANCE

The annual reporting requirements for the RTCs involve submitting to CHSRF (1) an updated participant database, (2) financial statements and expenditure forecasts and (3) a program report that describes progress and annual achievements. This documentation provided baseline information to the fourth-year reviewers about the evolution of each RTC.

What we would do differently

PARTICIPANT DATABASE AND GUIDELINES

A participant database for tracking student involvement and outcomes was developed soon after the CADRE program was launched. The RTCs were required, in compliance with their award, to submit information about their students annually. Owing to a lack of consistent definitions and data collection methods, difficulties in tracking student achievements were identified during the fourth-year reviews. This central database has since been modified and is actively managed by CHSRF to ensure accurate reporting of student outcomes.

INTEGRATING STRATEGIC AND OPERATIONAL PERSPECTIVES

During the early educational and networking meetings organized by the CADRE

program, the program managers (who are focused on day-to-day operational issues for the RTCs, compared with the centre directors, who are the designated academic leaders for each centre) were not included as full participants. The fourth-year review acknowledged the invaluable role the program managers play in bridging the gaps that naturally exist among the various academic sites involved with each RTC.

NATURE OF TRAINING ENVIRONMENT PRIOR TO THIS JOURNEY

No environmental scan of existing applied health and nursing services graduate programs was undertaken prior to developing the RTCs. Such baseline information could have been invaluable in documenting retrospectively how various training gaps have been closed through the launch of the RTCs' graduate education opportunities.

EARLY FOCUS ON SUSTAINABILITY

Thinking about a program's sustainability before it becomes fully operational seems counterintuitive. To some extent, the stability of the CHSRF/CIHR funding placed the RTCs in a comfortable financial position. The issue of sustainability did not surface until after the fourth-year reviews were completed. Although RTCs were asked, as part of the review process, to provide strategic plans, most had not considered how the future might unfold after the CADRE funding ceased. An earlier focus on sustainability planning might have prompted the RTCs to consider possible program niches and options for further exploration.

Advice to others

From the funder's perspective, the RTC enterprise has been highly successful to date, and we are confident that the major benefits to academic institutions and healthcare systems are yet to be fully realized. What advice would we offer to others who are considering the development of a similar training enterprise? CHSRF would suggest the following:

- The funder's role as a granting agency *and* as a partner in the enterprise must be balanced such that both parties are open to learning and adapting along the way.
- There is a need for both consistency of data requirements and comparable features across programs *and* for flexibility and creativity in program development and design.
- Both funder and fundee must respect formal accountability *as well as* the licence to innovate, perhaps beyond the original terms of engagement. Although flexibility and innovation can present as both strengths and weaknesses of any program, tolerance and leadership must be present in the right balance on both sides of the partnership.
- Very strong local links should be established between decision-maker partners and affiliated academic institutions *in addition to* links at the national level

across programs.

- The training program should be situated within a strong research milieu where high value is placed on knowledge transfer and research use.
- The funding tenure should be of sufficient duration to provide stable infrastructure as RTCs actively pursue meaningful partnerships.
- Trust and collaborative horizontal and vertical relationships should be enhanced through face-to-face network development and site visits.
- The performance monitoring and accountability requirements should be clearly specified and promoted to provoke strategic thinking.

Investing in capacity building requires strong and wise leadership and skills that bridge the academy and the health system. We sincerely hope that the experience of CHSRF and CIHR as funders, and the RTCs as fundees, is of value to others. We look forward to the "next generation" of initiatives launched by the RTC enterprise as new partners are engaged as funders to continue this journey.

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APPENDIX 1. Current and former principal investigators, site directors and centre directors for each Regional Training Centre.

Western Regional Training Centre	**Ontario Training Centre**	**Centre FERASI**	**Atlantic Regional Training Centre**
University of Alberta •Nicola Cherry* •Karen Kelly* (Site Director) •Beth Horsburgh* † •Devidas Menon* University of British Columbia •Morris Barer* •Adrian Levy* •Kim McGrail* •Isabelle Savoie* † •Robert Reid* † •Martin T. Schechter* •Samuel B. Sheps* (Centre Director) University of Manitoba •Malcolm Doupe (Site Director, 2007-Present) •Thomas Hassard (Site Director, 2001-2003) •Anita Kozyrskyj (Site Director, 2003-2006) •Patricia J. Martens* •John D. O'Neil* † •Leslie L. Roos (Site Director, 2006-2007) •Noralou P. Roos* † •T. Kue Young*	Lakehead University •Bruce Minore* (Site Director) •William Montelpare* •Pam Wakewich Laurentian University •Phyllis Montgomery (Site Director) •Ellen Rukholm* † •Raymond Pong* McMaster University •Kevin Brazil (Site Director) •Alba DiCenso* (Centre Director) •Brian Hutchison* [Retired] •Wendy Sword •Susan Watt •Christel Woodward* [Retired] University of Ottawa •Doug Angus* •Barb Davies* •Douglas Angus* (Site Director) •Graham Nichol † •Robert Spasoff* [Retired] •Brenda Wilson University of Toronto •Rhonda Cockerill* (Site Director) •Peter Coyte* •Diane Doran* •Paula Goering* •Linda O'Brien-Pallas* York University •Pat Armstrong* (Site Director) •Marcia Rioux*	Université Laval •Clémence Dallaire* (Site Director) •Linda Lepage* •Diane Morin Université McGill •Helene Ezer •Susan French* •Mélanie Lavoie-Tremblay (Site Director) Université de Montréal •Danielle D'Amour* (Centre Director) •Jean-Louis Denis* •Christine Colin* •Carl-Ardy Dubois •André Duquette* •Francine Girard Université de Sherbrooke •Luc Mathieu (Site Director)	Dalhousie University •Tom Rathwell* Memorial University of Newfoundland •Roy West* [Retired] •Doreen Neville † •Anne Kearney University of New Brunswick •Ed Biden (Centre Director) •John Rowcroft* [Retired] University of Prince Edward Island •Kim Critchley •Debbie MacLellan •Vianne Timmons

* Founding Principal Investigator
† Former Principal Investigator

Different Roads, Same Destination: Launching Regional Training Centres

Divers chemins, destination commune : le lancement des Centres régionaux de formation

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Abstract

The four Regional Training Centres (RTCs) founded by the Canadian Health Services Research Foundation and the Canadian Institutes of Health Research have used their regional context and resources to develop an innovative approach to reach their common goal of increasing capacity in applied health and nursing services research in Canada. As this overview explains, experiential learning features prominently in all four RTCs with the involvement of healthcare decision-makers and organizations. An interdisciplinary conceptual and methodological approach has been emphasized, resulting in both a regional and a national network of faculty, researchers, healthcare decision-makers and graduate students who are committed to the field of applied health and nursing services research. Faculty, decision-makers and students have gained a deeper understanding of how to achieve knowledge translation and exchange within the context of applied health and nursing services research to promote evidence-informed decision-making.

Résumé

Fondés par la Fondation canadienne de la recherche sur les services de santé et les Instituts de recherche en santé du Canada, les quatre Centres régionaux de formation (CRF) ont utilisé leur contexte régional et leurs ressources pour élaborer une approche novatrice afin d'atteindre un objectif commun : accroître la capacité en recherche appliquée en services de santé et de soins infirmiers au Canada. Tel qu'énoncé dans le présent aperçu, l'apprentissage par l'expérience occupe une place prioritaire dans les quatre CRF en raison de la collaboration des décideurs et des organismes du secteur des soins de santé. Une approche conceptuelle et méthodologique interdisciplinaire a été privilégiée, créant ainsi un réseau régional et national de membres de corps professoraux, de chercheurs, de décideurs en matière de soins de santé et d'étudiants des cycles supérieurs qui se consacrent au domaine de la recherche appliquée en services de santé et de soins infirmiers. Cette approche permet aux corps professoraux, aux décideurs et aux étudiants de mieux comprendre comment réaliser l'application et l'échange des connaissances dans le domaine de la recherche appliquée en services de santé et de soins infirmiers afin de favoriser la prise de décisions éclairée par des preuves.

Key Messages

- The RTCs have developed a national network building capacity in applied health and nursing services research.

- Regional contexts have helped shape innovative approaches to achieve a common goal.
- Experiential learning that links students with healthcare decision-makers and organizations has been crucial to the RTCs' success.
- Interdisciplinary training is an essential feature of the RTCs.

The Canadian Health Services Research Foundation (CHSRF) and the Canadian Institutes of Health Research (CIHR) established a partnership to create the Capacity for Applied and Developmental Research and Evaluation (CADRE) program. This was a response to a perceived need for more health and nursing services research capacity in Canada and for greater, more specific orientation of existing and developing health and nursing services researchers toward the application and use of research (Conrad 2008).

Following a request for proposals from CHSRF/CIHR between 2001 and 2002, four Regional Training Centres (RTCs) were developed as part of CADRE. The RTC network has a national presence through four centres: the Atlantic Regional Training Centre – Applied Health Services Research (ARTC), the Centre de formation et d'expertise en recherche en administration des services infirmiers (Centre FERASI), the Ontario Training Centre in Health Services and Policy Research (OTC) and the Western Regional Training Centre for Health Services Research (WRTC). CHSRF/CIHR identified the desired program outcomes, and each RTC designed its training program, to meet regional needs within the participating universities (Table 1). Centre FERASI focuses specifically on nursing research and administration.

This paper provides an overview of the four regional training centres, including information on course and workshop delivery, placements and residencies, individual organizational structure and lessons learned (which outline some of the challenges and opportunities this unique initiative has faced over the past seven years). In addition to applied training opportunities, students receive a stipend. Stipend levels vary from RTC to RTC based on number of years of training, local opportunities and expectations.

RTC Mandate

The mandate of the RTCs is to enhance the capacity of applied health and nursing services researchers at the master's and doctoral levels over a 10-year period (Conrad 2008). A regional approach was taken to ensure that institutions within each region would build their training programs on the existing strengths of their universities and foster local and regional linkages with healthcare decision-makers (DMs). The RTCs have established interdisciplinary programs emphasizing the creation of experiential learning opportunities for students with DM organizations (Dallaire et al. 2008; DiCenso et al. 2008; Sheps et al. 2008). The use of non–university-based experiential

TABLE 1. Universities of the Training Centre Network

ARTC	CENTRE FERASI	OTC	WRTC
Dalhousie University Memorial University University of New Brunswick University of Prince Edward Island	Université de Montréal Université Laval McGill University Université de Sherbrooke	Lakehead University Laurentian University McMaster University University of Ottawa University of Toronto York University	University of Alberta University of British Columbia University of Manitoba and Affiliate sites from universities across Western Canada

learning is a relatively new idea for a graduate program (Sheps et al. 2008). The goal of this collaboration is to give DMs and students a better understanding of how each can achieve enhanced knowledge translation and exchange within the context of applied health and nursing services research to promote evidence-informed decision-making.

Centre Profiles

The following RTC data include students completing their training in the spring of 2008.

Atlantic Regional Training Centre – Applied Health Services Research

The Atlantic Regional Training Centre – Applied Health Services Research (ARTC) began in 2002 as a partnership between Dalhousie University, Memorial University and the University of New Brunswick, with the University of Prince Edward Island joining in 2003, making it an Atlantic Canada initiative. The primary purpose of the ARTC is to increase health services research capacity throughout Atlantic Canada.

The ARTC developed a two-year, thesis-based master's program in Applied Health Services Research (Table 2). Each year the cohort comprises students from each of the four sites. The ARTC faculty is drawn from a range of departments and faculties, including Community Health and Humanities at Memorial University of Newfoundland, Health Services Administration and Bioethics at Dalhousie University, Biomedical Engineering and Nursing at University of New Brunswick and Nursing, Nutrition and Education at University of Prince Edward Island. In addition, thesis committee supervisors for students come from diverse disciplines from all four sites and include DMs.

Partnerships are key components of the ARTC. The underlying partnership has been the cooperative relationship among the four universities through their offering a common degree program that is geographically dispersed, providing access to expertise well beyond that available at any single partner site. The Nova Scotia Health Research Foundation is a major regional partner providing financial support for the ARTC.

Governance of the ARTC has two levels: an Advisory Board to provide advice and direction with regard to strategic planning, and a Management Team that oversees the day-to-day running of the centre. The Advisory Board includes deans of graduate studies or equivalent from the four universities, deputy ministers of health or their designates from Newfoundland and Labrador, New Brunswick, Nova Scotia and Prince Edward Island and CEOs of healthcare organizations, community representatives and students. This diverse group of people provides advice and links the ARTC to healthcare stakeholders and academic systems at a senior level. The Advisory Board also provides key connections for students' residencies and assists in the development of their thesis research projects. The Management Team comprises a principal investigator from each university, an overall program manager, four site coordinators and an instructional designer.

Over two years of study, students complete a total of eight courses using a hybrid model of course delivery, including Web-based distance techniques and three face-to-face regional workshops to allow interactions with DMs. In addition to coursework, students engage in the research, writing and defence of a thesis and attend local and national conferences (Table 2). The ARTC supports student memberships in the Canadian Association of Health Services and Policy Research (CAHSPR). The learning outcomes of the program are that students will (1) undertake health services

TABLE 2. ARTC profile

ARTC Profile	
Training Sites	Dalhousie University, Nova Scotia; Memorial University of Newfoundland, Newfoundland and Labrador; University of New Brunswick, New Brunswick; University of Prince Edward Island, PEI
Student Background	Interdisciplinary backgrounds: Arts, Sciences, Journalism, Allied Health Professionals
Program Requirements	Eight courses with a concentration in research methods, knowledge translation and exchange, research ethics, Canadian health policy, determinants of health; three workshops; **Statistical Package for the Social Sciences** (SPSS) (workshop) thesis and defence; residency
Course Delivery	Hybrid model using 60% Web-based and 40% face-to-face delivery method
Student Admissions	64 (52 Master's, 7 PhD), 5 withdrawn = 59
Students Completed Master's/Doctoral Degree	26 (25 Master's, 1 PhD)
Student Financial Support	Master's: $6,000/yr plus tuition for 2 years PhD: $9,000/yr plus tuition for 3 years $1,000 travel fund

* Data from 2001-2007.

research, (2) design, supervise and evaluate projects, (3) critically evaluate health services research literature, (4) employ innovative approaches in health services research through understanding diversity in decision-making environments and processes, (5) communicate health services research issues and results clearly and responsibly to DMs, academics and the general public and (6) integrate and synthesize health services research results across disciplines.

During the summer between years one and two, students complete a four-month residency working with DM organizations. The residencies have spanned the country, including placements with the College of Family Physicians of Canada in Ontario, Fraser Health in British Columbia, the Nova Scotia Department of Health, Health and Social Services in Prince Edward Island, the Public Health Agency of Canada in Ottawa, the Eastern Regional Health Authority in Newfoundland and Labrador and the Department of Health and Wellness in New Brunswick.

Centre de formation et d'expertise en recherche en administration des services infirmiers (Centre FERASI)

Created in 2001, Centre FERASI developed an inter-university and interdisciplinary partnership of four universities (Université de Montréal, Université Laval, McGill University and, more recently, Université de Sherbrooke) to promote nursing administration research. Centre FERASI was created in response to the lack of a master's-level training program in nursing administration in the province of Quebec since 1983. Additionally, only a few Canadian universities were providing doctoral-level training in nursing administration. The three main objectives of Centre FERASI are (1) to train students at the doctoral and master's level in nursing services administration, (2) to develop research in nursing services administration and (3) to promote knowledge translation and exchange among students, researchers, DMs and policy makers.

The Centre FERASI program is offered to students registered in various programs including Nursing, Community Health, Public Health, Management, Industrial Relations and related disciplines (Table 3). Doctoral students must attend three courses developed by Centre FERASI, and master's students must choose two (Table 3). They must undertake a research project/internship in nursing administration. The Centre FERASI's courses are embedded in the master's or doctoral programs in each university.

A key and unique component of the Centre FERASI is its research residency model. Each doctoral student is paired with a DM over all four years of his or her doctoral studies, and the DM organization provides 50% of the student's support. The student's research project is endorsed by the DM organization. The DM develops the project with the student and supervisor, assists the student with implementation of the project in the organization, introduces the student to all the levels of the organizational management and participates in the academic committees during the student's doctoral program. The project is related to a subject important to the DM organi-

zation. Master's students are required to do a thesis, a practicum or an essay for an organization, with a DM participating on the supervisory committee and during the implementation and the realization of the project, dependant on selected option.

Centre FERASI receives additional financial support from a number of sources including the Fonds de la recherche en santé du Québec (FRSQ/provincial funds), university partners and DM partners, the latter representing an important part of Centre FERASI's funding.

The centre's 23-member Advisory Board consists of individuals from the universities, DMs, provincial government, professional associations and unions. There are three main committees: the executive, scientific and grant committees, comprising representatives from universities and DM organizations.

Centre FERASI focuses on three main outcomes: (1) the number of students trained, (2) publications and conferences and (3) knowledge translation and exchange activities. To date, the centre has welcomed seven cohorts of graduate students. The number of students admitted totals 104, of which 64 are funded and 33 have graduated from their degree programs (Table 3). The scientific production of the students rep-

TABLE 3. Centre FERASI profile

Centre FERASI Profile	
Training Sites	Joining Anglophone & Francophone universities: Université de Montréal McGill University Université Laval Université de Sherbrooke (in 2008)
Student Background	Nursing, administration, public health, community health, administration sciences and related disciplines
Program Requirements	Five courses focus on health policies and nursing practices, nursing services organization, nursing human resources planning, knowledge transfer, nursing workforce determinants; seminars and conferences; thesis and defence; research residency, project/internship in nursing administration
Course Delivery	Face-to-face courses; videoconference
Student Admissions	104 (81 Master's, 23 PhD), of which 64 are funded
Students Completed Master's/Doctoral Degree	33 (29 Master's, 4 PhD)
Student Financial Support	Master's: $20,000/yr during one year (renewable once) PhD: $50,000/yr during 4 years (50% provided by DM organization) Travel funds: $1,000/yr Publication support: $1,500/yr Doctoral research training stage in Canada or abroad: $4,000/yr

* Data from 2001–2007.

resents a total of 31 published articles and 143 presentations to scientific conferences. Through the research residency, the students have been active in knowledge translation and exchange activities. Centre FERASI also organizes a number of seminars every year.

Ontario Training Centre in Health Services and Policy Research

Established in 2002, the Ontario Training Centre in Health Services and Policy Research (OTC) is a consortium of six Ontario universities and 20 principal investigators offering graduate training leading to a Diploma in Health Services and Policy Research at Lakehead, Laurentian, McMaster, Ottawa and York universities and to an equivalent qualification through the Collaborative Graduate Program in Health Services and Policy Research at the University of Toronto. OTC's mandate is to increase health services research capacity in Ontario through a specific graduate training program built on existing university and DM environment strengths (Table 4).

OTC has received additional financial support from several branches of the Ontario Ministry of Health and Long-Term Care, the CIHR Institute for Health Services and Policy Research (IHSPR), Health Canada, the Ontario Rehabilitation Research Advisory Network and the Canadian Institute for Health Information (CIHI).

The centre operates with an overall director, a program manager and site directors at each of the six participating universities. An Advisory Board (including representatives from CHSRF, DMs, university administrators, students and alumni) guides its strategic positioning, development and long-term sustainability.

The program in health services and policy research was approved individually at each of the participating universities by the Ontario Council on Graduate Studies (OCGS) as a Type 2 Diploma at five of the six sites and as a Collaborative Program at one. A Type 2 Diploma in Ontario is a graduate specialty (health services research, in this case) that requires academic work (usually two or three courses and a field placement) in addition to that of the primary graduate degree in which the student is enrolled. Type 2 Diplomas are not stand-alone programs.

Graduate students eligible to apply for OTC admission may come from 26 fields that encompass traditional and non-traditional health disciplines, including, among others, Nursing, Pharmacy, Public Health, Business Administration and Women's Studies. To date, OTC has admitted five cohorts of graduate students (23 in 2003, 28 in 2004, 19 in 2005, 24 in 2006 and 29 in 2007) for a total of 123.

The program in health services and policy research is based on a set of five competencies: (1) understanding of the Canadian healthcare system, (2) ability to carry out health services research, (3) understanding of theories regarding how the health of populations is produced, (4) understanding theories of health and health services knowledge production and (5) understanding of knowledge exchange and research partnerships.

Unique program features include course availability at any of the six participating universities, summer institutes, distance learning opportunities, linkages with students and faculty across universities and disciplines, and field placement opportunities in policy and research settings across the province.

TABLE 4. OTC profile

OTC Profile	
Training Sites	Lakehead University, Laurentian University, McMaster University, University of Ottawa, University of Toronto, York University
Student Background	26 fields from traditional and non-traditional health disciplines
Program Requirements	A minimum of three half course equivalents above and beyond the requirements of the parent graduate degree (including the Summer Institute and a 200-hour Policy Practicum); course examples include Canadian healthcare system, knowledge transfer and mixed methods research designs
Course Delivery	Traditional classroom instruction, distance (Web-based) education, institutes, field placements (Policy Practicum) and conferences Twelve courses addressing specific OTC competencies have been developed since early 2004. They are taught from different sites
Student Admissions	123 (58 Master's, 65 PhD)
Students Completed RTC Program	30 (23 Master's, 7 PhD)
Student financial Support	Up to $15,000 for the program per student regardless of level (Master's or PhD) or status (full-time or part-time)

* Data from 2001–2007.

Graduation from the OTC program requires completion of a minimum of three half course equivalents above and beyond the requirements of the graduate program in which the student is enrolled. Two of these three courses are mandatory: a one-week Summer Institute and a Policy Practicum (i.e., a field placement or residency).

OTC Summer Institutes represent a full-time week of intensive learning whereby experts in the selected field provide students with opportunities for advanced knowledge exchange. The institute is designed to expose students to the policy imperatives and realities of designing and delivering health services for varied populations in different healthcare contexts. As part of their learning, students complete team projects, the outcome of which is the preparation of a letter of intent (LOI) according to a format typical of open grants competitions.

In addition to the Summer Institute, the OTC sponsors the attendance of each

new cohort of students to a major conference in health services and policy research, usually the annual conference of the Canadian Association for Health Services and Policy Research (CAHSPR).

The Policy Practicum is a field placement requiring students to spend at least 200 hours in a policy-making environment working and interacting with stakeholders in the healthcare system.

Western Regional Training Centre for Health Services Research

The WRTC is a collaborative training initiative launched in September 2001 designed to support training of applied health services researchers (master's and doctoral students) across disciplines and institutions, equipping them to address the research needs of a wide range of healthcare administrators and policy makers (Table 5). The WRTC receives substantial regional financial support from the Alberta Heritage Foundation for Medical Research. In addition, the WRTC receives support from the Michael Smith Foundation for Health Research.

Initially, two training sites were established in the Department of Health Care and Epidemiology, University of British Columbia (UBC), and the Department of Community Health Sciences, University of Manitoba (UM); in 2007, a third training site was added at the University of Alberta in the Faculty of Nursing and School of Public Health (UA). The WRTC is supported by two research centres, the UBC Centre for Health Services and Policy Research (CHSPR) and the UM's Manitoba Centre for Health Policy (MCHP). In 2002, in response to the demand from graduate student researchers in other departments and universities (other than four core departments), a Student Affiliate status was added to the program, resulting in a network of students from across the four western provinces.

A WRTC Management Team (three site directors and a program manager) oversees day-to-day operations with part-time site coordinators. WRTC governance is the responsibility of the Management Team, supported by an Advisory Committee for overall strategic planning and comprising three members from each site: a healthcare DM, a researcher/faculty member and a student representative. Planning retreats are held every second year.

The WRTC program objectives include providing applied health services research training opportunities to equip researchers to address the research needs of a wide range of healthcare policy makers; attracting graduate students from a broad range of disciplines, including health and non-health backgrounds; involvement of decision-makers in all aspects of the training program; exposure of students to the interface of research and decision-making; providing interdisciplinary conceptual and methods training; and developing linkages with other departments and universities to add diversity and strength to WRTC activities (Table 5).

TABLE 5. WRTC profile

WRTC Profile	
Training Sites	University of British Columbia University of Manitoba University of Alberta and Affiliate sites across Western Canada
Student Background	Interdisciplinary – from health and non-health disciplines
Program Requirements	Seminar series – knowledge exchange over 2 years; 2 courses in health policy and research methods; 4-month field placement; Fall Institute; CAHSPR conference; other workshops/conferences
Course Delivery	Face-to-face; some teleconferencing & videoconferencing
Student Admissions	93 (51 Master's, 40 PhD, 2 Post-doctoral)
Students Completed RTC Program	73 (40 Master's, 31 PhD, 2 Post-doctoral)
Student financial Support	Core departmental students $16,000/yr for two years Affiliates $5,000/yr for 1–2 years Membership and travel to annual CAHSPR conference Top-up policy in effect for students receiving external awards

* Data from 2001-2008.

During the planning stage, the WRTC principals decided that rather than create a new degree program across the four provinces (which would have been extremely difficult and time-consuming), they would instead build on the existing core departmental graduate programs, which were highly complementary. Each of the three core sites operates a regular seminar series, Current Topics in Health Services Research (with presentations by DMs, students and researchers and recommended readings). Through the seminar series, students meet on a regular basis face-to-face over the two years, a practice that creates a cohesive group at each site. Students at other sites and affiliate students across Western Canada participate in the seminar series in person or via teleconferencing (with some videoconferencing).

Students complete two courses in each of health services research methods and health policy. The Fall Institute brings together all students for a concentrated training session that includes local faculty, researchers and DMs. The students also participate in various local workshops/conferences (CHSPR, MCHP). The WRTC sends all students each year to the annual CAHSPR conference and pays for student memberships. Training in SAS, qualitative methods, grant writing and other skill development workshops are offered through the WRTC.

The highlight of the WRTC training is the field placement (usually four months full-time) at a healthcare DM site. This field placement experience is meant to provide

the student and the DM with an opportunity to work together on a research or policy project identified by the agency (Sheps et al. 2008). The field placement provides an excellent opportunity for students to come to understand the issues facing healthcare organizations regarding evaluation of their programs, policy development and the reasons organizations make the decisions they make (including the evidence they use to support such decisions).

Career Activities of Graduates

Graduates of all four centres have had no difficulty finding employment or career positions following completion of RTC training. Students are often employed prior to completing their graduate degree through the placement/residency. Graduates have found employment with health authorities, government departments, universities (as faculty), hospitals, health networks and research centres. Because of the applied nature of the RTC programs, graduates have been hired for senior positions. A number of graduates have gone on to complete doctoral and post-doctoral studies and medical school training.

Partnerships and Strategic Alliances

Over the years, the RTCs have developed partnerships and strategic alliances with various local and national organizations or other training programs.

Executive Training for Research Application

Each RTC has taken on the role as mentoring support sites for the CHSRF Executive Training for Research Application (EXTRA) program. Health services professionals participating as EXTRA Fellows make presentations at RTC workshops, institutes, seminars and courses. They may also be involved in supervising placements/residencies and participating on advisory and other committees (Conrad 2008).

Canadian Association for Health Services and Policy Research

The RTCs recognize the importance of participation in the Canadian Association for Health Services and Policy Research (CAHSPR) and have supported student membership in CAHSPR. A number of students from the RTCs also attend the annual conference.

Canadian College of Health Services Executives

The ARTC has developed an agreement with the Canadian College of Health Services Executives (CCHSE) to promote the ARTC's training program within the CCHSE

organization. ARTC students are eligible for membership within the CCHSE program, which can lead to the designation of Certified Health Executive (CHE).

CIHR Strategic Training Initiative in Health Research

The WRTC has partnered with a number of the CIHR Strategic Training Initiative in Health Research (STIHR) programs through the development of joint training activities, including workshops and the 2004 CIHR Summer Institute (which gathered 60 graduate students, faculty and decision-makers from across the country).

CHSRF/CIHR Chairs

Researchers and students of the Centre FERASI have collaborated on a number of research projects with the CHSRF (Conrad 2008) and CIHR Chairs (e.g., Chair of Governance and Transformation of Health Care Organizations, Chair of Knowledge Transfer and Innovation, Canada Research Chair on Behaviour and Health). These chairs have also acted as supervisors for students.

Lessons Learned

The development and delivery of the RTC programs are complex and challenging. All four centres have developed their training programs differently, but with the common goal of increasing capacity in applied health and nursing services research. In year four, each of the RTCs underwent an external review by CHSRF/CIHR, resulting in renewed funding to the 10-year mark (Davey and Altman 2008; Rathwell et al. 2008). A number of challenges have arisen around the development and delivery of the training programs, especially in relation to university collaboration (DiCenso et al. 2008).

The overall impact of the RTCs, as well as the many challenges they have faced over the past six years, are addressed in more detail in the additional papers in this special supplement of *Healthcare Policy/Politiques de Santé*. A few examples follow.

Program development/delivery

- A new approach to training delivery, with no models to build upon, can be accomplished with sufficient long-term support from individuals committed to the concept of linkage and exchange between universities and healthcare decision-makers.
- Building a network of individuals and organizations can be complex; harmonizing different academic traditions, backgrounds and fields – and different cultures, Anglophone and Francophone, in the case of the Centre FERASI – was difficult, but it can be done.

- Developing and maintaining relationships with various individuals involved in the training programs, including faculty, researchers, administrators, DMs and students, require a commitment of time and of targeted resources.
- Distance across sites and provinces creates an added challenge in communications, training delivery and reporting. Making time available for a certain amount of face-to-face contact is critical.
- The varied academic and professional backgrounds of the students necessitate an open-minded approach to the training and mutual respect from all involved.
- Delivering training across sites/provinces is expensive and requires adequate and flexible financial support. Travel costs for annual institutes and workshops need to be included in the budget.
- Course delivery and program communication across sites enable individuals to participate at a distance. Meetings and course delivery via Internet, videoconferencing and teleconferencing can be expensive.
- Some of the RTCs have had difficulty attracting faculty to participate owing to workload and lack of recognition of their involvement by their home academic departments. Participation in cross-university initiatives such as this requires greater recognition and must be addressed at senior university levels.
- For faculty, the additional teaching and mentoring activities can add to an already heavy workload. This situation is especially difficult for junior faculty who do not have tenure.
- Because of the programs' design and innovation, the added program requirements for students (e.g., placement/residency, institutes/workshops) create a heavier than usual workload; for the majority of students, the benefits far outweigh these costs.
- Delivery and administration of the training programs require substantial committed project management support (e.g., a program manager, site coordinators, instructional designers and administrators).

Impact of the RTCs

- Over the initial 10-year period, the RTCs will have trained enough graduates to increase the number of health services and nursing researchers and build a strong community of practice, both regionally and across Canada.
- The provision of ongoing support for this community of practice – including continuing engagement with healthcare organizations and provision of tools, knowledge and support to the researchers trained by the RTCs – is critical in fulfilling the vision of enhanced linkage and exchange for the betterment of the Canadian healthcare system.

- As a community of practice, RTC alumni need support in maintaining their connection to the RTC program as they pursue their various career paths in academia and decision-maker organizations.
- There is a need to increase the RTCs' national and international visibility and exposure.

Conclusion

Since the launch of the CADRE program, RTC principals, program managers and other faculty from the four RTCs have met face-to-face twice a year to discuss the program as a whole with CHSRF and CIHR staff. During these meetings, ideas are shared, challenges discussed and plans for the future made. This environment fosters a collegiality that benefits all – an unexpected outcome of the program. The four RTCs continue on their individual paths of contributing to the development of a community of practice in applied health and nursing services research. While this journey has been a wonderful one for the RTCs, their students and decision-making partners, the current funding commitment from CHSRF/CIHR ends in 2011/2012. However, a vision for sustainability has developed that will take the RTCs beyond what was initially imagined (see Montelpare et al. 2008).

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An Interdisciplinary Approach to Capacity Building in Applied Research

Une approche interdisciplinaire pour le renforcement des capacités dans le domaine de la recherche appliquée

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Abstract

The Canadian Health Services Research Foundation (CHSRF) has contributed to applied health and nursing services research in Canada by establishing the Regional Training Centres (RTCs). The interdisciplinary education and experience in applied health and nursing services research that the RTCs offer has produced graduates who are highly sought after by both academic and key health services decision-making agencies. Students educated in these multidisciplinary environments learn that different perspectives and methodological approaches enrich their capacity to define and complete research. This paper describes how the RTCs have helped build capacity in health services research through an interdisciplinary approach that considers the substantive, conceptual and methodological domains.

Résumé

La Fondation canadienne de la recherche sur les services de santé (FCRSS) a contribué à la recherche appliquée aux services de santé et aux services infirmiers au Canada par l'établissement des Centres régionaux de formation (CRF). La formation et l'expérience interdisciplinaires dans le domaine de la recherche appliquée en services de santé et des soins infirmiers qu'offrent les CRF produisent des diplômés qui sont très recherchés par les établissements universitaires et les organismes chargés de prendre des décisions clés en matière de services de santé. Les étudiants formés dans ces milieux multidisciplinaires découvrent que différentes perspectives et approches méthodologiques leur permettent d'enrichir leur capacité de définir et d'effectuer la recherche. Cet article décrit la contribution des CRF à l'accroissement de la capacité dans le domaine de la recherche en services de santé en utilisant une approche interdisciplinaire qui tient compte des domaines importants, conceptuels et méthodologiques.

Key messages

- Collaboration between researchers and decision-makers results in better appreciation of the realities of the healthcare system.
- An interdisciplinary perspective facilitates comprehensive representation of the healthcare system reality.
- A repertoire of research methods is useful in addressing questions related to the healthcare system.

The Canadian healthcare system strives to determine how best to deliver services to the population. These concerns are addressed through health services research (HSR) now well established in the United Kingdom,

North America and parts of Europe over the last 20 years (Fulop et al. 2001). By advancing our understanding and knowledge of ways to organize and deliver health services, HSR supports both the effectiveness and efficiency of the healthcare system and contributes to the health and well-being of Canadians. The Canadian Health Services Research Foundation (CHSRF) used a strategic approach to increase the number and quality of applied health services researchers by funding four regional training centres (RTCs): the Atlantic Regional Training Centre (ARTC), the Western Regional Training Centre (WRTC), the Ontario Training Centre (OTC) and the Centre de formation et d'expertise en recherche en administration des services infirmiers (FERASI). The RTCs used an interdisciplinary approach to enhance research capacity in HSR (Brachman et al. 2008; Conrad 2008). This paper will define HSR and then illustrate the contribution of the RTC to HSR within the substantive, conceptual and methodological domains.

Defining Health Services Research

HSR is usually considered a multidisciplinary field of inquiry, both basic and applied, that examines healthcare services to increase knowledge and understanding of the structure, processes and effects of health services (field et al. 1995; Fulop et al. 2001). For CHSRF, HSR is more a broad field of inquiry than a discipline (CHSRF 2003). Some argue that HSR is, fundamentally, multidisciplinary scientific investigation (Fulop et al. 2001; Health Services Research 2007). However, the scientific endeavour and contribution to the building of research capacity through each RTC may have many different meanings and dimensions.

Langley et al. (2003), referring to Brinberg and McGrath's (1985) three-dimensional model of the research process, propose that research operates in the *substantive domain*, associated with specific empirically observable phenomena, problems or settings; in a *conceptual domain*, associated with abstract ideas and theories about the nature of the world; and in a *methodological domain*, associated with the procedures used to relate ideas from the conceptual domain to the real world of the substantive

TABLE 1. Applied health and nursing services research

Substantive Domain	Conceptual Domain	Methodological Domain
Phenomena related to access, quality and cost of healthcare Eg: Barriers to accessing care, resource utilization, program evaluation, innovation in structure and services	Theoretical perspectives from many disciplines Eg: Political science, work organization, organization theory, management, economics, nursing theory	Procedure used to relate substantive and conceptual domains Eg: Survey methods, mixed qualitative and quantitative, appreciative inquiry

domain (see Table 1). This framework allows us to distinguish domains within the global mandate of building research capacity for Applied Health and Nursing Services Research (AHNSR) and to show how that mandate has been successfully pursued by each RTC. Examples of curriculum content and student research projects will be used to illustrate these domains.

The Substantive Domain

The substantive domain is associated with specific, empirically observable phenomena, problems or settings within the real world (Langley et al. 2003). HSR studies demonstrate how social factors, financing systems, organizational structures and processes, health technologies or personal behaviours affect access, quality and cost of healthcare (field et al. 1995; Health Services Research 2007). Each RTC has its students address problems or phenomena affecting the healthcare system. The breadth of problems examined by RTC students illustrates how the substantive domain of AHNSR can be transformative.

The Atlantic Regional Training Centre

The ARTC, through its four interconnected sites, offers a joint master's degree in applied health services research. This advanced degree program accepts students from a variety of backgrounds and disciplines and prepares them with the necessary theoretical understanding to investigate complex health systems issues. The multi-site program uses Web-based courses and rotating theme-based workshops as a forum for linkage and exchange among decision-makers (DMs), students and faculty. As well, there is a four-month research residency placement in which students apply theory and concepts within decision-making organizational contexts. The residency is designed to provide hands-on research and decision-making experience, to develop an understanding of how knowledge is transferred from the academic community to decision-makers and to determine whether projects undertaken are of sufficient interest to the student and the host organization to merit further investigation as a thesis research topic. One ARTC student conducted a study to identify the barriers women face in seeking cervical cancer screening. This master's thesis addressed the need for provincial health program evaluation.

The Ontario Training Centre

Upon entry into the OTC, students prepare an individualized learning plan that ensures they meet required competencies (Brachman et al. 2008). Students can then select various pathways according to these plans. Students with extensive policy experience are able to join research teams. An OTC student who was a senior official in the Canadian Memorial Chiropractic College was able to participate in the activities of

the Arthritis Community Research Evaluation Unit. This practicum resulted in a number of papers detailing the predictors of healthcare services utilization for musculoskeletal conditions. Alternatively, students with significant research exposure in their degree work are able to gain experience in the policy arena. A pharmacy-based student studying adverse events and natural health products joined the Marketed Health Products Directorate of Health Canada and developed natural health product adverse event reporting guidelines for practitioners and manufacturers.

The OTC has developed 12 targeted distance education courses to address the OTC competencies. These courses include those with a substantive focus (eg. work organization and health). In addition to course work and the Summer Institute, participating students must complete a policy and/or research practicum with a DM partner. The practicum options are wide ranging, and ensure that OTC graduates are thoroughly exposed to "empirically observable phenomena" and have developed an understanding of, and respect for, the importance of evidence-informed decision-making.

These varied experiences introduce OTC students to the interdisciplinary nature of health services research and help them develop the skills they will need to become successful practitioners. Approximately 30 students have graduated from the OTC since its inception. Dissertation topics have included an examination of role perceptions of public health nurses in Northern Ontario; the pursuit of scientific legitimacy in the current research funding context; recruitment and retention strategies for rehabilitation health human resources; and nursing autonomy and leadership in acute care settings. The activities encourage multidisciplinary debate and collaboration between students and faculty and between students and key health decision-making partners. The program develops among its students an appreciation of the contributions of health services and policy research to an understanding and improvement of the Canadian healthcare system. As such, the OTC's activities ensure that its students are exposed to the real world of the substantive domain.

The Western Regional Training Centre

The WRTC encompasses the entire spectrum of health services and policy research through a focus on issues central to AHNSR. Students have not only to pose and answer questions for the field, but must "complete the loop" through linkage and exchange back to those who have provided data, facilitated access to patients or staff or allowed entrée into healthcare organizational decision-making.

Similarly, field placements challenge students to understand not only the conceptual perspectives of those engaged in healthcare management and provision, but the practical, political and ethical realities that may constrain decision-making. Thus, the breadth of empirical AHNSR application to contemporary issues in healthcare services *organization and utilization* might encompass such areas as safety principles in the

context of the structures and processes of infection control in long-term care facilities; assessment of primary and specialist utilization and continuity of care for childhood cancer survivors; creation of a framework for the evaluation of community care for chronic disease management; or assisting with the implementation of a program budgeting and marginal analysis for priority setting (from the micro to macro levels). AHNSR approaches to the solution of continuing issues in *healthcare provision* might include development and evaluation of pharmaceutical policy; utilization of engineering-based safety concepts in a falls strategy for elderly patients; and analysis of the risk of depression in post-acute myocardial infarct or return to the emergency room among asthmatic patients.

Centre FERASI

The Centre FERASI has a mandate specific to *nursing administration research*, and the questions raised by the students must relate to this substantive domain. However, nursing administration research is the component of AHNSR dealing with questions of importance for the single largest group of healthcare providers – nurses. Thus, it is concerned with the costs of nursing care, and with nursing service delivery issues within the broader context of healthcare service and policy analysis. FERASI delivers four seminars: nursing work life, organization of nursing services and care, policy related to nursing administration and knowledge transfer.

The questions raised by the doctoral students focus on organizational structures and how they influence clinical practice, the effects and outcome of different roles and types of practice, innovation in structure and services provided and other questions related to human resources. Doctoral theses address such phenomena as organizational initiatives regarding recruitment and retention, clinical governance in oncology and service integration in clinical programs of local integrated networks. According to Denis (2007), this nursing research is an exemplar of how professionals can be a source of innovation at the interface of clinical practice and organizations.

Lessons learned from the substantive domain

- Students have a better grasp of the reality of the healthcare system through collaboration with DMs and through interdisciplinary studies.
- Field placements in DM contexts help both students and the DMs themselves distinguish perceived problems from real problems.
- The RTC model of collaboration with DMs is a challenge for academic programs as it is costly in terms of time and effort. However, the RTCs found ways to compensate for these efforts to ensure that AHNSR is a viable and interesting option for students.

The Conceptual Domain

Research must be located within a conceptual domain of abstract ideas about the nature of reality and recognized patterns of understanding (Langley et al. 2003). HSR is not a single scientific discipline; the breadth of subjects it encompasses requires the use of multiple conceptual perspectives to understand the reality of health services (Fulop et al. 2001). Each RTC has dealt with the need for conceptual interdisciplinarity of AHNSR in different ways, even though two of them have either a strong nursing component (OTC) or a strong nursing mandate (FERASI).

The Atlantic Regional Training Centre

The primary purpose of the ARTC is to increase health services research capacity throughout Atlantic Canada. Students within this four-province collaborative venture are expected to prepare a thesis proposal that outlines the particular area to be investigated. The unique composition of the thesis committee includes a decision-maker, where appropriate, and may include members of several faculties and more than one participating institution.

Students' thesis topics take into account the research interests of faculty across the four sites. In addition to faculty supervision, the program's capacity to provide appropriate research supervision from institutional health policy and decision-makers is also considered. The ARTC's rotating workshops have focused on information exchange on such contemporary healthcare issues as knowledge translation, evidence-based decision-making and evaluation research, providing the opportunity for dialogue with experts in these fields. Students learn about health policy and the determinants of health, knowledge transfer and research uptake. They then use this knowledge of healthcare services issues and the organized network of experts to formalize research questions to complete their thesis requirement.

The Ontario Training Centre

The OTC requires the completion of a health services research or policy dissertation as part of its common requirements (Brachman et al. 2008). The distance education courses include those with a policy focus (Canadian health policy, rural and northern health policy), and graduates' dissertations have been conceptually grounded in a range of disciplines (economics, nursing theory, sociology). The OTC has delivered four Summer Institutes with the themes of Research and Policy Implications of Delivering Mental Health Services in Rural and Northern Parts of Ontario (2004), Health Human Resources Research and Policy (2005), Women's Health (2006) and Regionalization of Health Services (2007). The topics of these Summer Institutes provide good examples of the interdisciplinarity of the conceptual domain.

The Western Regional Training Centre

The WRTC provides exposure to the conceptual aspects of many disciplines. It explicitly seeks out and encourages students with varied undergraduate and graduate backgrounds to consider AHNSR as a field of concentration. Through its seminar series and annual institutes, the WRTC provides an opportunity for interaction and debate with individuals of varying epistemological and ontological backgrounds as well as varying degrees of administrative responsibility. Students, faculty and DMs from a wide array of professions have found common ground for engagement and learning. As a result, research topics of WRTC students (see previous section for examples), while broad with regard to conceptually relevant disciplinary perspectives, integrate these to maintain a focus on critical questions of health services, access, delivery and outcomes in diverse care settings and for varied populations, as noted above.

Centre FERASI

The Centre FERASI is interdisciplinary through a consortium of two Faculties of Nursing (Montreal and Laval universities) and a School of Nursing (McGill University). Each partner of the consortium has working relationships with researchers and professors from other faculties such as management, health administration, political sciences, anthropology and sociology. Moreover, DMs who participate on thesis committees add to the interdisciplinary nature of the research project. Examples of doctoral work illustrate how interdisciplinary the research is at the conceptual level.

One student assessed organization of nursing services in order to explore its contribution to job satisfaction, burnout and the quality of nursing care. This student was co-supervised by a health administration professor, a nursing professor and a nursing CEO. Thus the project was grounded in theoretical models and perspectives from nursing, management, the sociology of organizations, work and professions as well as in industrial psychology. Another student, supervised by a specialist in human resources (physician and health administration scientist), studied organizational climate and its influence on nursing care practices and professional satisfaction in acute and psychiatric care hospitals. Her committee reflected expertise from nursing, organizational psychology and human resource theory. Thus, interdisciplinarity is interwoven at a conceptual level into the Centre FERASI's program.

Lessons learned from the conceptual domain

- Students are challenged to integrate many disciplinary perspectives as opposed to more traditional studies within a single disciplinary perspective.
- An interdisciplinary perspective is better suited for students interested in a more

comprehensive representation of the healthcare system reality.
- The RTC model illustrates that interdisciplinary conceptualization of an empirical problem is possible and that there are many benefits in supporting education at the graduate level to promote theses including such perspectives.
- The interdisciplinary model of the RTCs can accommodate a wider range of students with a variety of backgrounds who can share and learn from one another.
- Graduates from interdisciplinary programs such as the RTCs could be challenged, when they seek a position, by finding ways to fit within a discipline-specific environment. Alternatively, they may be perceived as an asset in an academic research group or in a health services research organization.

The Methodological Domain

AHNSR is conceptually interdisciplinary, and thus an area of applied research. Yet, AHNSR studies are guided by varied disciplinary methods. Research within each RTC has to take into account the debate between mode 1 research (academically driven, discipline-based, summative) and mode 2 research (transdisciplinary, reflexive, socially accountable, formative and connected to a wider range of non-university stakeholders) (Gibbons et al. 1994). According to Calnar et al. (2003), this debate is especially pointed in the methodological domain, as much process research in healthcare takes the form of applied evaluation funded by government. Only later in its life cycle does it generate theoretical work. Thus, it is important to be aware of the range of appropriate methods and the types of questions that different methods can address. Each RTC has used various methods to pursue research endeavours and has put different types of educational training in place to build AHNSR capacity.

The Atlantic Regional Training Centre

The ARTC strives to provide graduate education at the master's level in the conduct of applied health services research from an interdisciplinary perspective. It advances reciprocal arrangements between academic communities and decision-maker organizations that facilitate the use of evidence in policy decisions affecting the health of Atlantic Canadians. The ARTC provides a platform where interchanges between decision-makers and health researchers from academic communities generate policy-relevant research. Through a Web-based approach, students gain a broad picture of applied health services research through course work in the Canadian health system, health ethics and research and evaluation design. They focus on healthcare research methodology through course work in qualitative and quantitative approaches. The multidisciplinary nature of the program determines that the theses have varied topics and diverse methodologies.

The Ontario Training Centre

The OTC focuses on the achievement of an agreed-upon set of health services and policy research competencies and the sharing of common requirements across all universities. These requirements include a minimum of 1.5 full course equivalents beyond graduate degree requirements (comprised of the Summer Institute, a policy and/or research practicum and additional course work as needed) and completion of a thesis with a focus in health services research or policy. The distance education courses include those with a focus on methods mixed methods in health services and policy research, qualitative research, survey methods).

The Western Regional Training Centre

The WRTC fosters a broad array of research topics and methodologies in developing students' intellectual and experiential knowledge as well as encouraging faculty and decision-makers to engage with students and with each other. Faculty members must engage in health services research and be fully informed about the field, its concepts and its methods, both quantitative and qualitative. Support of the WRTC by two internationally known centres – the Manitoba Centre for Health Policy in Manitoba and Centre for Health Services and Policy Research in British Columbia – is critical to providing a strong and broadly based conceptual foundation, access to comprehensive sources of data and methodological expertise in data analysis. This interdisciplinary engagement fosters consideration of differing methodological approaches. Field placements challenge students to understand the practical, political and ethical realities that may constrain the relevance and utility of various methods.

Centre FERASI

Centre FERASI has emphasized building capacity at the doctoral level, but also has graduated a large number of master's students. Since a doctorate is a much longer commitment, only three new researchers have been graduated. A look at the students' projects reveals that they used many methods, among them, action research. For example, one student used appreciative inquiry; another used case studies to compare the implementation of new roles; and another used a mix of quantitative and qualitative methods to examine quality of care.

Lessons learned from the methodological domain

- Students explore with the decision-makers which methodological domain would best address their questions.
- Substantive and conceptual interdisciplinarity of AHNSR means that students have to learn different methods.
- Students learn a repertoire of research methods to address research questions.

Conclusion

The interdisciplinary education and experience in applied health and nursing services research offered by the RTCs have produced graduates who are highly sought after by both academic and key health services decision-making agencies. These students, educated in a multidisciplinary environment, learn that there are many perspectives and methodological approaches to define and complete research. Moreover, RTC students emerge with the theoretical expertise and field experience to determine the best mix of methods relevant to the solution of complex health services problems.

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"Between Two Worlds": Healthcare Decision-maker Engagement with Regional Training Centres

« Entre Deux Mondes » : la collaboration entre les décideurs du secteur des soins de santé et les Centres régionaux de formation

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Abstract

The engagement between Regional Training Centres (RTCs) and healthcare decision-makers within the context of Applied Health and Nursing Services Research (AHNSR) takes many forms, and is critical to the development of the next generation of researchers. Such engagement supports the concept of linkage and exchange by inculcating in students and healthcare decision-makers alike an understanding of and respect for each other's worlds. This process builds bridges of immense importance to contemporary healthcare. The authors of this paper discuss the rationale for such engagement and describe the varied types of interaction between students and faculty with healthcare decision-makers and organizations. Bridging these two worlds for mutual advantage represents an innovative and highly successful strategy for graduate education in AHNSR. While this effort is not without challenges, the work of each world is relevant and valuable to the other and to the Canadian public.

Résumé

Dans le cadre de la recherche appliquée en services de santé et de soins infirmiers (RASSSI), la collaboration entre les Centres régionaux de formation et les décideurs du secteur des soins de santé se présente sous plusieurs formes, chacune d'elles étant essentielles à la formation de la prochaine génération de chercheurs. Une telle collaboration reconnaît le concept de lien et d'échange en inculquant aux étudiants et aux décideurs du secteur des soins de santé une compréhension et un respect du secteur de l'un et de l'autre. Ce processus tisse des liens d'importance capitale avec les soins de santé contemporains. Les auteurs de cet article discutent des raisons d'une telle collaboration et décrivent les différents types de collaboration entre les étudiants/membres des corps professoraux et les décideurs/organismes du secteur des soins de santé. Jeter un pont entre ces deux secteurs au profit mutuel de l'un et de l'autre représente une stratégie novatrice et très réussie pour les études supérieures dans le domaine de la RASSSI. Quoique cet effort ne soit pas sans défi, le travail qu'effectue chaque secteur est pertinent et précieux à l'autre ainsi qu'aux Canadiens et Canadiennes.

Key messages

- The two worlds of graduate education in applied health services and nursing research and healthcare decision-making can be successfully bridged for mutual benefit by the active engagement of healthcare decision-makers in training activities.
- The engagement between these two worlds requires clear vision, mutual understanding of context and mutual respect.

- Successful engagement depends upon sustained nurturing and financial support.

A key requirement of the Canadian Health Services Research Foundation's (CHSRF) call for Regional Training Centre (RTC) proposals (Conrad 2008) was an explicit discussion of how healthcare decision-makers (DMs) could be engaged in applied health services and nursing research capacity building. The need for engagement was based on CHSRF's conception of, and emphasis on, linkage and exchange (Lomas 1993) as a response to the divide between the worlds of healthcare researchers and decision-makers. The "two worlds" view, not unlike that of C.P. Snow's "two cultures" of art and science some 60 years ago (Snow 1959), saw both academic researchers and healthcare decision-makers as wary of, if not hostile to, each other's motives, activities and influence over management and policy decisions. RTCs were mandated to engage with DMs to develop experiences that would allow both worlds the opportunity to escape perceived dysfunctional views of "the other" through linkage and exchange in various contexts. To the greatest extent possible, RTCs were organized so that students and DMs would "walk in each other's shoes."

As this rapprochement was to occur within university-based training centres, one challenge was not only to shift student thinking (relatively easy), but also to shift university thinking (less easy). While there is much rhetoric in contemporary university mission statements regarding the importance of linkages with the wider world, most of this activity remains predominantly on the university's terms. Thus, the RTCs' challenge in bridging these two worlds was to create opportunities for substantive engagement between students and DMs through as many different activities and contexts as possible. This paper tells the story of how DM engagement has been achieved.

Types of Engagement

The engagement of students with DMs can take many forms, including participating in seminars, courses, workshops, institutes, conferences; facilitating the enrolment of DMs in educational training (e.g., the EXTRA Program; see Conrad 2008) or degree programs; participating on admission, advisory or planning committees; and supervising students from academe DM settings (field placements, practica, residencies). Each of these types of engagement is used, in varying degrees, by the RTCs to achieve not only linkage and exchange of ideas but also to gain a basic sense of healthcare decision-making dynamics and to utilize the DMs' wisdom and experience. Of critical importance is the fact that insight and sense making (Weick et al. 1999) involve active participation of students *and* DMs.

DM involvement in seminars, courses and conferences is, conceptually, not a big stretch in contemporary graduate education. However, active student participation

within DM settings has until recently been a greater challenge, given an isolationist view that sought to protect students from the distractions of the "real world." Although exceptions to this general rule have existed for many years (e.g., professional training in such fields as medicine, nursing and engineering), engagement of students outside the university, particularly at the graduate level, has been a recent phenomenon. In 1936, Antioch College in Ohio was one of the first (if not the first) undergraduate institutions to make cooperative experience credit a requirement for graduation. Such a formal requirement for most graduate students is still uncommon, although "working in the lab" in the basic sciences is a comparable experience. However, because the "lab" was typically located on campus, this experience did not fully engage students with the world beyond the academy. Thus, experiential, non–university-based learning as a requirement for graduation from academic doctoral programs (and to a lesser extent, master's programs) is new and, indeed, innovative.

RTCs have spearheaded this innovation, and have actualized as well as expanded the notion of linkage and exchange beyond the realm of ideas and debate to a fully integrated practical experience in DM contexts. Such experiences, of course, are highly relevant to applied health and nursing services, as well as to policy research. In this multidisciplinary endeavour, context is everything, and understanding context (competing pressures, values and options for action in the realm of healthcare operations and other socially important activities) is critical. Not to require structured engagement with DMs in the training of students in healthcare services and policy research training would, in our view, be a severe dereliction of duty both to students and to society.

RTC Engagement

Each of four RTCs has put the ideas enunciated above into action. Each was asked to describe some types of engagement with DMs. Together, these descriptions provide examples of the breadth of DM engagement, a number of which are common across sites (see Brachman et al. 2008) as a core objective in the training of graduate students.

Western Regional Training Centre

The WRTC has involved DMs in seminars, courses and institutes as experts providing field perspectives and experience on a wide variety of topics. Moreover, the institutes – held in conjunction with either the Manitoba Centre for Health Policy's (MCHP) Rural and Northern Research Day or the Centre for Health Services and Policy Research's (CHSPR) annual conference – bring together students, researchers and DMs to discuss policy issues or review and explore the meaning and implications of specific data sets. In Manitoba, DMs include Regional Health Authority board members as well as managers, an added dimension of DM interaction given that RHA

board members are often not clinical or managerial professionals. Thus, watching them grapple with healthcare data can provide insights into how the general public might perceive the issues discussed. In addition, the WRTC has co-sponsored both a CIHR Summer Institute (for 60 students from across the country) held in June 2004, at which more than half the presenters were DMs, as well as a CHSRF Research Use Week, held in Prince George in 2006.

While these activities, as well as Centre governance, are critical for understanding DMs' perspectives on a variety of special topics, and demonstrate how researchers and decision-makers might collaborate, they do not have as powerful an effect on students as the field placement does. The field placement is the WRTC's key process for student–DM engagement. The core task is the student project, which must be one of high priority to the organization. Project objectives and deliverables, issues of confidentiality and intellectual property, use of the project data, support (e.g., space, computers, etc.), remuneration (virtually all field placement organizations have provided funding) and field placement time frames are described in a field placement agreement signed by the student, the field placement supervisor and WRTC.

After initial contact with the field placement site, meetings occur prior to the start date (within two weeks of starting) to confirm that all is well, then again at mid-term and at the end for evaluation. Evaluation comprises questions regarding the student's performance ("exceeded," "met" or "did not meet" expectations) as well as narrative comments from and signed by the field placement supervisor, the student and the WRTC. Two important aspects of this experience are (a) an initial period of job shadowing to understand the roles of key decision-makers within the organization and (b) students' participation in meetings and other decision-making activities (relevant to their project). Both aspects provide insights into the personal and organizational dynamics of decision-making within the DM context. Of importance is the fact that the field placement is often a source of ongoing work on a contract or permanent basis (post-degree); in some instances, new positions have been created specifically to take advantage of students' skills and their field placement experience within the organization.

Ontario Training Centre

In addition to completing a 200 hour field placement in policy settings, OTC students are required to attend 2 Summer Institutes.

The Summer Institutes, which are an important educational activity of the OTC, are used to highlight DM engagement and encourage students to learn to collaborate with DMs on matters ranging from issue identification to policy analysis to research dissemination. Consistent with this objective, the OTC engages DMs – from governments, health services planning bodies and healthcare agencies – as much as possible in various Summer Institute activities. The annual Summer Institutes are intensive, week-

long events that give OTC students an opportunity to examine selected healthcare topics in depth and to learn from and exchange ideas with academic and DM experts.

Each of the six participating OTC universities takes turns hosting a Summer Institute. To date, four have been held: Research and Policy Implications of Delivering Mental Health Services in Rural and Northern Parts of Ontario (Lakehead University, 2004); Health Human Resources Research and Policy: A Focus on Rural and Northern Issues (Laurentian University, 2005); Women's Health in Research, Policy and Services: Challenges for the Future (York University, 2006) and Regionalization of Health Services in Terms of Planning, Funding and Delivery (McMaster University, 2007).

Critical to the success of the Summer Institutes has been active DM involvement. For example, all four Summer Institutes involved DMs on planning committees or as advisers, who contributed to the formulation of institute learning objectives; identification of topics, speakers and reading material; and, in many instances, financial co-sponsorship. In addition, DMs were invited as keynote speakers or presenters who shared with students their organization's stance on a given issue. For instance, the 2005 Summer Institute had speakers from key DM organizations, such as the Ontario Ministry of Health and Long-Term Care and Health Canada, thus adding a policy perspective to decision-maker engagement. Some DMs also played a mentoring role in guiding student discussions and providing information and insights that might not be available from conventional research literature.

Student assignments (in the form of letters of intent for a research granting agency) were assessed on the basis of a set of criteria that included the significance of the proposed research for DMs and the involvement of DMs as partners in the research. Lastly, some DMs offered to host site visits to their institutions. In the 2004 Summer Institute, students visited various mental health agencies (e.g., a mental health client advocacy group) and Aboriginal health centres as part of their learning process. Interestingly, in addition to their own participation, some DMs sent some of their staff to the Summer Institutes as students. For example, several senior policy analysts of the Ontario Ministry of Health and Long-Term Care and Health Canada enrolled in the 2005 Summer Institute. Their participation helped enrich the learning experience of their fellow students by bringing the perspectives of DMs to bear on a variety of issues.

Decision-makers have played an important role and contributed significantly to the success of the OTC Summer Institutes. Without their participation in various capacities, the students' learning experience would not have been as rich, comprehensive and policy-relevant.

Centre FERASI

The Centre FERASI engages DMs to provide appropriate training to nursing admin-

istration researchers and, in the long term, foster a renewal of nursing administration practices. DMs from healthcare organizations are key partners involved in the governance of FERASI (e.g., board, executive committee), critically influencing the orientation of this RTC. They are involved with master's and doctoral students in different ways.

DMs contribute 50% of the scholarship funding for doctoral students and are paired with them as mentors over a four-year period. Significantly, DMs collaborate with the student and academic supervisors at the earliest stage in developing a research protocol that is based on common interests and is of high priority to the organization. The DMs also provide support by accepting doctoral students as residents within their organizations throughout the doctoral candidates' studies. These residencies are designed to foster integration of doctoral students into healthcare organizations from the outset, in order to develop research competencies and knowledge transfer capacity with the goal of enriching the organization's research culture. This fully integrated practical experience is a significant innovation in nursing education that has been highly successful (Centre FERASI 2005). DMs are enthusiastic about student participation in and contribution to their organization because students play critical roles in supporting knowledge transfer and promoting the use of research-informed evidence in decision-making.

For master's students, DMs spend two years providing a milieu for students' research project and helping them develop a better understanding of the organizational culture and context. This becomes an opportunity for knowledge transfer to students and establishes a tangible link between research and field work. In addition to their engagement with individual students, DMs are involved in various learning activities such as key speakers at FERASI seminars. For example, in 2007, FERASI organized a colloquium, Informed Nursing Services Administration Saves Lives, at which DMs, EXTRA Fellows (see Conrad 2008) and students collaborated in presenting research projects. Finally, DMs take part in knowledge transfer activities with master's and doctoral students, as well as academic supervisors, by working together on specific committees within their organizations or as co-authors on papers and conference presentations based on students' research projects.

Centre FERASI is committed to meeting the difficult challenge of establishing a critical link between the academic community and practice settings. The student–DM partner–academic supervisor triad provides many formal and informal opportunities for knowledge exchange. Thus, real solutions to real problems are developed in the very context from which they emerged.

Atlantic Regional Training Centre

While the involvement of DMs is integral to the ARTC's master's and doctoral programs, a unique feature is the involvement in ARTC governance of deputy ministers

of health from all four Atlantic Region provinces. Such involvement provides a very high level of engagement, facilitating not only provincial awareness of ARTC activities to ensure their relevance but also helping to ensure the Centre's future sustainability. decision-makers also act as mentors and advisers to students in the program. The planned curriculum for the ARTC program includes a mandatory residency placement with a Decision-maker organization, for which students receive academic credit. The residency enables ARTC students to spend four months working on research projects to inform health policy and/or healthcare decision-making. These projects are determined based on the mutual interests of the student and the decision-maker agency, and are designed to meet a high-priority need in that agency.

The primary goals of the residency are (1) to facilitate interaction among DMs, researchers and graduate students, (2) to consolidate students' learning about knowledge transfer and dissemination of research and (3) to illustrate to students how evidence is used in decision-making. The development of residency opportunities is the responsibility of the ARTC principal at each of the four participating universities. Student supervision involves host organization preceptors and an ARTC principal. The principal is also responsible for orienting the preceptor at the residency site. Once on-site, the preceptor is then responsible for providing regular feedback to the student and a formal evaluation at the end of the residency. While on placement, students have the opportunity to attend decision-making meetings at their host agency.

DMs also play a key role in the theme-based workshops that are held twice a year as part of the ARTC program. Many of the workshop participants have been EXTRA Fellows who are able to share their expertise as DMs. These workshops are an opportunity to bridge theory and practice, allowing students to hear panel presentations by DMs and to interact with them on a one-on-one basis. Such meetings generally occur informally, during coffee breaks and at dinnertime. In recent years, panel discussion themes have included "Addressing Wait List Times in the Healthcare System" and "How Your Research Has Influenced Policy and Decision-making." The Fall Workshop is held in Halifax at the end of the first term with both first- and second-year students. The Winter Workshop, on policy and decision-making, is held in St. John's for first-year students only. It is during this workshop that students have their first exposure to decision-makers from various settings, including deputy ministers involved in ARTC governance, and an opportunity to hear these people speak about the role that research plays across the spectrum of health decision-making.

Lessons Learned

- Decision-makers, despite being extremely busy individuals, enjoy working with

students committed to understanding the challenges of the DM context.
- RTC students gain enormous insight from interaction with DMs regarding the application of evidence and the dynamics of using evidence to inform healthcare services and policy decisions.
- The RTCs have found it easy to engage DMs in training activities when these are based on mutual respect, a clear rationale and a focus on active learning and exchange.

Conclusion

Engagement with DMs is clearly a high priority for RTCs; thus, they have successfully carried out their mandate from CHSRF. The engagement is continuous, takes a number of key forms that vary across RTC sites, and reflects an emphasis not only on learning from DM experience but, perhaps more importantly, working closely with them – in effect, closing the loop essential for effective linkage and exchange (Denis and Lomas 2003; Huberman 1987; Lavis et al. 2003). As noted by Graham et al. (2006), knowledge transfer and translation is an active, indeed interactive process, bridging quite different cultures and perspectives. The challenge for the student and DM is the ability to acknowledge and understand these cultural differences. The challenge for the RTCs is to provide a meeting ground based on mutual respect and to facilitate shared learning.

Applied nursing and health services research applies research methods to critical questions regarding health services provision and policy choices. Thus, DM engagement requires understanding the DM world and the choice-making process, and is critical for effective communication and learning. The RTCs have championed a knowledge-to-action process by "making it real" to both DMs and students – to their mutual benefit, and to the ultimate benefit of public health and of individual users of the healthcare system.

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Knowledge to Action: The Development of Training Strategies

Des connaissances à la pratique : la création de stratégies de formation

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Abstract

This paper presents an overview of curriculum and program development activities at the four Canadian Regional Training Centres directed towards the goal of achieving increased knowledge to action. The RTCs have initiated learning opportunities to increase the skills of graduate students in conducting knowledge translation and exchange (KTE). The authors describe similar as well as unique approaches used at each centre to hone understanding and skills. RTC activities include the development of a new four-year residency program for doctoral students, new Web-based and real-time interactive theory courses and new linkages with departments of journalism. While formal evaluation is yet to be completed, interim feedback from participating graduate students has been encouraging.

Résumé

Cet article présente un aperçu des activités d'élaboration de cours et de programmes d'études entreprises par les quatre Centres régionaux de formation (CRF) dans le but d'accroître le transfert des connaissances à la pratique. Les CRF ont initié des possibilités d'apprentissage visant à accroître les compétences des étudiants des cycles supérieurs dans le domaine de l'application et de l'échange des connaissances (AEC). Les auteurs décrivent les approches similaires et uniques utilisées par chaque centre pour perfectionner les connaissances et les compétences des étudiants. Les activités des CRF comprennent la création d'une résidence de recherche de quatre ans pour les étudiants au doctorat, de nouveaux cours théoriques interactifs sur le Web et en temps réel, et l'établissement de liens avec des départements de journalisme. Quoiqu'une évaluation officielle n'ait toujours pas été effectuée, la rétroaction provisoire des étudiants s'avère encourageante.

Key messages

- The need to address the gap between research and policy/practice has created a strong commitment to produce graduates with increased skills in KTE.
- Each RTC has promoted KTE with a view to regional needs and local expertise.
- KTE training strategies must be evaluated to identify those that are most effective.
- Healthcare decision-makers, national funding organizations and KTE experts have played a significant role in graduate student training at the RTCs.

A major challenge in healthcare services is the ongoing need to make decisions based on up-to-date, credible research, so that Canadians receive high-quality and effective healthcare. The Canadian Health Services Research Foundation (CHSRF) and the Canadian Institutes of Health Research (CIHR) are leading national initiatives to achieve better knowledge translation and exchange (KTE) for evidence-informed decision-making. CHSRF defines knowledge exchange as:

> collaborative problem-solving between researchers and decision-makers that happens through linkage and exchange … and results in mutual learning through the process of planning, producing, disseminating, and applying existing or new research in decision-making. (CHSRF 2007a)

CIHR's Vice President of Knowledge Translation, Ian Graham, recently refined the CIHR definition to:

> a dynamic and iterative process that includes the synthesis, dissemination, exchange and ethically sound application of knowledge to improve the health of Canadians, provide more effective health services and products and strengthen the healthcare system. (Tetroe 2007: 1)

While the application of knowledge to the business of healthcare is obviously of fundamental importance, the mechanisms are not straightforward. Recent publications present many models (Graham et al. 2006; Sudsawad 2007), strategies (Reardon et al. 2006; Tsui 2006) and anecdotes (CHSRF 2007b) of KTE. However, the use of multiple terms has produced confusion (Greenhalgh et al. 2004). For example, Graham et al. (2006) identified 29 related terms, including *knowledge translation*, *knowledge transfer*, *knowledge exchange*, *research utilization*, *dissemination* and *diffusion*. For the purposes of this paper, we combine the CHSRF and CIHR terms and describe our work related to knowledge translation and exchange, or KTE.

Lomas, in a legacy document (CHSRF 2007b), identified the opportunities and challenges in KTE. One main challenge is that even though we better understand the construct of "evidence-informed," the healthcare system continues to grow in its complexity of problems and issues. As well, the presence of many barriers (organizational, cultural, professional) impedes the application of evidence.

The Regional Training Centres (RTCs) across Canada were launched with the intent to build research capacity in a distinctive way. Researchers trained by these centres will generate new knowledge and have the capacity to work with decision-makers to conduct research. This paper focuses on the strategies for KTE training across these four Canadian training centres, each of which represents a consortium of univer-

sities: Centre de formation et d'expertise en recherche en administration des services infirmiers (Centre FERASI), Atlantic Regional Training Centre (ARTC), Ontario Training Centre (OTC) and Western Regional Training Centre (WRTC). For a detailed description of these centres, refer to the paper by Brachman et al. (2008).

In 2000, when the call for proposals for RTCs was launched, the movement towards KTE was gaining strength, yet few researchers who applied for the grants were experienced in KTE. CHSRF promoted KTE to be a mandate of the centres and facilitated the development of expertise in KTE among researchers and decision-makers (Lomas 2000) through multiple activities. To this end, CHSRF has regularly organized scientific activities to develop a common vision and vocabulary among RTC partners with respect to knowledge translation and exchange. CHSRF also publishes useful tools such as "Mythbusters" and "Evidence Boost", and organizes intensive Research Weeks in various locations. The Centre for Knowledge Transfer was also created at the University of Alberta. This RTC had a national mandate to develop research capacity in KTE (Conrad 2008).

The challenge and priority of the RTCs was to develop effective strategies to train students in KTE. Sparse evidence existed on how to provide effective training for graduate students in this field. Furthermore, there is little evidence of the impact of KTE on patient and health system outcomes, and the effectiveness of KTE strategies remains a methodological challenge (Tetroe et al. 2008).

It is in this complex context that the RTCs have striven to develop training strategies to ensure that students learn to create evidence through research and to exchange knowledge with decision-makers. The objectives of the training centres are well represented by the "knowledge-to-action model" developed by Graham et al. (2006), which encompasses the creation of knowledge as well as the utilization of that knowledge in action. Knowledge creation through conducting research has traditionally been the focus of academic training programs; however, the application of research to practice and policy has received less attention by academics.

In this paper, we describe KTE activities that focus on the application of knowledge to practice and policy for healthcare. The four centres commonly have requirements for practicum or residency placements, theory courses and participation in workshops, and are also increasing their linkages across a wider range of disciplines. The following discussion highlights two of these strategies per centre.

Training Strategies

Centre FERASI

Centre FERASI (Centre de formation et d'expertise en recherche en administration des services infirmiers/Training and Expertise in Nursing Administration Research) is a consortium of four universities in Quebec: Montreal, Laval, McGill and Sherbrooke.

The Centre FERASI is dedicated to building research capacity in nursing services administration and has invested in two main strategies that involve KTE.

First, an alliance with the Chaire GETOS (Gouverne et transformation des organisations de santé, directed by J.L. Denis) was created so that students can take the course "Connaissances et changement" (45 hours; J.L. Denis and P. Lehoux). The objectives of the course are (1) to define the interface between knowledge and practices according to different paradigms, (2) to develop an understanding of the issues in creating links between the scientific community and the practice community, (3) to define and analyze different modes of knowledge production and the links with communities of practice and (4) to understand the evolution of scientific policies in terms of knowledge application.

Parallel to this course, a second strategy focuses on linking doctoral students with a health organization through a research residency, whereby students are paired with decision-makers of that organization during the four years of their doctoral studies. The main objectives of the research residency are for the student (1) to develop an in-depth understanding of a problem related to the administration of nursing services in an organization and to develop an awareness of how the decision-makers use knowledge to take action, (2) to experiment in the methods for the creation of knowledge in a context where they are associated with decision-makers and (3) to put KTE strategies into practice. For the decision-maker in the organization, usually a director of nursing or a chief nursing officer, the objectives are two-fold: (1) to develop or reinforce a culture of research in the organization and (2) to advance KTE in the organization. The KTE experience is continuous across four years and is closely aligned with decision-makers' needs. Decision-makers invest material and financial resources by providing an office and a computer and half the funding to the student. The research residency is undergoing an evaluation, and preliminary analysis shows favourable results. Among 20 students who are undergoing this research residency, six have been interviewed. The added value, according to those respondents, is increased:

- understanding of the organizational challenges in research and KTE;
- level of awareness of their role as research partner;
- alignment of their research question with the context of the organization;
- acquisition of knowledge of applied research;
- networking within the organization and with the research community;
- feeling of belonging and less isolation during doctoral studies;
- methodological choices based on a better understanding of the organizational context.

There are also challenges:

- framing research results in a way that satisfies the tension between an independent external view and a view from within the organization; and
- being a gateway to evidence-based practice, which translates into many requests for a doctoral student to manage.

The research residency is considered an innovative strategy to train researchers in creating and transferring knowledge. Students recognize the value of communicating their research and working closely with decision-makers. One student commented:

> The principal challenge for us is to find a balance between the fulfillment of the academic program in the time prescribed, the participation in the activities of the organization and the participation in the university life. During residency, it is necessary to become a producer of knowledge and, at the same time, an intermediary in the process of knowledge transfer. In a way, the residency makes the doctorate more complex, but at the same time one leaves with a great satisfaction from it. (2006)

Atlantic Regional Training Centre

The Atlantic Regional Training Centre (ARTC) in Applied Health Services Research is a collaborative venture among four Atlantic Canadian universities: Dalhousie University in Nova Scotia, Memorial University of Newfoundland, the University of New Brunswick and the University of Prince Edward Island. As with the other training centres, the ARTC focuses on training researchers to bridge the gulf between research and practice. From the inception of the master's program in applied health services research, the curriculum planners ensured that knowledge translation and exchange was a core feature of the program. The ARTC approaches KTE in two main ways: a Web-based distance education course, and workshops.

A core course, "Knowledge Transfer and Research Uptake," is offered in the second year of the program after students have completed 10 courses and a residency. This Web-based distance education course combines peer-reviewed and grey literature, websites, online discussions and written and oral assignments to explore the facilitators and barriers to the use of research evidence in decision-making in the healthcare system. The course introduces students to research transfer methods such as working with decision-makers at all stages of the research in order to enhance the dissemination and implementation of research findings in clinical, management and policy decisions.

A unique aspect of the ARTC approach is that the Knowledge Transfer and Research Uptake course is entirely online. Students are placed into heterogeneous groups based on their experience with knowledge translation. They select a group

name, such as "Trendy Translators and Research Tools". They have weekly readings, quizzes and online discussions. Students, in their groups, interact with one another based on a knowledge translation topic. A typical discussion challenge is: Think about the organization where you did your internship. What was its relationship with academic researchers? What could they do to improve the awareness of research done in their community? And on the flip side, what could researchers do to increase the organization's awareness of research evidence?

Students must post an answer, and then respond to and question their group members, seeking more detail and analysis. This interactive forum allows the students to question, probe, challenge and affirm one another. It is exciting to see the progression in their knowledge and thinking vis-à-vis knowledge translation issues.

Supplementing this course work, students have the opportunity to meet personally and connect with decision-makers in two three-day workshops. These workshops give students an opportunity to network, take sessions that enhance their programming and listen to academics regarding healthcare challenges. The workshops highlight knowledge translation issues and some have focused on knowledge brokering as a career. Each student is also required to develop a knowledge translation plan for his or her thesis, and evaluate knowledge translation initiatives of an organization.

One student, in her online discussion, wrote:

> Programs like the ARTC allow students to gain insight and knowledge about the "real world." With courses in KT and policy, we learn the importance of networking, collaboration and relationship building with the partners who are involved in the research (i.e., researchers, communities/populations and policy makers). (November 23, 2007)

Another student wrote:

> … There seems to be a general interest from the organization side as well – health organizations are respectful and interested in working with students from the ARTC because they have a desire to contribute to current knowledge utilization in the respective fields. Centres like ARTC contribute to knowledge utilization in their very existence – by teaching, sharing and having intellectual dialogue surrounding current research (another form, really, of active knowledge exchange!). (November 26, 2007)

The students recognize the importance and challenges of knowledge translation and how research must connect with policy development as it is infused throughout their program. In any training program, the theories and strategies of knowledge translation need to be incorporated to ensure that the students see the value and acquire the

knowledge to facilitate knowledge translation of research into decision-making. This notion of infusing applicable KTE approaches coincides with the RTCs' purpose.

Ontario Training Centre

The Ontario Training Centre (OTC) for Health Services and Policy Research graduate diploma program involves students from six participating universities (Lakehead, Laurentian, McMaster, York, Ottawa and Toronto). The OTC is a competency-based program, with one of the core competencies defined as the "ability to effectively exchange knowledge and develop research partnerships (e.g., citizens, health care providers, decision-makers at all levels)" (OTC 2007).

One of the early activities of the OTC was to review available courses related to KTE at the participating universities. In 2003, only one course was available at the University of Toronto that addressed the KTE core competency, but this course was not accessible to students at the other participating universities. Thus, the OTC initiated a call for proposals for the development of a new KTE distance course accessible to all OTC students.

The new course was developed in 2004 by a sociologist, Ian Graham, and by a nurse, Barbara Davies, experienced in research about intervention strategies for KTE. The course includes critical appraisal of clinical practice guidelines, systematic reviews and patient decision aids, as well as theoretical models, attributes of innovations and knowledge transfer strategies for professionals. A course pack of selected readings is available at all sites for easy access to key references. Assignments require participants to identify a potential solution to a practice or policy gap, assess the evidence and stakeholders' perspectives and design a pragmatic implementation intervention. The topics selected by students are diverse, such as lay dietary trans-fat policy, physical activity for bone health and involving lay health workers to enhance adherence to treatments in disadvantaged populations.

A hybrid teaching approach is used with a combination of traditional weekly interactive seminar discussions by teleconference, as well as Web-based course materials. Participants at multiple sites are connected by special software to see the same presentation simultaneously.

A unique feature of the course is the involvement of CIHR and CHSRF staff in the teaching of some of the weekly topics, such as policy makers' perspectives, and knowledge brokers as change agents. Student feedback about how their knowledge is expanded by this course is illustrated in the following two examples:

> Learning about skilled ways to apply research to practice has been extremely valuable. My other graduate classes in the health sciences have addressed many aspects of quality research, but have remained vague on relevant ways to increase effective use of research. (2007)

> I was unaware of knowledge translation models prior to this course. I likely could have located them in the literature, but participating in this course, where students have developed ideas for translation projects, and listening to feedback from our tutor experts, has really strengthened my understanding of how, when and why I might use specific models. (2008)

When asked what specifically works, participants report that they appreciate access to the course from various locations (i.e., home, office). In addition, they report that they value a pragmatic approach:

> What worked for me was the stepwise practical example of developing the basis for an innovation and going out and doing fieldwork. Conducting interviews was very enlightening for me in terms of understanding the barriers and facilitators to the adoption of innovation. The one I chose to look at was advanced access, and I am now taking what I have learned to try to move it forward in my day job. (2007)

OTC students are also required to complete a 200-hour policy practicum with a decision-maker partner. Thus, all students gain experience developing research partnerships with healthcare organizations. OTC graduates have reported that the policy practicum is a highlight of the program in terms of attaining hands-on experience to generate evidence-informed policy. The OTC program values KTE as a core required element in this policy practicum.

Western Regional Training Centre

Western Regional Training Centre for Health Services Research is a partnership between three universities: University of British Columbia (UBC), University of Alberta (UA) and University of Manitoba (UM). The WRTC program focuses on and develops student competency in the communication of research outcomes and implications to enhance evidence-informed decision-making through two main strategies: alliance with a school of journalism and field placement.

First, given that KTE involves communication, the WRTC developed a close working relationship with the UBC School of Journalism. Videoconference linkages between the two sites have presented both didactic and participatory sessions, engaging students in press release and news writing. The journalism students provide critiques on structure, writing style and use of language. These sessions have had a powerful effect on students' understanding of how to tell a story that is factually complete, compelling and concise.

Secondly, KTE is a central activity of the WRTC field placement experience.

Students spend approximately four months working full-time for a decision-maker organization on a project identified by the decision-maker. They have the opportunity to see how KTE and communication are carried out in decision-maker organizations. Also, students are responsible for presenting their field placement project work to the healthcare organization in a concise and meaningful way, thus emphasizing the importance of both the translation (making the content relevant and understandable) as well as the transfer (targeting the right communication skills) to the specific audience – for example, front-line staff or management–of their own work. These experiences are powerful precisely because the students' own work is the primary focus and students' KTE knowledge and competency are tested on a daily basis. One decision-maker commented after hosting a WRTC field placement:

> … because of the academic focus these students bring, you can be assured that the evidence brought to inform planning and decision-making is current, reliable and relevant.

One student commented:

> … [the field placement was] an opportunity to practise adapting the formal writing style of academia to a more informal style for practitioners and policy makers.

Common Features Across the Centres

To date there has been no formal evaluation of the impact of including KTE in graduate training programs. We do not know the most effective methods for increasing knowledge and skills in KTE. While decision-makers have been remarkably positive participants, we do not know the optimum intensity and duration of practicum or residency placements. A systematic evaluation of our activities, from the perspective of the participating students, faculty, decision-makers and funding agencies, is an important consideration for the future. However, in the meantime, for others interested in enhancing their KTE activities or developing new graduate learning opportunities, we observe several common elements in our programs:

- collaboration across universities within a region to share knowledge and experiences;
- active interprofessional approach across different disciplines;
- development of new KTE theory course requirements;
- development of concentrated KTE practicum course requirements with decision-makers; and

- initiation of required KTE seminars, workshops or both.

The development of training activities in the RTCs to facilitate knowledge to action has some innovative features. These include:

- sustained exposure to decision-makers in a policy practicum or residency, and not simply brief episodic encounters;
- course content about the application and evaluation of knowledge translation theoretical models;
- opportunities for practical experience in KTE;
- seminars and workshops with professionals from different disciplines who are skilled in communication.

Conclusion

As is evident from the preceding discussion, each RTC values and incorporates KTE learning opportunities for students. These include focused courses and networking opportunities with decision-makers. We note that the discussion of our own program requirements provided an opportunity for us to learn from one another and to share strategies.

Students who participate in the RTC programs value the expertise they acquire in knowledge translation and exchange. They recognize their role in promoting evidence-informed decision-making, whether as a researcher, knowledge broker or decision-maker. Upon completion of their training program, graduates have increased knowledge and skills to contribute to enhanced knowledge translation that links research results with actions to improve healthcare.

The RTCs recognize that KTE is a relatively emerging field of research. Research and evaluation are needed to identify best practices in both training in knowledge translation and in knowledge exchange strategies that work to improve policy and practice. As we provide graduate students with a foundation in KTE, the impact of their work in the field of health and nursing services research ought to be documented and evaluated.

Presently, many students in the graduate programs of the RTCs have conducted master's and doctoral research in the field of KTE. They are creating a base of research that is needed to understand and critique models, strategies and tools of knowledge translation and exchange.

The KTE focus has made the RTCs a distinctive training model and added value to applied health and nursing services research and practice. The RTCs have provided applicable ways for students to be trained, and approaches that involve decision-makers in students' experience and education.

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University Collaboration in Delivering Applied Health and Nursing Services Research Training

La collaboration universitaire dans l'offre de programmes de formation dans le domaine de la recherche appliquée en services de santé et de soins infirmiers

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University Collaboration in Delivering Applied Health and Nursing Services Research Training

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Abstract

In 2001-2002, the Canadian Health Services Research Foundation (CHSRF) and the Canadian Institutes of Health Research (CIHR) committed 10 years of funding for the creation and implementation of three Regional Training Centres to build capacity in health services and policy research in the Atlantic, Ontario and Western regions of Canada and one training centre in Quebec to focus on the development of nursing services researchers. Each RTC comprises several universities that collaborate to deliver the graduate training. The authors of this paper describe the consortium-related features of the RTCs, including approval processes, formal agreements, governance, communication, students, curriculum, administration and use of educational technology. The discussion outlines the benefits and challenges of university collaboration for participating students, faculty and universities and summarizes lessons learned.

Résumé

En 2001–2002, la Fondation canadienne de la recherche sur les services de santé (FCRSS) et les Instituts de recherche en santé du Canada (IRSC) ont alloué 10 ans de financement pour la création et la mise sur pied de quatre Centres régionaux de formation (CRF) — en Ontario, au Québec et dans les régions de l'Atlantique et de l'Ouest du Canada — afin d'accroître la capacité dans le domaine de la recherche en services et en politiques de santé et de favoriser la formation de chercheurs en services infirmiers. Chaque CRF comprend plusieurs universités qui collaborent pour offrir le programme d'études supérieures. Les auteurs de cet article décrivent les caractéristiques des CRF qui s'apparentent à celles des consortiums, y compris les processus d'approbation, les ententes officielles, la gouvernance, la communication, les étudiants, les programmes d'études, l'administration et l'emploi de la technologie d'enseignement. L'article présente les avantages et les défis de la collaboration universitaire pour les étudiants, le corps professoral et les universités et résume les leçons apprises.

Key messages

- University consortia have been successfully developed across Canada to prepare

graduate-level applied health and nursing services researchers.
- While inter-university collaboration entails considerable time and resources, the benefits outweigh the challenges.
- Respect for the autonomy, context and constraints of each university involved in the collaboration is important.
- University collaboration increases access to educational resources for students and for smaller universities, especially those located in remote areas.

The recent emphasis on building health research capacity in Canada and the significant funding allocated by the Canadian Institutes of Health Research (CIHR) and the Canadian Health Services Research Foundation (CHSRF) to the development of training centres have spawned innovative collaborations among universities. This paper focuses on the university collaborative models that underpin the four Regional Training Centres overseen by CHSRF to build capacity in applied health and nursing services research.

While significant progress has been made in bringing together faculty members from numerous universities to collaborate on research projects, teaching has tended to be solitary and less responsive to collaborative efforts. Stein and Short (2001: 418) reported in their exploratory study of collaborative degree programs that "faculty, departments, and even institutions have limited experience in working collectively with those who have previously been defined as 'competitors' rather than 'members of the team'. Though it is easy to promote collaboration, it is much more difficult to implement even minimal collaboration, much less a true alliance built upon mutual vision, support, and commitment from all partners."

There is little empirical evidence about the effectiveness of university collaborations in delivering undergraduate and graduate degree programs, and none specifically related to training in applied health services research. Based on our review of the general literature, we summarize the benefits and challenges of university collaborations and strategies to improve program success.

The benefits of inter-university collaborative academic programs include enhancement of curricula and overall program quality; maximization of limited resources and elimination of unnecessary duplication; increased accessibility and flexibility of academic offerings to students; shared decision-making, broader communication and development of trust among inter-university faculty members; increased opportunities for faculty professional development; and a shared vision and cohesive voice for participating universities (Holden-Lund et al. 1991; Offerman 1997; Prideaux et al. 2000; Stein and Short 2001; van Soeren et al. 2000).

On the other hand, challenges to inter-university education-related collaborations include differences in institutional values and culture; rivalry among participating institutions; fear of losing institutional identity and autonomy; establishment

of an effective program governance structure; unwillingness to challenge the status quo; lack of financial advantage for participating institutions; differences in faculty approach and philosophy; concerns about maintaining program quality; unexpected complexity of communication requiring additional work for faculty and staff and frequent travel to collaborative sites; underestimation of the time required for course development, approval and program administration; reticence to use distance education technologies; and logistics associated with off-site delivery, setting admission standards and fees and meeting accreditation standards (Cragg et al. 2003; Holden-Lund et al. 1991; Short and Stein 1998; Stein and Short 2001; van Soeren et al. 2000).

Strategies to increase the likelihood of success when establishing collaborative academic programs have been identified. Perhaps most important is taking the time to create a culture of collaboration by building consensus about roles and responsibilities, negotiating differences and remaining flexible. Other important activities include meeting the needs of educators across universities, addressing the academic and administrative requirements of all participating universities and establishing and maintaining programs of high academic excellence (Breitborde 1996; Hardy et al. 2004; Prideaux et al. 2000; Short and Stein 1998).

Despite the challenges, there has been encouragement in the United States and Canada to develop collaborative academic programs. For example, collaborative programs in nursing are common in both countries at the undergraduate (Hildebrand and Kirkpatrick 1995; Offerman 1997; Quinless et al. 1997) and graduate levels (Holden-Lund et al. 1991; Hildebrand and Kirkpatrick 1995; Lund et al. 1998; Quinless and Levin 1998; Pohl et al. 2001; Ciesielka et al. 2005; Long 2007).

In the remainder of this paper, we describe the consortium-related features of the CHSRF/CIHR Regional Training Centres (RTCs); outline the benefits and challenges of university collaboration at the graduate level for participating students, faculty and universities; and summarize lessons learned.

The University Collaboration Experience

The four RTCs

In 2001–2002, CHSRF and CIHR committed 10 years of funding for the creation and implementation of three training centres to build capacity in health services and policy research in the Atlantic, Ontario and Western regions of Canada and one training centre in Quebec to focus on development of nursing administration researchers. The training centres are described in detail elsewhere in this journal (Brachman et al. 2008). Each of the RTCs comprises a number of universities that collaborate to deliver the educational offerings at a graduate level. The appendix at the end of the paper summarizes the consortium-related features of the training centres.

The Atlantic Regional Training Centre (ARTC) in Applied Health Services Research is a collaborative venture among Dalhousie University in Nova Scotia, Memorial University of Newfoundland, the University of New Brunswick and the University of Prince Edward Island. It offers graduate education in applied health services research at both the master's and doctoral levels. Degrees are granted to students by the university in which they enroll, with recognition on their diploma that the degree is part of a collaborative program offered by the four universities.

Centre FERASI (Centre de formation et d'expertise en recherche en administration des services infirmiers/Training and Expertise in Research Applied to Administration of Nursing Services), a consortium of four universities (McGill, Laval, Montreal and Sherbrooke), focuses on the promotion of nursing services research through research training for master's and doctoral students and knowledge transfer. Successful students obtain various degrees in nursing, nursing administration or public health.

The Ontario Training Centre (OTC) in Health Services and Policy Research is a consortium of six Ontario universities (Lakehead, Laurentian, McMaster, Ottawa, Toronto and York) that enables master's and doctoral graduate students from a variety of disciplines (enrolled in any of 42 graduate programs) to obtain training concurrently in health services and policy research. Successful students receive a Diploma in Health Services and Policy Research in addition to their graduate degree (the exception is the University of Toronto, where students receive an equivalent qualification through the Collaborative Graduate Program in Health Services and Policy Research).

The Western Regional Training Centre (WRTC) for Health Services Research is a partnership of four academic departments at three universities (Department of Health Care and Epidemiology at the University of British Columbia [UBC], Department of Community Health Sciences at the University of Manitoba and the Faculty of Nursing and School of Public Health at the University of Alberta) that gives students enrolled in graduate programs the opportunity to take additional training in applied health services research. Students do not receive a separate credential. The WRTC also accepts students from numerous affiliated universities, including Simon Fraser University, University of Victoria, University of Northern BC, UBC–Okanagan, University of Winnipeg, Brandon University, University of Saskatchewan and University of Calgary (Brachman et al. 2008).

Consortium features of the RTCs

CONSORTIUM APPROVAL PROCESS

The ARTC developed a joint master's degree program, and the OTC developed a diploma program. Because these were new programs, all participating universities had to request approval, beginning with their own departments, through to their university boards of governors. Following approval at each university, the consortium approach to awarding a graduate degree or diploma was approved by the respective provincial

or regional body overseeing graduate education – for ARTC, the Maritime Provinces Higher Education Commission and for OTC, the Ontario Council on Graduate Studies (OCGS). In Ontario, this was the first time that the OCGS had been asked for approval to offer a Type 2 Diploma (a program of study taken concurrently with a graduate degree program) via a consortium approach.

Because Centre FERASI developed new courses that were incorporated into existing graduate programs, new program approval was not required. Similarly, the WRTC courses and seminar series were additional educational offerings in the graduate programs at participating universities; formal approval was not required. For both Centre FERASI and the WRTC, pre-existing university agreements in Quebec and the Western provinces, respectively, enabled students at participating universities to take courses at the other universities, facilitating the offering of RTC courses. In Ontario, students are normally restricted to one course taken at another university; however, to facilitate the OTC diploma program, OCGS lifted this restriction. In addition, the participating universities agreed to waive the Ontario Visiting Graduate Student course fees for these students in anticipation of equitable exchanges of students over the long term.

FORMAL AGREEMENT AMONG CONSORTIUM PARTNERS

The ARTC and Centre FERASI both have signed agreements among participating universities, while the OTC and WRTC do not. In the ARTC, the deans of graduate studies (or their equivalent) of the four universities signed a memorandum of understanding outlining program regulations, including how administrative differences among universities would be addressed. In Centre FERASI, the Vice Presidents (Research) from each of the four participating universities signed an agreement outlining each university's role, annual financial contribution and allocated number of student positions.

UNIVERSITY PARTICIPATION IN GOVERNANCE

Each RTC is overseen by an Advisory Board that, in addition to faculty, decision-maker and student members, includes representation from a number of the participating universities. In the ARTC, the Advisory Board includes the four deans of graduate studies; similarly, in Centre FERASI, the board includes the deans/directors of nursing and researchers from each university. The OTC Advisory Board terms of reference specify membership of at least two senior university administrators. The WRTC board does not include senior university administrators.

COMMUNICATION WITHIN CONSORTIA

Communication among principal faculty in the participating universities is crucial to building trust and a truly collaborative program. All four training centres use modern

communication technology (e.g., Web-based instruction, teleconferencing, videoconferencing) to facilitate regular meetings. On-site meetings are held at least once a year to discuss such issues as strategic planning and sustainability. Between meetings, the Program Managers communicate regularly with the principal faculty and site directors or coordinators.

CURRICULUM

All the RTCs have developed new courses in applied health or nursing services research: eight in the ARTC, five in Centre FERASI, 12 in the OTC and three in the WRTC. Fundamental to each RTC is the shared responsibility across universities for development and course offerings as well as (on a rotating basis) workshops or conferences and Summer/Fall Institutes. If a faculty member who developed a course is not available, training centre faculty at any of the participating universities are invited to offer the course.

ADMINISTRATION OF CONSORTIA

Each RTC has a senior faculty director/principal with overall responsibility for the centre. As well, each RTC has a site director or coordinator for each participating university to ensure program consistency with the policies and regulations of their respective university, to coordinate student admissions (generally site-specific) and to monitor student progress. Critical to the smooth operation of these university consortia is the full-time Program Manager, who oversees all components of the RTC, including student recruitment, enrolment and orientation; student participation in course offerings, institutes and field placements; and communication with government, regional health authorities, the training centre faculty, Advisory Board, director, site directors, administrative support and graduate program staff. Centre FERASI and the OTC have a number of committees (e.g., Curriculum Committee) with representation from each participating university. In addition, most of the training centres have site-specific admissions committees.

EDUCATIONAL TECHNOLOGY

Given the considerable distances between the collaborating universities, there is a heavy reliance on educational technology to ensure that students have access to the RTC courses. All ARTC courses are Web-based; Centre FERASI uses videoconferencing; the OTC uses the Web and teleconferencing; and the WRTC uses teleconferencing and some videoconferencing. Yet, there are a number of educational opportunities that are offered on site that require students to travel fair distances and be away from home for periods of time, for example, the week-long institutes.

Benefits of university collaboration

STUDENTS

The consortium model broadens the scope of educational benefits for students. In all four RTCs, students are able to enroll in a wider array of courses offered by participating universities. Given that many courses developed by the RTCs are available by distance education, geographic separation of universities is not a barrier. The use of distance education technologies adds flexibility; for example, students can access Web-based course material at their convenience. Students are also exposed to technologies that are rapidly becoming common communication and education tools. RTC students have access to faculty from all the participating universities who teach their courses, and participate in educational offerings such as regional workshops and Summer or Fall Institutes. This approach gives students access to a much broader range of disciplines and experts than traditional programs based within a single university. Students from the participating universities have opportunities to network and learn from one another by taking courses together and by participating in such activities as the regional workshops offered by the ARTC, the Summer Institute offered by the OTC and the Fall Institute offered by the WRTC.

FACULTY

Participating faculty have an opportunity to collaborate with faculty from various disciplines in other universities. Participation in a consortium focused on education can lead to additional opportunities to collaborate. For example, in the ARTC, principals from all four participating sites successfully competed for funding for an applied health services research project related to assistive technology that also provided financial support for students in the program.

Through the university consortium, faculty are exposed to new learning opportunities through educational offerings such as the annual institutes. For instance, in 2007, the OTC mounted a Summer Institute on regionalization of health services, a concept that has only recently been introduced in Ontario, and one that faculty appreciated learning more about. Through regular meetings with colleagues from other universities, faculty jointly create innovative learning opportunities such as post-training fellowships that are co-sponsored, co-hired and co-supervised by faculty and decision-makers. The WRTC co-hosted the CIHR Summer Institute in Whistler, BC, in 2004 that brought together 60 graduate students and numerous faculty and decision-makers from across the country. Because many of the RTC offerings rely on distance education technology, faculty have the opportunity to learn more about distance education for use in future course offerings. These experiences may contribute to faculty renewal and retention.

UNIVERSITIES

Through participation in a university consortium, universities build program capacity by increasing the number and breadth of educational offerings available to their students. This benefit is especially pertinent to smaller and geographically remote universities that have more limited faculty resources. Given the heavy emphasis of the RTCs on partnerships with policy makers, the universities have an opportunity (which they might not otherwise create for themselves) to develop or strengthen their links with these organizations, forming associations that may lead to future joint endeavours. The RTCs have provided resources and support to facilitate the offering of courses via distance education technology, a strategy that has helped some universities move into this modality more quickly than they might have done otherwise. While universities recognize the increasing importance of interdisciplinary initiatives, they usually do not have the resources to pursue them. With the focus on interdisciplinarity, the RTCs have created a model for future programs. In the case where the RTCs have led to the creation of new graduate programs, one result has been increased revenue for the universities. Evidence of the benefits of the consortium approach to building capacity through the RTCs is apparent by the interest shown by other universities in becoming part of the consortium. For example, Université de Sherbrooke has recently joined the Centre FERASI consortium. With the affiliate-student status in the WRTC, students and faculty from smaller universities across the western provinces have been able to participate in the WRTC program.

Challenges of university collaboration

In spite of the benefits, academic consortia are complex and present challenges for students, faculty and institutions.

STUDENTS

While participation in a training centre increases students' exposure to faculty and students at other universities, it can add to the complexity of their graduate education given the increased workload and time required to travel to events such as the Summer/Fall Institutes or regional workshops. There can be an added financial burden because some universities charge additional fees for the RTC offerings. Some students find distance education technology a challenge and claim it distracts from their learning. Participation in RTC offerings such as additional courses and field placements can extend the time students require to complete their degrees.

FACULTY

A university must ensure that it has sufficient faculty resources to offer its courses. Consequently, when faculty choose to teach RTC courses, this shift in focus from their home university to a university consortium may not be supported by their department

chairs and deans. The RTC course may compound an already heavy workload with no additional financial compensation. When instructors are not able to teach the training centre course they developed, the responsibility of delivering that course falls on other faculty in the consortium, a situation that can create tension and additional workloads for faculty who want to see the course offered but feel overloaded.

Another considerable challenge is the commitment of time required to manage the program, a commitment that is not always acknowledged or given academic credit. Additional time is required to attend regular meetings of principal faculty within each training centre to ensure smooth operation and to address emerging issues as quickly as possible. In addition, there are regional workshops and Summer or Fall Institutes to attend that often entail substantial travel and demand time away from other work commitments. Training centre participation is sometimes seen as involvement in a "project" rather than an educational endeavour. In this regard, especially for junior faculty, time spent on training centre activities robs time from the scholarly activities traditionally required for promotion and tenure.

UNIVERSITIES

While some RTCs have succeeded in obtaining external funds for course development, additional funds have been unavailable to cover the costs of teaching. Therefore, universities find themselves burdened with the responsibility of teaching more courses with the same faculty resources. University administrators may perceive that faculty participation in a university consortium program represents time taken away from meeting the university's own needs. Balancing consortium goals with individual institutional autonomy can be a challenge. Universities participating in a consortium may each have different rules and regulations. For example, in the ARTC, grading schemes differed among the four universities. In response, a protocol was developed to convert the grades of all students into a standard grade among the four institutions. Other examples include differences in the name of the degree granted by each university and differences in the dates of midterm breaks, which complicate course attendance. While there is room for some accommodation, the four training centres are committed to respecting the autonomy of the participating universities and to being flexible in developing strategies to achieve a common goal. As summarized by a principal of one training centre: "The essence of the training centre is that it has a common destination, different starting points, common vehicles and different routes."

Lessons Learned

Perhaps the most important lesson learned by the training centres is the amount of time required to set up and maintain a collaborative program across universities.

Other universities planning similar initiatives should allow liberal time to create a culture of collaboration, plan the curriculum and secure academic approval at various levels within each participating university and from regional or provincial approval bodies. Substantial time is also needed for regular meetings of the management team and principal faculty, including face-to-face meetings, with their associated travel time.

University representation on the planning and implementation committees for each RTC was instrumental to their success. Each RTC's management and advisory committees include, among others, faculty, university academic administrators and students from some or all of the participating universities. The broad representation ensures that the program is meeting the needs of each university and will help sustain the program after federal government funding ends.

The existing agreements in Quebec and Western Canada that allow students to take courses at other universities facilitated the process of offering collaborative graduate education in applied health and nursing services research. The lifting of the restriction by OCGS that allowed OTC students to take more than one course at another university in Ontario gave the students full access to OTC courses. Universities planning collaborative education programs would benefit from ensuring that such agreements are in place to enhance student accessibility to course offerings at participating universities.

All the training centres use distance technology to facilitate curriculum delivery and administrative processes, including teleconferencing, videoconferencing and Web-based instruction. Although distance technology is essential for collaborative education programs, it must be combined with face-to-face meetings and educational sessions to allow the networking that is essential to collaborative initiatives.

Finally, reciprocal and flexible relationships are essential elements of university collaboration. Each participating university must be willing to assume its share of responsibility for curriculum delivery and program management. The success of a consortium academic program depends on the sustained commitment of all the participating universities to the delivery of a dynamic, high-quality educational experience. The collaboration will work in the long term only if all participating universities are willing to be reciprocal and flexible as needed. At the same time, while working towards a common goal, each university must respect the autonomy, context and constraints of the others.

Conclusion

University consortia have been successfully developed across Canada to prepare graduate-level applied health and nursing services researchers. The consortia facilitate the sharing of resources and the reduction of duplication while improving access for students. While successful university collaboration entails considerable expenditure

of time and resources, the benefits for students, faculty and universities outweigh the challenges. Increasingly, university collaboration will be important for the creation of new capacities and resources. The RTC models described in this paper illustrate the complexities of collaboration as well as approaches to facilitating its success.

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APPENDIX. Consortium-related features of the Regional Training Centres

	ARTC	Centre FERASI	OTC	WRTC
Number of Participating Universities	4	4	6	3 (+ 8 affiliate universities*)
Credential Offered	Creation of a joint master's degree in Applied Health Services Research (Dalhousie, University of New Brunswick, University of Prince Edward Island), MSc (Medicine) (Memorial University) (same degree with different title); PhD in Community Health with specialization in applied health services research	Creation of curriculum that was integrated into the following degree programs: • MSc in Nursing (McGill, Laval, Sherbrooke) • MSc in Nursing Administration (Montreal) • PhD in Nursing (McGill) • PhD in Nursing Services Administration (Montreal) • PhD in Public Health (Montreal) • PhD in Interdisciplinary Studies (Laval)	Diploma in Health Services and Policy Research (program taken concurrently with graduate degree); exception is the University of Toronto, where students receive an equivalent qualification through the Collaborative Graduate Program in Health Services and Policy Research	No separate credential; RTC course offerings supplement existing degree requirements. Health Services Research stream added to existing degree program at UBC
Students	Enrolled at one of the 4 universities and abide by that university's academic regulations	Enrolled at one of the 4 universities and abide by that university's academic regulations	Enrolled in any of 42 graduate programs (master's and PhD) offered by the participating universities	Enrolled in existing graduate programs (master's and PhD) offered by participating universities

	ARTC	Centre FERASI	OTC	WRTC
Approval Process	Multi-level process at each university: academic unit housing program, graduate studies, senate, board of regents; Maritime Provinces Higher Education Commission (for Dalhousie, University of New Brunswick and University of PEI)	Usual university process followed for approval of new graduate courses developed by the Centre FERASI Centre FERASI students able to enroll in graduate courses at any of the participating universities because of a pre-existing agreement between university presidents in Quebec (CREPUQ)	Multi-level at each university: graduate studies, senate, board of governors; and Ontario Council on Graduate Studies (OCGS) approval of Type 2 Diploma offered via a university consortium – permitted expansion of Ontario Visiting Graduate Student (OVGS) policy to allow students to take more than 1 course at a participating university; usual university process followed for approval of new graduate courses developed by OTC	No approval process required WRTC students able to enroll in graduate courses at any of the participating universities because of a pre-existing agreement (Western Deans' Agreement). Without paying additional tuition, graduate students of the member institutions may take courses at another member institution, if the course is not available at their home university
Formal Agreement	Memorandum of understanding signed by each university outlining program regulations, including how to address administrative differences among universities	Signed agreement among the Vice Presidents (Research) from the 4 universities outlining each university's role, annual financial contribution and number of student positions	No formal agreement among universities	No formal agreement among universities; annual financial agreements between UBC and UM/UA
University Participation in Governance	Advisory Board includes (among others) the deans of graduate studies from each of the 4 universities	Advisory Board includes (among others) the deans/directors of nursing from each of the 4 universities and a researcher (not necessarily from nursing) from each university	Advisory Board includes (among others) at least 2 senior administrators from participating universities	Advisory Board does not include senior university administrators
Communication	Weekly and biweekly online meetings and 3 face-to-face meetings annually among management team that includes a principal faculty from each of the participating universities	Monthly videoconference of Executive Committee, including a principal faculty from each of the participating universities	Initially, weekly teleconferences of principal faculty (at least one from each participating university) and currently, every 3 weeks; face-to-face meetings 1–2 times per year	Teleconferences every 4–6 weeks of site directors; face-to-face meetings several times a year

	ARTC	Centre FERASI	OTC	WRTC
Curriculum	Joint master's degree in Applied Health Services Research or MSc (Medicine): 8 Web-based courses, a 16-week workplace residency, 5 regional workshops, thesis PhD: Complete at least 8 courses, comprehensive exam and thesis with a focus on applied health services research	5 graduate courses have been developed and incorporated into the curricula of the participating universities: (1) nursing services organization; (2) nursing workforce determinants (MSc and PhD); (3) nursing human resources planning (MSc); (4) nursing administration policies; (5) knowledge and change in public health PhD students are required to take 3 of these courses as part of their graduate degree, and MSc students are required to take 2 of these courses as part of their graduate degree PhD students complete a 4-year research residency with a decision-maker partner; MSc students are paired with a decision-maker partner for either a practicum or to inform the topic of the thesis or scholarly paper	OTC Diploma – minimum of 3 half-course credits in addition to graduate degree plus thesis or scholarly paper focused on applied health services research; learning opportunities include courses offered at any of the 6 universities (12 OTC courses have been developed), 5-day Summer Institute (mandatory), 200-hour policy practicum (mandatory), 200-hour research internship; each student completes an individualized learning plan and must meet the 5 competencies of a health services and policy researcher that include understanding: (1) Canadian healthcare system; (2) health services research methods; (3) theories of population health; (4) theories of knowledge production; (5) knowledge exchange	WRTC MSc and PhD students required to take 2 courses and 1 seminar series in addition to graduate program, complete a 4-month field placement, attend the 3-day Fall Institute and CAHSPR; affiliate students required to take 1 course and 1 seminar in addition to graduate program requirements; field placements are optional for affiliate students
Administration	1 full-time Program Manager and 4 part-time Program Coordinators (1 at each university) and principal faculty at each university Site-specific Admissions committees	Director, 1 full-time Program Manager, 1 full-time administrative assistant, part-time administrative support at each university; principal faculty at each university Bursary Committee, Scientific Committee, ad hoc committees, all with representation from each university	Director, 1 full-time Program Manager, 1 part-time administrative assistant, site directors at each university, part-time administrative support at each university Curriculum committee with representation from each university and site-specific Admissions committees	Director, 1 full-time Program Manager, site directors at each university, part-time site coordinator at each university Site-specific Admissions committees
Educational Technology	Web-based courses	Videoconferencing	Web-based courses Teleconferencing	Teleconferencing and some videoconferencing

* Universities in Western Canada that are not primary sites in the WRTC become affiliates if a student from one of these universities is also accepted into the WRTC program.

The Fourth-Year Review: Different Paths to Success

L'examen de la quatrième année : différentes voies vers la réussite

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Abstract

An independent mid-term review of Regional Training Centres (RTCs) to prepare health and nursing services researchers found that the centres were doing a remarkable job in achieving the objectives of the program. The RTCs were using innovative and varied organizational models to deliver high-quality education in applied health and nursing services research, and were offering these programs at multiple university sites, often across provinces. The RTCs received excellent support from the participating universities, and were attracting students willing to exceed the formal degree requirements of their universities to gain access to decision-makers in placements/residencies and institutes and workshops. The decision-makers, in turn, valued this contact as it provided access to a cadre of well prepared, potential future employees and, significantly, to the body of research that the students produced. The major challenge now for the RTCs, the universities and the funders lies in developing appropriate models for sustaining this enormously successful experiment when the 10-year funding period ends.

Résumé

Selon un examen indépendant de mi-parcours effectué en 2005, les Centres régionaux de formation (CRF) réalisaient un travail remarquable dans l'atteinte des objectifs du programme. Les CRF utilisaient des modèles organisationnels novateurs et variés afin d'offrir des programmes de formation de qualité dans le domaine de la recherche appliquée en services de santé et de soins infirmiers. Ces programmes étaient offerts dans plusieurs universités et souvent dans des provinces autres que celles où se trouvaient les Centres. Les CRF recevaient un appui solide des universités et attiraient des étudiants désireux de dépasser les exigences officielles requises par leur université pour obtenir leur diplôme afin d'avoir accès aux décideurs lors de stages ou dans des établissements ou des ateliers. Les décideurs, quant à eux, avaient à cœur ce contact puisqu'il donnait accès à un cadre de futurs employés bien préparés et, de façon significative, à l'ensemble de la recherche effectuée par les étudiants. Actuellement, le grand défi pour les CRF, les universités et les bailleurs de fonds consiste à élaborer des modèles valables pour soutenir cette expérience grandement réussie au terme de la période de financement de 10 ans.

Key messages

- Highly innovative university programs that operate across institutional and provincial boundaries and that require the involvement of organizations beyond the universities present challenges that must be understood by all concerned, particularly the funders.
- Achieving success in such programs requires that funders, institutions and awardees collaborate in a flexible way, particularly during the early stages of the award.
- This flexible cooperation will be important as the RTCs, which are seen as successful by all partners, seek to establish sustainability at the end of the funding period.

The purpose in establishing the Regional Training Centres (RTCs) – the Western Regional Training Centre (WRTC), the Ontario Training Centre (OTC), Quebec's Centre de formation et d'expertise en recherche en administration des services infirmiers (FERASI), the Atlantic Regional Training Centre (ARTC) and one national centre, the Centre for Knowledge Transfer – was to increase the number of applied health and nursing services researchers at the graduate level and, whenever possible, to create synergy with other programs of the funders, the Canadian Health Services Research Foundation (CHSRF) and the Canadian Institutes of Health Research (CIHR) (see Conrad 2008 for a discussion of

this partnership). The funders hoped that by encouraging flexibility in the RTCs' program development, new and different educational models would emerge. The success of four of the centres, each unique in its approach, attests to the fulfillment of that hope.

The funders' request for proposals stipulated some shared requirements: a single training program across each region's sites, based on local needs and resources; the enrolment of students from diverse disciplines; provision of student placements/residencies in decision-making organizations; and training in knowledge translation and exchange (KTE; see D'Amour et al. 2008) and ethics. A further requirement was an external mid-term review of each centre. One or both of the authors were members of every review.

After the evaluations, four RTCs were recommended for continued funding without condition. As the national Centre for Knowledge Transfer was unable to offer placements/residencies, the funders accepted the recommendation of the review panel that its funding not be continued.

This paper is based on a 2005 report prepared by the authors for the Board of Trustees of CHSRF. That report, in turn, was informed by the detailed reports of the individual review panels that visited each RTC. Our paper, therefore, is a snapshot of the program in its fourth year of operation. Since then, the RTCs have evolved, partly in response to the reviews, and for that reason, some of our generalizations may no longer apply to every centre. The RTCs as they presently function are covered by other papers in this special journal issue (e.g., Brachman et al. 2008).

The Program

Offering programs with uniform requirements across different universities represented a considerable challenge. Each RTC had to develop standards and requirements common to all students while respecting the degree requirements of the institutions in which the students were pursuing their graduate degrees. The core curriculum, therefore, had to incorporate the required interdisciplinary training in applied health and nursing services research and knowledge transfer (including placements with decision-maker organizations) as well as research ethics, but without overloading the students to the point that the program interfered with the degree requirements of their home universities. The RTCs successfully met this challenge. The pathway to success, however, was different for each centre. Each developed its own organizational and methodological approach:

- The WRTC designed a core curriculum to be delivered at major sites in British Columbia and Manitoba (sites in Alberta were planned at the time of the review and are now in place). This simple model allowed this centre to be established quickly and effectively.

- The ARTC established a free-standing, joint graduate program across four universities and four provinces, an unprecedented accomplishment that required each university to cede some elements of direct control over an academic program leading to a degree in its name.
- The Centre FERASI created a new specialist stream in nursing administration for existing graduate programs (doctoral and master's) at three universities, with formal written agreements specifying the institutional support, including a significant financial contribution.
- The OTC developed a Diploma in Health Services and Policy Research across six universities, requiring students to attain prescribed core competencies.

Further, each RTC established an effective mechanism for student placements or residencies in decision-maker organizations – perhaps the most valuable program component from the perspective of the community and the students.

Delivery of the curriculum in each centre engaged significant numbers of experienced and committed faculty from a range of disciplines, many outside traditional health fields. Most assumed their RTC responsibilities in addition to their usual teaching load. The faculty with whom we spoke were attracted to the RTCs by the program's importance and by the perceived high quality of the students.

Some of the CHSRF/CIHR chairs also took active roles within the RTCs. Their contributions ranged from directing one of the centres (the OTC) to participating in the teaching program. Students of the chairs were frequently trainees within the RTCs.

Just as different approaches evolved in each centre, initial implementation produced different results. For example, Web-based courses emerged, but their success at the time of the review varied among the centres. Some locations had little experience with electronic course delivery and were unprepared for the considerable investment of faculty time. Others with more experience had greater success. With increased experience, there is potential for cooperation among the RTCs, both in terms of process and course content, leading possibly to national Web-based courses – for example, on KTE or research methods.

The RTCs also developed institutes, workshops or equivalents in which students, faculty and decision-makers meet. These provided opportunities for students to interact with decision-makers and with one another over relevant topics.

The Students

The students entering the RTCs came from very diverse backgrounds in health and other disciplines, including education, sociology, social work, environmental studies and political science. Our contact with them was among the most satisfying and enjoy-

able aspects of the site visits. The students were articulate, confident and very committed to health services research.

Unlike the ARTC, where there was a new, free-standing degree program, the students at the other centres were undertaking a curriculum that added considerable work to the graduate degree requirements of their home universities. Despite the extra load, they sought admission to the RTCs because the placements/residencies and the institutes would offer unprecedented access to decision-makers, the possibility (at the OTC) of additional accreditation and an additional stipend for RTC study. The stipend has been especially important for practising nurses entering the Centre FERASI's program, as it has allowed them to continue their education without an unacceptable drop in income. For nurses, this may represent a significant means of enhancing recruitment and retention.

In general, the students benefited from their RTC experience by leveraging their diverse backgrounds with the unique program content. Following graduation, their interests and career plans appeared to be equally diversified between academia and the applied sector.

The Decision-makers

RTC decision-makers included policy makers from government, regional health authorities, local community advocacy groups, small service organizations, major hospitals and national committees. They were an essential part of the program, providing student placements and residencies, sitting on the RTC Advisory Boards and participating in the institutes and workshops.

Students saw the decision-makers as an especially significant resource because this contact with the applied sector helped them gain a sense of real-word accountabilities. In particular, students could observe the performance of the health system and the influence of research upon it, and gain insight into how research literacy, evidence-informed decision-making and knowledge transfer operate at that level.

For their part, decision-makers placed high value on their association with the RTCs, often committing significant human or financial resources to the relationship. Besides appreciating the opportunity to influence training and research, they viewed the centres, more pragmatically, as a means of furthering the education of existing staff and as a source of future employees. The decision-makers also valued their contact with the faculty researchers, who were a source of information and advice.

The Institutions

The development of a multi-site, interdisciplinary program required strong support from the senior administration and governance bodies of the institutions involved.

Institutional support was ongoing, particularly where some form of inter-university accreditation was present, or where formal agreements were in place.

While the senior administrators were generally well informed about the RTCs, they did not appear to have recognized the full potential of their successful operations, particularly the mutually beneficial, senior-level relationships between the centres and the applied sector. In the future, institutions, especially those wishing to embed themselves more firmly in their surrounding communities, will be able both to utilize the contacts that already exist between the RTCs and decision-makers and to create new partnerships inspired by the RTC model. We saw a need for improved marketing of the accomplishments and potential of the RTCs within participating institutions.

Key Issues

Here we describe some early challenges and successes of the RTC enterprise. We then suggest some aspects that will become increasingly important as the centres evolve and look towards a future beyond the CHSRF/CIHR grant.

Early difficulties

There were some stumbles on the path to success.

RELIABILITY OF DATA

At the time of the review, there were no reliable data for the program as a whole related to the numbers, previous experience and post-program placement of the students involved. Each RTC was collecting information, but there was no agreement across the regions, for example, about how to define an RTC student. In some cases, any student registered in an RTC course was deemed a student, while in others, only those receiving a stipend from the RTC were considered students. It is our understanding that this significant difficulty concerning data has now been addressed. The concern was deeper than mere administrative tidiness. The RTC program, after all, was widely viewed as a bold experiment in increasing the capacity for health services research in Canada; assessing the results of that experiment therefore requires high-quality data about the students who participate in the programs.

STRATEGIC PLANNING

The RTCs struggled with two related requirements of the program. They were (a) to develop some form of advisory body and (b) to undertake strategic planning for the development and long-term future of the centre, providing an accountability framework to guide progress towards the strategic objectives.

At the time of the review, all the RTCs had established Advisory Boards. Typically, these included the most relevant stakeholders as members, acted as an important

bridge across universities and provided good personal support to the directors. However, the form, frequency of meeting and formal responsibilities of the boards varied, and while these bodies dealt occasionally with strategic issues, their involvement in this sphere was inconsistent.

The RTCs recognized that they needed to engage in strategic planning to address their broad, long-term issues, but the results at the time of the review were mixed. Only one centre provided a thorough analysis of the environment and possible sources of revenue once the initial funding ended. The others generated operational rather than strategic plans, and omitted some important considerations. Missing elements included the link between the strategic direction of the RTCs and the strategic plans of the collaborating universities, the challenge of enhancing the profile and relevance of the centres to potential funders now and in the future, and the impact on the RTCs of changing internal and external environments.

IMPLEMENTATION

Many RTC directors found the first two years of implementation to be frustrating: they experienced onerous and shifting program and financial reporting requirements, user-unfriendly databases and a sense that CHSRF/CIHR did not understand the academy. Conversely, the funders were perplexed by what they saw as professors and institutions unwilling to conform to the conditions of the awards.

In retrospect, this disconnect was understandable. The CHSRF/CIHR CADRE partnership (Capacity for Applied and Developmental Research and Evaluation), under which the RTCs were funded (Conrad 2008), represented a major thrust to attack directly the gap in applied health and nursing services research capacity in Canada. However, because the CADRE initiative itself was so innovative, there were no templates to follow. Given the pressures of the day, it is not surprising that decisions about the implementation and administrative underpinnings of the RTC program were made too quickly by both the funders and the awardees. The granting agency, by working collaboratively over time with the award holders, was able to identify the difficulties and help address them so that by the time of the review, most of the RTCs were operating smoothly.

Factors for Success

COMMITTED PERSONNEL

Like the other programs in CADRE, the RTCs are highly innovative and depended upon individuals in the academy who would be attracted by the vision and willing to commit to the objectives. That, in our view, is one of the primary factors for the RTC programs' success: the faculty who stepped forward to accept the challenge of establishing these centres were highly dedicated to their overall purpose. The cynical might observe that the funding was the principal attraction. On the other hand, the people

who applied for these awards were taking on a good deal of additional work with few obvious rewards. Without a group of applicants who were commited to the discipline, the RTCs would have failed.

CONDITIONS ATTACHED TO THE AWARDS

The RTCs' funding was contingent upon their meeting the following conditions:

- an implementation commitment of 10 years, a degree of security unprecedented in the academic research environment;
- financial contributions from decision-maker partners and the institutions, resulting in a leverage of funds in many cases beyond the initial required sums;
- a rigorous selection process for the awards, involving a two-tiered, competitive, internationally peer-reviewed process to ensure excellence;
- hiring of an administrative manager for each RTC to allow the academics to concentrate on academic matters: without such an administrator, the professors would have been overwhelmed with disparate claims on their time and attention.

PROGRAM DESIGN: A COLLABORATIVE ENVIRONMENT

In spite of the initial difficulties and misunderstandings described above, the collaborative approach that emerged in the design of the RTC programs is undoubtedly key to their eventual success. This experience contains, perhaps, a lesson for CHSRF/CIHR and other funders: innovative programs are more likely to succeed in an environment of mutual trust, in which both the awardees and the funders understand each other's requirements and work together to produce the conditions that ensure those requirements can be met.

The evolving academic environment

The environment in which the RTCs were conceived was very different from the environment after four years of operation. That evolution has continued at a very rapid pace and will present both challenges and opportunities for the RTCs. Some elements of the changes have included:

- greater availability of research funds for health services research, as the result of greater investment in research by former federal governments;
- expansion of the mandate of CIHR to include health research in all disciplines;
- the need to replace aging faculty, and to expand graduate programs to meet that need;
- greater interest by several universities in health services research with the establishment of new, free-standing programs and research institutes; and
- increased competition for graduate students among the disciplines.

Sustainability

The issue of financial sustainability is considered in another paper (Montelpare et al. 2008). From the reviewers' perspective, it was apparent that the RTCs achieved much of their success by exploiting the momentum derived from the initial funding and its 10-year term. That momentum may disappear once the grants end.

For any particular centre, sustainability may or may not imply continuation in its current form. Much depends on the individual environment. If that environment, internal or external, has changed or is changing, then "sustainability" may have a different meaning for that RTC.

Each of the RTCs is to some degree institutionalized, and all involve more than one institution. In the case of those that offer special accreditation, it could be argued that the institutions have made a commitment to continue to offer their program even if a particular RTC should cease to exist. While this assumption may be valid, it is also perhaps naïve. Programs depend for their success on a sufficient number of applicants, and there is no doubt that the existence of the RTCs, and particularly the stipends that they offer, attract students from a diversity of disciplines. Moreover, certain key aspects of the programs – such as coordination among the participating institutions, placements/residencies and the institutes/workshops – require at least a minimal infrastructure and moderate levels of funding.

Further, the mid-term review revealed that decision-makers value the RTCs as a source of employees, a resource for the education of their existing staff and as a fount of research information. What a significant development for the program, one that mutually benefits students, institutions and decision-maker partners!

The greatest challenge lies in maintaining the funds needed to support the current programs or some similar version of them: infrastructure, multiple sites, placements/residencies, institutes/workshops and students. Each RTC will have different opportunities: for example, in at least one centre, the provincial government may be willing to increase its contribution.

Part of the solution may lie in a more entrepreneurial approach. A few possibilities include:

- a multi-year funding agreement with decision-maker organizations for the support of students in placements;
- agreement on a retainer fee for the delivery of a specified set of services;
- charging consultant fees for delivery of research services;
- development of an educational module, perhaps with some form of accreditation, that could be delivered, for a fee, to members of decision-maker organizations.

The responsibility for addressing sustainability should be shared by the RTC award holders, the institutions and the funding bodies. The current success of the centres bodes well for finding a solution to the issue of their viability.

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Does It Matter? Decision-maker Perceptions on the Impact of the Regional Training Centres

De quelle importance : le point de vue des décideurs sur l'influence des Centres régionaux de formation

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Abstract
A key feature of the Regional Training Centres (RTCs) is the scope and nature of their engagement with decision-makers. While the RTCs may believe that they have an excellent association with decision-makers, is that belief shared? The authors of this paper draw on the results of a survey of decision-makers undertaken by the Canadian Health Services Research Foundation (CHSRF) as part of the preparation

for the fourth-year assessment and evaluation of the RTCs. The discussion encompasses three substantive issues: (1) decision-makers' assessment of the added value of the RTCs, (2) the RTCs' ability to effect cultural change in decision-maker organizations and (3) the experience and value of the internship/placement to the decision-maker organization.

Résumé

L'ampleur et la nature de leur collaboration avec les décideurs sont des caractéristiques fondamentales des Centres régionaux de formation (CRF). Même si les CRF croient qu'ils jouissent d'une bonne association avec les décideurs, cette opinion est-elle partagée? Les auteurs de cet article se fondent sur les résultats d'un sondage effectué par la Fondation canadienne de la recherche sur les services de santé (FCRSS) dans le cadre de la préparation à l'examen et à l'évaluation de la quatrième année des CRF. L'article englobe trois questions importantes : (1) l'évaluation des décideurs de la valeur ajoutée des CRF, (2) la capacité des CRF d'effectuer des changements culturels dans les organismes décisionnels, et (3) l'expérience de l'organisme décisionnel concernant le stage et la valeur qui y est associée.

Key messages

- The RTCs have significantly changed the landscape of applied health services research.
- The RTC intern brings to the organization a set of skills that it either currently lacks or needs to develop.
- The RTCs should develop indicators jointly with decision-makers that mark progress and measure change.

The Regional Training Centres (RTCs) were established by the Canadian Health Services Research Foundation (CHSRF) as part of the CADRE initiative. CADRE – Capacity for Applied and Developmental Research and Evaluation – was designed to create the conditions to enhance health services research capacity in Canada, and to re-orient and re-focus the work of health researchers towards the application and use of research in health services decision- and policy making. (See Conrad 2008 for a discussion of the CADRE program.)

A key feature of the RTCs is the scope and nature of their engagement with decision-makers. This engagement takes many forms, including decision-maker membership on RTC Advisory Boards, participation in RTC seminars and workshops, provi-

sion of placements for RTC students and, on occasion, membership on student thesis committees. While the RTCs may believe that they have an excellent association with decision-makers, is there any evidence to indicate that such a belief is shared? This paper draws on the results of a survey of decision-makers undertaken by CHSRF as part of the preparation for the fourth-year assessment and evaluation of the RTCs.

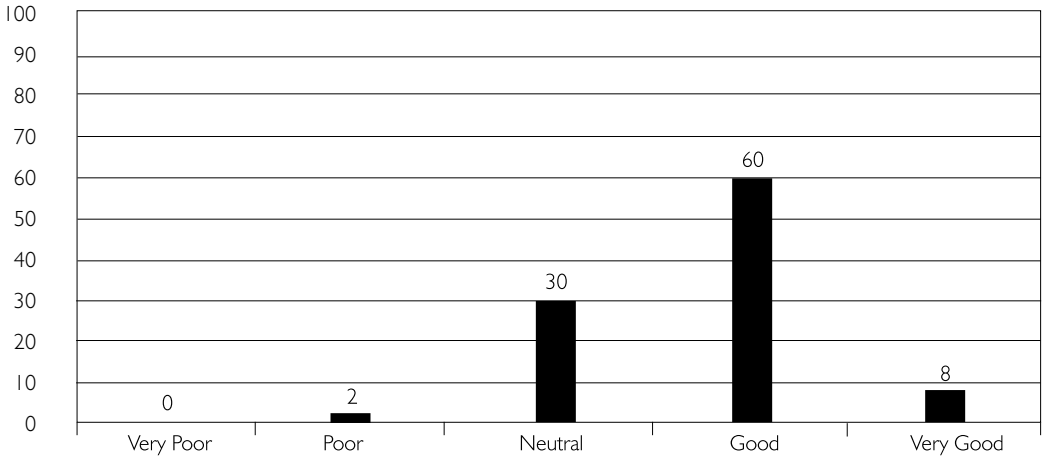
The first four years of each training centre were dedicated to setting up infrastructure and educational programs. The purpose of the fourth-year review, under the assumption that the full impact of the RTCs would appear over the remaining six years of CHSRF funding, was to gain enough information and confidence to continue each award. In this regard, the review examined the RTCs' progress against their stated objectives and assessed each program's future viability. The focus of the fourth-year review was on quality improvement and strengthening the centres over the remaining (six) years of the award. (See Davey and Altman 2008 for a discussion of the review and its findings.) By means of this process, CHSRF sought to reassure all stakeholders that the investment in this component of the CADRE program would, both in terms of time and money, demonstrate significant impact by the year 2011 and have a major effect on health services and nursing research capacity within the next two decades.

Survey Methods

As part of the fourth-year review, four distinct online surveys were developed and analyzed by CHSRF staff. The online surveys were distributed by each RTC to key stakeholders – students, participating faculty, principals and decision-makers. An e-mail was sent to a purposive sample of participants identified by each RTC, inviting them to complete the online survey (Survey Monkey). The surveys were distributed during 2004 and 2005. The reason for the difference in distribution times was that the Ontario Regional Training Centre was established a year after the others. Responses to each survey were submitted to a secure site to which only CHSRF had direct access. This paper discusses the responses of the decision-maker (DM) group.

The invitation to complete the survey was sent to a total of 71 DMs with 37 responding, a completion rate of 52%. The breakdown per RTC was: Atlantic Regional Training Centre 8/16 – 50%; Centre FERASI 6/18 – 33%; Ontario Training Centre 8/10 – 80%; and Western Regional Training Centre 15/27 – 55%. The overall response rate is good and is well within acceptable limits for online surveys of this nature. Nevertheless, surveys of this type have limitations. The respondents may not have represented the range of DMs within any one RTC. Those who responded may have had closer links with the RTCs than those who chose not to complete the survey. The selection of DMs by the RTCs may have been biased towards those who would give a favourable response. While none of these constraints

FIGURE 1. Decision-makers' assessment of the value of the RTCs (percentage; N=37)



can be discounted entirely, there is no evidence to suggest that the views expressed by the DMs in the survey are not a valid reflection of their association with the RTCs.

CHSRF Survey Results

Although the DM survey represented only one aspect of the information collected by CHSRF as part of its fourth-year review, the collected opinions and results do provide an interesting picture of the DMs' linkage with the RTCs. The survey posed a series of questions about the DMs' association and involvement with, perception of and satisfaction with the RTCs. The three most substantive issues are reported here: assessment of the added value of the RTCs; ability of the RTCs to effect cultural change in the DM organizations; and the experience and value of the internship/placement to the DM organization. Each question is discussed in turn.

Added value of the RTCs

The CHSRF survey demonstrated clearly that the RTCs had an impact on the decision-makers, and that generally the impact was positive and significant (Figure 1). Approximately 70% of those DMs who responded stated that the impact of the RTCs on the training of applied health and nursing services researchers has been either "good" or "very good."

Respondents to the survey had an opportunity to provide additional comments in assessing the added value of the RTC. The following are typical of the views expressed:

> The Training Centre helps to create and support a culture of evidence-based decision-making and, most importantly, provides graduates who bridge the

worlds of research and service. Strengthening these links is critically important. (Atlantic DM)

Through the diverse interests of the faculty, the good connectedness to the health delivery field and to government, and through the biannual educational sessions they host, the ARTC positions evidence from research as an important tool for service delivery and policy decisions. By modelling and teaching it, the ARTC helps to normalize and routinize the regular use of evidence for decisions, large and small. (Atlantic DM)

Le Centre permet la formation de chercheurs en gestion des soins infirmiers qui développent de nouvelles connaissances pouvant expliquer les phénomènes d'organisation du travail et leurs effets sur la qualité des soins. [The Centre enables healthcare researchers of the future to develop new knowledge that enables them to explain workplace phenomena and their effects on the quality of care.] (Quebec DM)

An opportunity to access the latest trends in management with the presence of a FERASI student. Access to the management conferences all over the world. Discussion groups and participation in research forums with other organizations. (Quebec DM)

The capacity building is the biggest value. The OTC prepares many for research, and to use research in their decision-making. (Ontario DM)

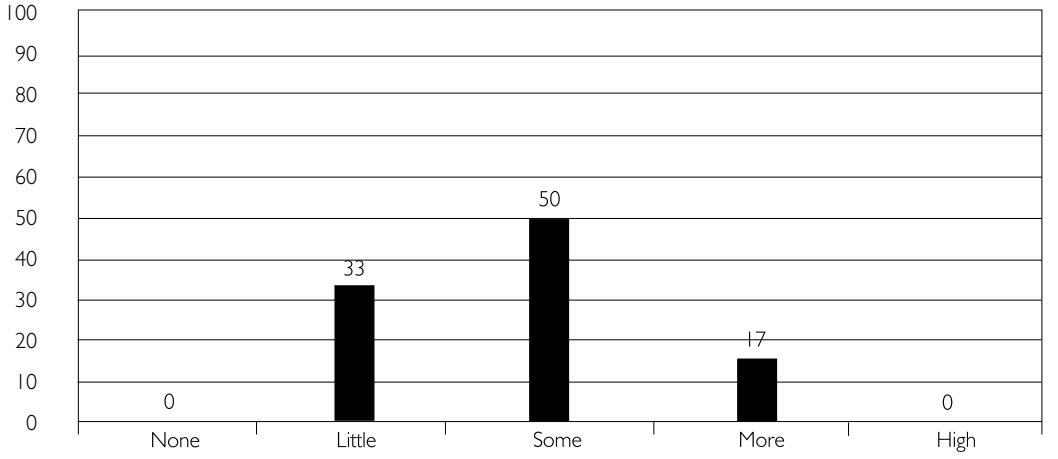
Creates students that are well prepared to work in decision-maker organizations with a strong understanding of the research applications. (Western DM)

In short, the RTCs appear to have had a significant influence on increasing the capacity of and for health services researchers in Canada.

Ability to effect cultural change

Respondents were asked to assess the degree of cultural change that occurred within their organization as a result of their association with the RTC. While respondents clearly indicated that the RTCs had a positive impact, the degree to which the RTCs were successful in effecting cultural change in DM organizations was not as encouraging. (Figure 2). Half the respondents rated the RTCs' ability to effect cultural change as "some." Very few DMs indicated that the RTC had a more positive impact in influencing and enhancing the organizational culture of evidence-informed decision-making.

FIGURE 2. Impact of RTCs on decision-maker organizational culture (percentage; N=18)



Respondents were asked to indicate why the RTCs were less effective in influencing cultural change. Most of those who stated that their association with the RTC had not resulted in any cultural change said the reason was that their organization was already aware of the importance of evidence-based decision-making. The following comments illustrate this perspective:

> We are already sensitive to these issues. (Atlantic DM)

> Je ne crois pas qu'un changement de culture peut être fait par l'assistance à des conférences. Je suis cependant convaincue que la diplomation des premiers étudiants et leur implication macroscopique dans des projets d'organisation des soins et services infirmiers feront une différence. [I do not believe that a change in culture may be brought about through conferences. I am convinced that the graduation of the first students and their long-term involvement in the organization of care and nursing services will make a difference.] (Quebec DM)

> Our organization has been committed to evidence-based decision-making, so the participation with OTC has not made a significant cultural shift. Our organization was already there. (Ontario DM)

> The organization's strong adoption of a more evidence-based culture predated involvement in WRTC. (Western DM)

The following comments were made by decision-makers who indicated that an association with the RTC had led to a shift in organizational culture:

> We have significantly improved our analysis of complex decisions/issues – as well, it has increased our involvement in all types of research both locally and at a national level, in collaboration with other partners. (Atlantic DM)

> More reliance on evidence both in discussions and decision-making. There is a growing movement to include literature in the discussions. (Quebec DM)

> There is an increased awareness and capacity among practitioners for using, understanding and promoting the use of evidence in delivering programs and services. (Ontario DM)

> Linking research activity back to the field practitioners in a meaningful way has resulted in increased participation in research. (Western DM)

> There is an increased awareness of skills brought by those in a training program – increased openness to outside views. (Western DM)

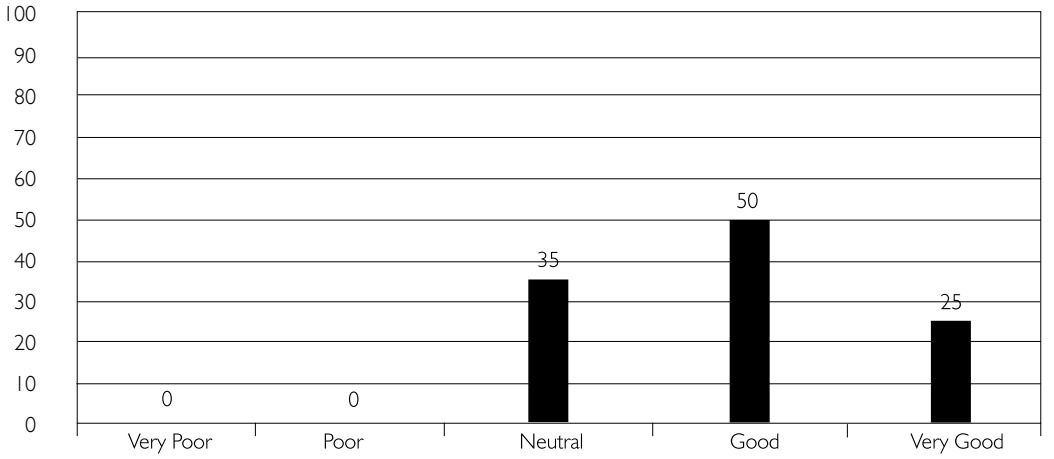
It is not surprising that the fourth-year review noted considerable variation among decision-makers about the ability of the RTCs to influence the culture of evidence-informed decision-making. Changing organizational culture is a long and difficult process, and considerable resistance is always encountered throughout the journey. Nevertheless, as the quotations above illustrate, some decision-makers were quick to realize the potential contribution of the RTCs to enhancing their organization's approach to and utilization of evidence-informed decision-making.

Experience and value of internships/placements

The opportunity for students as part of their learning experience to apply their developing research skills in a decision-making environment is a key component of the RTC programs. Students undertake a residency with a DM partner. This experience is designed to develop an understanding between both parties (the student and the DM organization) of how knowledge is transferred between the academic community and decision-makers, and to provide the student with hands-on research and decision-making experience. The CHSRF survey asked respondents who had provided an internship or placement to first rate the experience from their own perspective (Figure 3) and then to indicate the extent to which hosting a student provided added value to the organization (Figure 4).

The healthcare organizations that hosted an RTC intern or resident generally found the experience very beneficial. Figure 3 indicates that on the whole, DMs were

FIGURE 3. Decision-makers' rating of internship/placement experience (percentage; N=12)



positive about the value of hosting an intern, with 75% giving the experience a rating of "good" or "very good."

The following comments from DMs indicate the mutual benefits of the internship or placement to both the RTC student and the DM organization:

> It was a great experience to have [the student] with us – research often assists us in our work. However, it is often more anecdotal than pure research. The learning was mutual for both [the student] and our organization. We learned more about health research … . (Western DM)

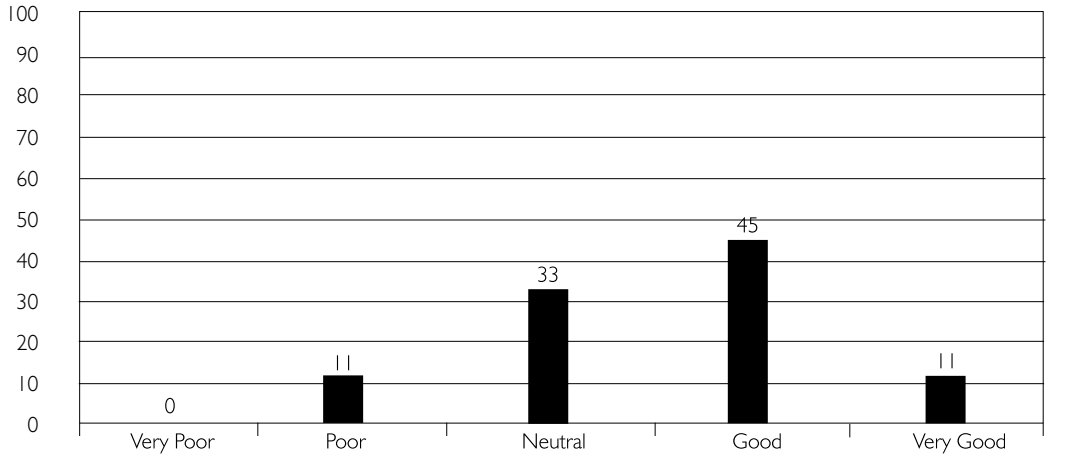
> [The student] has been an asset to [our team] and to the work of the department during her placement. She has demonstrated a willing and positive attitude, has contributed actively to [the] work of [the team] beyond her immediate assignment … . (Western DM)

Hosting an RTC internship or placement was not a one-sided arrangement for decision-makers and their organization. There was clear added value to the organization in doing so. As Figure 4 demonstrates, nearly 60% of the respondents stated that the added value of hosting an intern was "good" or "very good."

The respondents' comments about their experiences with interns illustrate the contribution that the RTC interns made to the organizations:

> Introducing a research-focused and analytical mind to public policy initiatives supported our efforts to be more evidence-based. Besides, the individual in question was a good, hard-working employee. (Atlantic DM)

FIGURE 4. Decision-makers' rating of added value of internship/placement (percentage; N=18)



> Par son apport aux discussions dans le cadre des réunions, par sa recherche d'étude avec données probantes pouvant alimenter nos décisions ou recadrer nos changements en organisation du travail en soins infirmiers. [Through his/her contributions to discussions within the group, through his/her research studies with probing questions, [the intern] was able to influence our decisions about where to refocus the organization of our nursing care.] (Quebec DM)
>
> The intern helped us with key initiatives that needed research/evidence to support them. The individual was extremely helpful in finding research to support decision-making. (Ontario DM)
>
> The student was able to provide us with several pertinent papers and summaries of evidence that supported work in progress. (Western DM)

Discussion

It has been several years since the CHSRF fourth-year survey was conducted. Since then, as the papers in this special journal issue attest, the RTCs have made considerable process in engaging and enhancing ties with decision-makers. One of the more notable initiatives that have strengthened the linkages between the RTCs and DMs has been the Executive Training in Research Application (EXTRA) program. (See Conrad 2008.) The RTCs act as regional mentoring centres for EXTRA by providing its Fellows with both academic and organizational mentors and facilitating the development and implementation of the Fellows intervention project. Through this facilitating role, the RTCs not only help decision-makers understand the significance of evidence-informed decision-making, but through the interactions among RTC stu-

dents, EXTRA Fellows and DMs, the RTCs influence the processes that local health services organizations use to address current healthcare issues.

Successes

Faced with persistent gaps in research and evidence in a number of policy and program files, a main objective for decision-makers in working with the RTCs involved increasing capacity in applied health services research in targeted areas. Capacity building is a dynamic process. By working directly with student researchers in underserved research areas, decision-makers have an opportunity to gain knowledge in the short term while generating interest in key topics over the longer term. The expectation on the part of the RTCs is that this first-hand exposure will lead researchers to pursue these areas of inquiry further and contribute to an overall understanding of key aspects of applied health services.

The impact of the RTC initiative on organizational culture is more challenging to quantify, and generalizations are difficult. Where organizational participants were more familiar with research, the initiative reinforced positive attitudes and behaviours related to both the use of evidence and the link between researchers and decision-makers.

Some organizations are much less experienced as participants in and users of research. For many of these, their work alongside the RTC students represented their first close involvement in research activities. Here, the initiative played a key role in laying a foundation for better understanding and use of research.

The RTCs have seen the interrelationship with decision-makers grow and evolve since the conclusion of the CHSRF fourth-year review. Although certain DMs are more open to accepting RTC students than others, more and more DMs contact their respective RTCs to enquire about hosting a student intern or resident. This willingness is an acknowledgement by the DM organization that there is added value for the institution in hosting an RTC intern or resident. Those organizations that may not be overly strong in evidence-informed decision-making nonetheless still request an intern or resident because they appreciate that the intern brings to the organization a set of skills that they either currently lack or need to develop. The following example illustrates how one healthcare organization utilized RTC interns.

The organization engaged OTC students in two distinct projects. For the first, a team of students conducted key informant interviews, document reviews, analysis and reporting related to the implementation of a high-profile initiative. In the second, a student undertook a review of and provided presentations on instruments and processes used internationally to measure the strength of "system integration" in the human services context.

From an organizational perspective, both exercises resulted in positive impacts for decision-makers and planners, particularly in terms of the knowledge gained. The students applied their research and analytical skills to a variety of key challenges and, in

each case, provided insight into the issue at hand. The students' work has been important in shaping the organizations' understanding of issues, and to this day endures as a basis for analysis.

The students clearly benefited most in terms of their exposure to and knowledge gained about the machinery of government and the application of research in a real-world context. As one of the organization's decision-makers noted, "Their actual research skills were improved" (Ontario DM).

Challenges

The ongoing challenge for the RTCs is how to ensure that the gains made so far are sustained. For example, have the RTCs succeeded in increasing health services researcher capacity and decision-maker receptivity? There is anecdotal evidence to indicate that progress has been made, as DM organizations are employing RTC graduates. However, this indicator is not the only measure of success, nor should it be.

Decision-maker participation in RTC workshops and related activities, such as the OTC's Summer Institute, has the objective of modelling activities that build stronger relationships between DMs and researchers. In some cases, DM organizations have only a basic understanding of how to shape and sustain these interactions. As one Ontario decision-maker put it: "My work with the OTC has provided an opportunity to understand how we can make these relationships work better."

Such experiences are extremely valuable to those involved. However, for the RTCs, the challenge remains to determine whether there is a meaningful way to measure the impact beyond the individual value of each of the activities.

For example, many DMs do not have a clear sense of whether the RTCs have made progress on the objective of leveraging these opportunities to build much-needed capacity in underserved research areas. The connection with the EXTRA Program is a step in the right direction, but more should and could be done. Do we know how many more researchers are choosing to pursue specific organizational topics as a result of the RTCs? Have the various efforts of the RTCs succeeded in establishing better relationships between researchers and decision-makers?

> I absolutely support the work of [the] RTCs but think there may be some value in developing joint measures that allow all of us to mark progress and measure change. (Ontario DM)

Conclusion

It is clear from the CHSRF decision-makers' survey that the RTCs have had an impact. RTC faculty and students have contributed to the better understanding among decision-makers of the importance and value of evidence-informed decision-making.

Perhaps the greatest compliment that DM organizations have paid to the RTCs is that many have employed the graduates. It is not unusual for a student to be offered employment with the organization that provided his or her work-based placement.

There is no question that CHSRF has significantly changed the landscape in terms of strengthening the relationship between decision-makers and researchers. However, within that overall agenda, it is less clear, in the absence of indicators/targets of success, whether the RTCs have produced more researchers involved in health services research or whether the gaps in evidence are less significant than they were prior to the RTCs' creation.

It is abundantly clear that the RTCs cannot afford to become complacent. They are making an impact, both in terms of increasing the pool of applied health services researchers in Canada and of influencing and strengthening the culture of evidence-informed decision-making. However, as the RTCs mature they must exert greater effort and emphasis towards developing the "metric" that will enable decision-makers to see the collective impact of their substantive activities.

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A Foot in Both Camps: Graduate Voices at the Interface of Applied Health Services Research, Policy and Decision-making

Avoir des intérêts dans les deux camps : la voix des diplômés à l'interface de la recherche appliquée en services de santé, des politiques et de la prise de décisions

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Abstract

The Regional Training Centres (RTCs) have established a new, non-traditional model of applied health services research training. Graduates report that the programs provide an academic "home" where they can pursue their health and nursing services research interests while engaging with decision-makers. This discussion paper shares perspectives from eight RTC graduates about their lives and careers at the interface of applied health and nursing services research, policy and decision-making, in particular, training in a novel graduate program, building lasting connections among researchers, policy makers and managers and acting as liaisons among these communities. Graduates cite their exclusive access to a health services and policy network as an enticing feature of their training experience. They have forged careers that require work in both the research and decision-making realms, and clearly prefer having "a foot in both camps."

Résumé

Les Centres régionaux de formation (CRF) ont établi un nouveau modèle non traditionnel de formation dans le domaine de la recherche appliquée en services de santé. Les diplômés indiquent que le programme est un point d'attache leur permettant d'approfondir leurs intérêts pour la recherche en services de santé tout en établissant des liens avec les décideurs. Ce document de discussion présente les perspectives de huit diplômés des CRF quant à leur vie et à leur carrière à l'interface de la recherche appliquée en services de santé et de soins infirmiers, des politiques et de la prise de décisions, surtout en ce qui concerne (1) la formation dans un nouveau programme d'études, (2) l'établissement de liens durables parmi les chercheurs, les décideurs et les gestionnaires, et (3) l'établissement de rapports dans ces communautés. Les diplômés citent l'accès exclusif à un réseau de services et de politiques en santé comme une caractéristique attrayante de leur expérience de formation. Leur carrière exige d'eux qu'ils déploient des efforts autant dans le domaine de la recherche que de la prise de décisions. Les diplômés préfèrent clairement avoir des « intérêts dans les deux camps ».

Key messages

- The Regional Training Centres (RTCs) offer a novel approach to applied health services research training, using tangible tools and imparting practical experiences.
- This training fosters the development of lasting connections between students and those in the research and decision-making realms.
- Graduates see themselves as liaisons, moving back and forth across the divides of research, policy and decision-making.

Bringing together the applied health and nursing services research community with that of policy and decision-making has its share of challenges (CHSRF 1999). Martens and Roos (2005) have likened the relationship between these communities to "tectonic plates": although the plates tend to move slowly past one another, they sometimes collide, dramatically altering the health services landscape. Indeed, leaders of both communities have made concerted efforts over the last decade to increase and improve their interactions, collaboration and exchange of ideas (Lomas 1997; Lavis et al. 2003; Huberman 1994; Roos and Shapiro 1999). For the most part, these efforts have involved researchers reaching outside their comfort zone to embrace a decision-relevant way of doing research and actively learning from decision-makers about the challenges they face. Policy makers and managers have also been challenged to practise a more evidence-informed way of making decisions.

The Canadian Health Service Research Foundation (CHSRF) and the Canadian Institutes of Health Research (CIHR) formed a partnership in the late 1990s and set up a 10-year funding arrangement for the development of Regional Training Centres (RTCs). The RTCs were established to increase capacity at the graduate level in applied health and nursing services research (HSR) (CHSRF 2008b; Conrad 2008). The RTCs – each representing a consortium of universities – include the Atlantic Regional Training Centre (ARTC), the Centre FERASI (Centre de formation et d'expertise en recherche en administration des services infirmiers), the Ontario Training Centre (OTC) and the Western Regional Training Centre (WRTC). To date, the RTCs have admitted 345 students (Table 1). Of these, 144 have graduated, with 102 at the master's level and 42 at the doctoral level.

TABLE 1. Total number of admitted students and graduates by Regional Training Centre (RTC), 2001–2008

RTC	Admitted			Graduated		
	PhD	Master's	Total	PhD	Master's	Total
WRTC	40	51	91	27	30	57
OTC	64	58	122	7	23	30
Centre FERASI	24	44	68	7	31	38
ARTC	6	58	64	1	18	19
Total	**134**	**211**	**345**	**42**	**102**	**144**
Source: CADRE Participant Database.						
The CADRE Participant Database is updated on an annual basis. The data presented in Table 1 reflect the status of RTC participants up to January 2008.						

Note: See Brachman et al. (2008, this issue) for a discussion of the specific RTC program elements, characteristics and graduate requirements.

For RTC graduates, the silos within research disciplines and decision-making are less of an obstacle than for their predecessors, owing to the opportunity to learn about research methods and policy application simultaneously. In fact, every component of their training – from coursework to conferences, institutes and workshops to a residency or placement in a decision-making environment to an HSR thesis – is aimed at interdisciplinary training to unite these worlds. At the end of it all, graduates find they have morphed into "unique creatures," occupying a unique niche – the interface of health services research, policy and decision-making.

In this paper, we share perspectives from eight RTC graduates about their life and careers at this interface. In particular, we explore the three major themes that emerged from interviews with these graduates: the RTCs' novel approach to HSR training, using tangible tools and imparting practical experiences; training that fosters the development of lasting connections between students and those in the research and decision-making realms; and the graduates' view of themselves as liaisons, moving back and forth across the divides of research, policy and decision-making.

Approach

We conducted informal telephone interviews with eight graduates from the RTCs. We asked Program Managers from each RTC to nominate master's and doctoral graduates for these interviews. Purposive sampling was used for nomination and final selection of graduates interviewed, since the aim was to provide a diverse interviewee pool of graduates, considering such factors as geography, area of interest, professional background and post-graduation career path. Each interviewee gave written, informed consent before being interviewed. Interviews took place between December 2007 and January 2008 and explored such issues as what initially attracted graduates to the program, their general experiences and how the training affected their career path and prepared them for their current roles. The interviews were professionally transcribed. Analysis was conducted informally, with three major themes emerging. Graduates were given an opportunity to verify these themes as well as the facts in this paper.

The paper aims to give a snapshot of graduate perspectives in conversational style. We considered this approach the most effective way of representing the graduates' "voices." We begin with an introduction to the graduates.

The Graduates

RTC students are drawn by design from a variety of disciplines and professional backgrounds. Their career paths post-graduation are similarly diverse.

From the WRTC

Dug Andrusiek (MSc, Health Care and Epidemiology, 2005) came to the WRTC program as a paramedic and a master's student in 2003. Dug is presently a doctoral candidate with WRTC support, and also works as Manager of Research, Medical Programs with British Columbia Ambulance Service in Vancouver, a position created for him after completing his master's degree.

Vicki Crites (MA, Political Science, 2005) graduated from WRTC's affiliate stream. With her background in political science and her field placement with Health Canada – BC Division, Vicki now works as a policy analyst with the BC Division in Vancouver. (To learn more about the WRTC's affiliate program, see Brachman et al. 2008.)

From the OTC

Faith Donald (PhD, Nursing, with a Diploma in Health Services and Policy Research, 2007) is a nurse practitioner and graduate from the OTC. Since graduating, Faith has continued in her role as Associate Professor in the School of Nursing at Ryerson University in Toronto. In addition, she recently became one of the CHSRF/CIHR post-doctoral award holders.

Kristin Shields (MPH, with a Diploma in Health Services and Policy Research, 2005) has a background in life sciences and now works as Senior Consultant, Planning and Community Engagement with the North West Local Health Integration Network (LHIN) in Thunder Bay, Ontario.

From the Centre FERASI

Lily Lessard (MSc, Community Health, 2005) has a background in nursing and is Associate Professor at the Université du Québec à Rimouski in the Department of Nursing, and is pursuing her doctorate in Community Health at Université Laval.

Marie-Claire Richer (PhD, Nursing, 2007) recently accepted a position as Director of Transition with McGill University Health Centre (MUHC) and is Assistant Professor and Joint Coordinator for the Centre FERASI program at McGill University in Montreal, Quebec.

From the ARTC

Roger Chafe (PhD, Community Health, 2008) came into the ARTC with a master's degree in philosophy. Now pursuing his CHSRF/CIHR post-doctoral award at the University of Toronto, Roger works closely with his decision-maker partner, Cancer Care Ontario.

Brad Osmond (MSc, Applied Health Services Research, 2006) had a background in business and marketing when he entered the program. Since graduation, Brad has carved out a new position as Community Health Planner for Annapolis Valley Health District Health Authority in Nova Scotia.

Training within a Novel, Applied Training Model

A new model for training applied health services researchers

The RTCs operate under what some graduates refer to as a new model for educating health services researchers. "I've always seen this program as a research program that is similar to a health MBA," says Roger, who is the first doctoral graduate of the ARTC. "The program is in tune with the decision-maker environment and has a practical focus on health system analysis."

This practical focus makes sense given the momentum "to push health services research outside the academic environment and to make research resemble what is actually occurring in healthcare provider organizations," says Roger. It also reflects the underlying philosophy of the RTC model: "to build a consortium of post-secondary institutions, departments, faculty and decision-makers to augment current training and offer applied research training that is interdisciplinary and sensitive to health system decision-maker concerns" (CHSRF 2000).

Fellow ARTC graduate Brad agrees. He says his training went "far beyond the scope of an average graduate program," providing him with the necessary skills for his current role as a community health planner in a district health authority. In particular, he refers to his coursework, which encompassed such broad topics as qualitative and quantitative research methods, population health and the determinants of health, healthcare policy and knowledge translation.

Kristin notes one drawback to participating in a new program. As one of the first graduates of the OTC, she considered herself a "guinea pig" of the newly established program. Yet, all graduates stated that they felt the benefits of participating in the RTC programs far outweighed any disadvantages.

Tangible tools and practical skills

Students reported that their training gave them tangible skills and tools for working closely with policy makers and managers while conducting health services research. On the one hand, they learned how to write briefing notes and summaries that appeal to the policy and decision-making community; on the other hand, they were trained to be proficient in conducting research, writing research papers and putting together research proposals. Faith remembers the lesson on how to write a research proposal letter of intent during the OTC's summer institute. Taught by a "renowned researcher and healthcare provider duo," the session was practical, relevant and unlike anything Faith had previously been taught in her coursework.

Marie-Claire says that elements of her graduate coursework at the Centre FERASI were similarly unique. For example, faculty challenged students "to see how the papers or work we were doing was relevant, and how it could be applied to a real situation with the decision-makers we were working with."

"As you go through the program you gain a completely different perspective on engagement in research," says Dug of his experience at the WRTC. "You understand the unit of analysis, [but also] where the intervention is being applied, and how the intervention affects the health services setting."

The tailored approach: feels like home

Clearly, the RTC programs have succeeded in providing HSR training, but graduates say the course of study is also customized to meet the unique learning needs of students from a host of disciplines. At the OTC, for example, students are required to create a personal learning plan, which is intended to define what each student expects from RTC experience. "The plan was helpful for keeping me on track and offered an opportunity for reflection on the training experience," says Faith.

With the RTC programs' flexible nature – whether the coursework, thesis or other components – students have an opportunity to conduct research in unique areas of interest. Dug says this flexibility is precisely why he was eager to join the WRTC at the University of British Columbia. He felt the program was a good fit to pursue his interests in paramedic medicine – interests that Dug says "didn't really have an academic home" otherwise.

Arguably, the WRTC has gone out of its way to become a home for students like Dug. In 2002, after receiving enquiries from students and faculty in various departments and universities across the region, the WRTC opened its training to affiliate students. The affiliate program provides a health services research home for students from various disciplines who have an interest in health services.

Overall, the RTCs' training allows students greater freedom of thought than traditional departments. For example, Brad says the ARTC program helped him make the connection between his business savvy and desire to work in the healthcare system. "Is there any other [sector] so based on supply and demand?" he says. "I can understand decision-makers' perspectives and now I can talk to them about it without all the jargon."

For Kristin, finding the OTC program was like finding a diamond in the rough. During her undergraduate studies, she met with a faculty adviser to discuss her career options. At the time, she was taking pre-med courses, but wanted to pursue "system-level planning." Her adviser told her that this role didn't exist and she should instead apply to medicine, pursue a specialty and ultimately aim to become a medical director in a public health unit. "I decided that wasn't for me," says Kristen. "That's when I started my master's [degree and] I remember the OTC seemed to perfectly match what I had pictured myself doing."

By necessity, HSR training requires students to develop academic rigour, but with full consideration of the real health system issues and constraints related to undertak-

ing formal research in decision-making settings. A fundamental characteristic of the RTCs is that curricula must be applied and relevant to context, hence the considerable interaction between students and decision-makers.

Networking to Develop Lasting Connections

A national network

In the strictest sense, a network "is a system of interconnected individuals who interact with each other for mutual assistance or support" (CHSRF 2008a). Such networks usually require a significant level of infrastructure and financial support to promote knowledge sharing, facilitate communication and foster a culture of innovation and change (CHSRF 2008a). While there is no official pan-Canadian network of students, researchers and decision-makers, RTC graduates acknowledge that one exists, and they say the network itself is one of the fundamental benefits of joining an RTC program. Arguably, this network is nurtured by the RTCs. For example, the RTCs have all – to a greater or lesser extent – allotted funding for students to attend conferences, such as the annual national CAHSPR (Canadian Association for Health Services and Policy Research) conference.

Faith says the OTC program has given her access to a significant network of health system managers, policy makers and researchers. "[This network] is one of the major advantages of joining the program," says Faith. "I knew the training centre would afford opportunities to expand my research network to other universities both within Ontario and, indeed, across the country." Now an Associate Professor in the School of Nursing at Ryerson University, Faith says having these network connections and mentorship is "critical to becoming an established researcher," particularly in this field.

For the most part, graduates cited annual, RTC-hosted conferences, seminars, institutes and workshops as settings for invaluable networking. Lily says she was initially attracted to the Centre FERASI by the opportunity to engage with students with similar research interests. She says the connections she built during her training were relevant for her career, and only now has she begun tapping into this broad network.

Institutes are fundamental to the curricula of the RTCs. Kristin, an OTC student, recalls attending a national Spring Institute in 2004 that focused on "knowledge transfer in context." She says it was an opportunity for face-to-face connections with "students and faculty members who have common interests in the area [in which] you're doing your thesis or your research or policy work." (Brachman et al., 2008) These conferences afford students a chance to get a handle on healthcare issues nationally, too. "We [had the opportunity] to network nationally and learn about the experiences of students from different RTCs and the health service policy research that was being done outside our own province," says Kristin.

Vicki, a Policy Analyst with Health Canada, says these were the same connections that "laid the foundation" for her career in health services research. Of course, making these connections extended far beyond the classroom setting. "I was able to meet people from other universities, other disciplines," she says. "That helped to give another perspective on each topic that we looked at through the seminars, [which was] undoubtedly one of the most valuable experiences for me."

"The part that attracted me most was the fact that there was going to be a partnership between a decision-maker and somebody from academia," says Marie-Claire. These are the kinds of partnerships, she says, that help create an organizational environment that is receptive to the development of a research culture.

Attendance at conferences that bring together health-system research, policy and management experts from across Canada to share experiences and perspectives allows students access to a range of health system players, so they develop "a whole new mindset on [health services research]," says Dug.

Connections that last

While connections with health system players from beyond the walls of the RTCs have proven invaluable, it is the connections developed inside that graduates spoke of most fondly. Graduates frequently remarked about the support that RTC faculty and staff provide to students and how these early relationships form the basis of lasting connections. Lily says she felt "very welcomed" and "encouraged" by Centre FERASI faculty and staff. In fact, she says it's why she continues to be actively involved with the centre. Kristin shares a similar experience. "The faculty were embracing from the beginning and they were really there for the students, with the whole program being very student-centred," she says.

These early linkages have grown into long-lasting connections for graduates. In particular, graduates have developed a sense of who's who in academia, policy and management, which makes future pursuits in health services more tangible. For those like Kristin and Vicki, who have thoughts of pursuing doctoral work, the RTC experience has provided a sneak peek at the research world, opening their eyes to who's working on what and where. For the majority, the real value and impact of having a network at their fingertips has been more evident post-graduation, as students have continued to exchange information and ideas with those on the researcher and decision-maker side of things.

"I think the notion that research is not an independent venture, that we can't do it alone and that good research requires a team with a variety of perspectives, has been an important lesson," says Faith. It's a lesson that resonates with decision-makers, too.

Employers seek out graduates

Marie-Claire says that for her employer, having a Centre FERASI doctoral graduate on staff has created the agenda and opportunity to conduct research. She was involved in multiple projects at the McGill University Health Centre throughout her graduate training. "During my thesis proposal development, it was beneficial that I was actually in the decision-making environment," she says. "I think relationships are built from being there, developing trust, exchanging, learning from each other. I was there to learn from them, but they also realized that they could learn from me."

With these kinds of positive experiences, it's no wonder that decision-maker organizations see RTC graduates as employees of choice (see also Sheps et al. 2008). As such, graduates are often recruited by host residency or placement organizations even before graduation.

"Employers are starting to seek out the RTC programs, which are gaining a reputation across the country for developing the type of graduates that decision-maker organizations are looking for," says Roger. Roger is familiar with this scenario. Before moving to Toronto for his position with Cancer Care Ontario, he was working at the same regional health authority – Eastern Health in St. John's, Newfoundland and Labrador – that hosted his ARTC research residency. "My career is a direct result of the program, which gave me the skills, training and the experience that my employer was looking for and which are increasingly recognized as a unique collection of skills," says Roger.

Brad concurs. "If it wasn't for the ARTC, I wouldn't be doing what I'm doing."

Whether graduates are pursuing careers in academia or policy and management, they report being adequately prepared. In particular, they say the RTCs have given them an appropriate balance of theoretical research concepts as well as real-world application. In the end, the balance is serving them well in their careers (see also Rathwell et al. 2008).

Filling a New Niche in Health Services

"A foot in both camps"

Upon entry into the RTC programs, many graduates envisioned that they would be pursuing discipline-specific research. For most, this conjured images of one day inhabiting the hallowed halls of an academic institution. However, by the time students reach graduation, many report having developed a new vision.

"You are now starting to feel more active involvement between decision-makers and researchers, and you are seeing researchers who actually hold decision-making roles within organizations," says Dug, who has experienced the interface of health services research and management in his evolving career at the BC Ambulance Service.

"Health services research positions are moving outside the traditional university setting and creating 'researchers in the world,' so to speak," says Roger, who also knows what it means to have "a foot in both camps," having worked as a researcher in a regional health authority. Marie-Claire has the same intimate knowledge: despite working full-time at the MUHC, she says she still has "one foot in the university" with her cross-appointment in the School of Nursing at McGill University.

For the most part, graduates argue that their current roles challenge existing boundaries among research, policy and decision-making. For some, this means they have only "one foot" firmly planted in either arena. Others are less able to fully articulate their footing, seeing themselves more as "brokers" between the communities. In fact, all report playing a liaison role that requires them to move back and forth across the divides of research, policy and decision-making.

Brad also describes himself as one of these "unique creatures," using his abilities to access and assess research findings in his career in the decision-making environment. Of his career in a district health authority, Brad says, "I can take the data to the decision-makers and sit down with the right people 'around the kitchen table,' and help them to understand it and what it actually means to them and their programs." Over time, Brad says he has earned a reputation as the "evidence guy," and he's finding that decision-makers in his region are gaining an "appetite for data and evidence," even "asking the questions they didn't ask before."

"What I am is an information gatherer, an interpreter [of research findings]," says Vicki, who says her policy analyst role has a strong knowledge-brokering component. "I contribute to the decision-making process, but I'm somewhat removed from it." Vicki says her training made her the perfect candidate for this role – one she didn't even realize existed before her training experience with the WRTC.

Opening doors

HSR training has clearly "opened doors" for graduates. For Faith, "going through the process of my PhD [in the OTC] provided me with the confidence, knowledge and skills to feel that I could move forward with [a career in] health services and policy research. It also gave me a network of experts in research and in policy and health services that could give me the support and the guidance to become an independent researcher in the true sense of the word."

For some, the pursuit of Health Services Research has been a journey. "When I was completing my master's thesis, before I entered the WRTC and even initially at the WRTC, I never had the desire to work in the healthcare policy field," says Vicki. "I knew I wanted to work in policy or in government, somewhere, [but] I [wasn't sure] where. This [career] just sort of dovetailed for me perfectly."

"As I've moved along, doors have opened as a result of the training I was involved in," agrees fellow WRTC graduate Dug, who is now pursuing doctoral studies. "I start-

ed out thinking I would become a clinical researcher. Then I had this shift as I moved through my training. … I began to see a role within the decision-making environment for the skills I was gaining." Today, Dug uses his research skills to influence policy and decision-making in paramedic medicine.

Conclusion

The RTCs offer a non-traditional approach to interdisciplinary training in HSR. Graduates who come into the programs say they have found a fit – one between what they wanted to pursue and what the programs offer. The programs are a "home" of sorts; a place where students can pursue their unique research interests in health services. At the same time, students are given exclusive access to a network that extends from researchers to policy- and decision-makers. The training and networking opens students' eyes to possibilities they had not yet contemplated. In terms of where graduates are now, the experience can be challenging to put into words. Their roles involve moving back and forth across the boundaries of research, policy and decision-making. And they like it that way. They desire to take a research perspective and make it work for the decision-making world. At the same time, they see how the decision-making perspective must help to shape research, so that it is relevant to the major health services questions of the day.

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The Future of the Regional Training Centres: Planning for Sustainability

L'avenir des Centres régionaux de formation : planifier la durabilité

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Abstract
The main objective of the Regional Training Centres (RTCs) is to produce well qualified personnel within the fields of health services and nursing research. Through their collaborative efforts, each of the RTCs has created opportunities for conceptual and methodological competency, knowledge synthesis and knowledge translation and exchange for graduate students, as well as for community-based decision-makers across a variety of areas in applied health and nursing services research. Now, the RTCs face the challenge of envisioning their future. The task is not merely to describe what is, nor what will be, but rather to envision what could be. The purpose of this paper is to describe a plan for sustainability, not only financially but also with respect to management of human resources, student development and collaboration among the partners who make up the collective that is a Regional Training Centre.

Résumé
Le principal objectif des Centres régionaux de formation (CRF) était de produire du personnel qualifié dans le domaine de la recherche en services de santé et de soins infirmiers. Grâce à leurs efforts de collaboration, chaque CRF a créé des occasions d'application des compétences conceptuelles et méthodologiques, de synthèse des connaissances, et d'application et d'échange des connaissances pour les étudiants des cycles supérieurs, ainsi que d'établissement de partenariats communautaires avec des décideurs provenant d'une multitude de domaines de la recherche appliquée en services de santé et de soins infirmiers. Les CRF doivent maintenant envisager leur avenir. Il ne s'agit pas simplement de décrire ce qui est, ou ce qui sera, mais plutôt d'envisager ce qui pourrait être. Comme dans tous les exercices de visualisation, cet article vise à décrire un plan de durabilité, non seulement sur le plan financier, mais également en ce qui concerne la gestion des ressources humaines, le perfectionnement

des étudiants et la collaboration entre les partenaires qui forment un Centre régional de formation.

Key messages

- Given that future funding is not guaranteed, the RTCs must explore options for sustainability, not only financially but also with respect to management of human resources, student development and collaboration among partners.
- In order to ensure future sustainability, the RTCs must expand partnerships to broaden the base of stabilization.
- As the health sector embraces research and evidence-informed activities, the RTCs will maintain their existence.

In the late 1990s, the Canadian Health Services Research Foundation (CHSRF) and the Canadian Institutes of Health Research (CIHR) partnered to commit 10 years of financial support to the creation and development of Regional Training Centres (RTCs). The RTCs were established to increase capacity in applied health and nursing services research at the master's and doctoral levels in Canada. Currently, there are four RTCs, each of which represents a consortium of universities collaborating in Quebec, Ontario, and the Atlantic and Western regions. The Atlantic Regional Training Centre (ARTC) offers a stand alone joint master's degree in applied health services research as well as an interdisciplinary doctoral program. The Centre FERASI of Quebec (Centre de formation et d'expertise en recherche en administration des services infirmiers) grants graduate degrees with an emphasis on training and expertise in research applied to administration of nursing services. The Ontario Training Centre (OTC) in Health Services and Policy Research enables consortium members to offer a graduate diploma in health services and policy research.[1] The Western Regional Training Centre (WRTC) supports training of applied health services researchers and offers students an option to join graduate degree programs in departments that are associated with the WRTC, or as affiliate students who continue to pursue their degree in a department not associated with the WRTC.

The main objective of the RTCs was to produce qualified personnel (primarily graduate students) who would build capacity for research and knowledge translation and exchange (KTE; see D'Amour et al. 2008) within the field of applied health and nursing services research. In order to achieve the RTC mandate, the first step was to develop an essential infrastructure that would ensure success. Initially, the infrastructure was based on an explicit plan to provide training and financial support to graduate students interested in health services and nursing research. However, within a very

short time, the addition of new programs, such as Executive Training for Research Application (EXTRA), as well as other activities (e.g., Research Use Weeks, short courses and intra-provincial support for local initiatives such as Summer Institutes and regional workshops) expanded the learning infrastructure to represent a dynamic interaction among non-government organizations, academia and healthcare decision-makers. Through the collaborative efforts of individuals in each of these sectors, the RTCs created opportunities for conceptual and methodological competency, knowledge synthesis and KTE for graduate students and community-based decision-maker partners across a variety of areas in applied health and nursing services research.

Given that the current federal funding is expected to end in 2011/2012,[2] we are faced with the task of envisioning the Regional Training Centres of the future. The purpose of this paper is to explore options for sustainability, not only financially but also with respect to management of human resources, student development and collaboration among the partners who make up the collective of each RTC.

On the Sustainability of Regional Training Centres without Continued Funding

While the RTCs have demonstrated tremendous growth over the past five years, there is little doubt that the greatest threat to future sustainability is uncertainty about the continuation of adequate financial support. To this end, the RTCs have begun discussions towards planning for future sustainability with respect to financial support and the ability to develop qualified personnel. Further, while the generic issues are consistent across the RTCs, there are regional challenges that differ as a result of external pressures. The RTCs of the future will create a landscape that addresses the cross-country collaboration while respecting local and regional expectations to ensure sustainability.

For example, the WRTC has initiated a plan to reconfigure funding sources and funding delivery. The main components of a new funding model will include the Health Authorities/Regions across Western Canada, major provincial funding agencies (e.g., the Michael Smith Foundation for Health Research in British Columbia) and the primary universities in Western Canada. The concept is based on a sustainable partnership in which capacity enhancement is expanded from a graduate student focus to a model that integrates graduate student development and Health Authority/Region staff training. This reorientation is expected to enhance the integration of professional development programs for decision-makers into a closer liaison with the academic partners of the WRTC.

Similar to other RTCs, the ARTC continues to redesign its structure to ensure future success and sustainability. The primary expectation is that following the

restructuring process, there will be an explicit interaction between universities and decision-makers. The ARTC of the future will maintain the autonomy of the individual partners while working cohesively to ensure future success.

This planning approach is not limited to the WRTC and ARTC but has also been initiated in Ontario and Quebec. For example, Centre FERASI is seizing upon challenges raised by the need to renew emphasis on training leadership in nursing within the context of aging, and recognition of the possibility of future shortages in the nurse workforce, to extend its training programs and research activities and to create new partnerships. To this end, FERASI is currently engaged in a review of its mission and redefining its activities. The centre is striving to create a sustainable program that recognizes the importance of developing future personnel who will assume research and management roles in nursing services for healthcare delivery.

Each RTC understands the value of building on the strength of affiliations across universities, specialized academic units (e.g., nursing, public health, health administration and business), research centres and healthcare organizations to ensure future sustainability and continued knowledge translation and exchange.

On the Academic Preparation of Graduate Students in Applied Health and Nursing Services Research

Developing an academic foundation to prepare graduate students for research in applied health and nursing services research has been a primary objective of the RTCs from the outset of the CHSRF CADRE program (see Conrad 2008 for a discussion of this program.) In short, the RTCs have been tremendously successful in meeting this objective. Although they will continue to face organizational challenges – political and geographic boundaries, university policies (e.g., limiting the number of credits students can take without paying additional tuition), restrictions from external governing councils[3] – each RTC has managed to execute a plan for graduate student development through formal academic preparation.

From the start of the CHSRF CADRE program, the RTCs have worked towards ensuring future sustainability by creating an academic thread that ties together each of the academic participants and their respective institutions through a unique open affiliation that includes sharing courses, mentorship, research opportunities and services among the partner universities. Typically, the RTC partnership is based on three main tenets: a commitment to fund graduate students at the master's and doctoral level; a commitment to deliver learning institutes or regional workshops at one of the partner institutions on a regular basis; and a commitment to provide both academic and practical training (e.g., courses, seminars, mentorship, practica and interdisciplinary research opportunities).

The essence of interdisciplinarity in KTE ensures the proliferation of additional opportunities. Although the fiscal support provided to the RTCs from sources that may include federal (CHSRF/CIHR), regional (provincial ministries) and local partnerships (decision-maker agencies) is helpful in attracting students to the various programs, it is expected that in time prospective opportunities for employment or career advancement for graduates of the RTC programs will become the primary motivator for student recruitment.

On Providing a Cohort of Qualified Personnel for Decision-maker/ Community Organizations

An essential determinant of success for the RTCs has been the development of partnerships that enable students and faculty to interact with decision-maker partners and healthcare system stakeholders in a variety of ways. Decision-maker partners are fundamental to the infrastructure of the RTCs, as they provide indispensable support through membership on RTC Advisory Boards, mentorship to students and membership on graduate committees, as well as opportunities for experiential education in a research or policy practicum, or by contributing research questions that eventually become the stimulus for graduate theses and dissertations.

In the future, the relationship between the RTCs and the decision-maker partners will continue to be nurtured because of acknowledged mutual benefits. For example, RTCs will seek assistance from their decision-maker partners to provide academic internship opportunities within their organizations. Conversely, decision-makers will look to the RTCs as the purveyors of advanced knowledge and, as such, the providers of trained personnel to assist them in a variety of tasks.

Future field placements for graduate students with decision-makers may increase from current levels (e.g., 200 hours of placement in the OTC) to extended term arrangements with specific payment schedules as currently practised within the WRTC. Post-doctoral fellowships paid for by the decision-maker partner agency could become the norm within post-program opportunities, while academic/theoretical support from highly specialized existing academic units may be provided on a fee-for-service basis back to the decision-maker. For example, linkages will be made with business schools (such as Sauder School of Business Centre for Health Care Management Research Program at UBC) that will enhance the range of analytic strategies for understanding contemporary issues in healthcare by providing a wider array of types of evidence for informed decisions.

This outreach model of community engagement is clearly in line with developments regarding schools of public health in several provinces and is articulated in most university mission statements. In early development, this model would enhance

university–community interaction to mutual advantage; provide much-needed continuing support to decision-makers; ensure a new generation of applied health and nursing services researchers, given the aging of the current senior leadership; and sustain and expand a successful training activity to produce a new generation of decision-makers adept at generating and receiving research evidence.

Similarly, as exemplified by the vision of the Centre FERASI, RTCs will continue to create a platform for building leadership for nursing services through training, research and knowledge translation and exchange. However, this direction requires the development of a range of new strategies, which may include a plan for increasing the clientele for training programs by introducing new programs in continuing education. Such programs are expected to increase the development of new initiatives that will build leadership in nursing management among current nurse decision-makers. For example, Centre FERASI is planning to extend its current international collaboration in areas of nursing services research, investing in research programs that will inform decision-making and will generate new courses in advanced nursing practice.

The RTCs continue to build on existing strengths and tangible resources as they consider new initiatives that will ensure future sustainability. For example, bearing in mind that expanding RTC membership helps to increase the quantity and quality of resources that could not otherwise be realized by any single institution, it is essential that the RTCs increase current membership to include academic institutions within their regions that were not engaged initially when the RTCs were created. This has been done effectively in the WRTC, with the recent addition of the School of Public Health and the Faculty of Nursing at the University of Alberta, as well as with a growing number of affiliated universities. Likewise, the Centre FERASI recently extended its membership to a fourth university by including the School of Nursing at the Université of Sherbrooke. As RTCs continue to produce qualified personnel who fill the void in existing employment positions and who set new directions and career paths, the RTCs must maintain a connection with this increasing network of graduates, especially those appointed to leadership positions within healthcare organizations or academic units.

Implementation of the RTC vision will require engagement of key stakeholders interested in developing a stronger leadership for applied health and nursing services research. The task of the RTCs will be to increase their capacity to mobilize teaching resources, provide greater expertise in domains related to health services administration and ensure an environment of support that generates excellence in research.

The health services delivery environment from which the decision-makers are drawn and where students find opportunities will continue to be perceived as an obvious career path for students graduating with skills in applied health and nursing services research. Conversely, healthcare system decision-makers will continue to

be viewed as the providers of a practical environment within which the theoretical knowledge learned by RTC students can be applied.

The RTCs must continue to provide financial support to students. Financial support by the CHSRF through the RTCs is necessary to attract students to the various program offerings. However, it is expected that in time, prospective opportunities for employment or career advancement for graduates of RTC-delivered programs will be more easily recognized and become the primary motivation for students to consider graduate-level training for careers in applied health and nursing services research.

On the Importance of the EXTRA Program and Similar Federal Initiatives

An opportunity increasingly linked to RTCs, and supporting the overarching theme of developing individuals who can be considered well qualified in the field of applied health and nursing services research, is the Executive Training for Research Application, or EXTRA program (see Conrad 2008 for a discussion of this program). The RTCs' willingness to take on the EXTRA program, both through involvement in the planning and development stages as well as through its direct activities in recruitment of Fellows and mentors, demonstrates a level of commitment essential to future sustainability. Moreover, RTC involvement in the EXTRA program is an explicit confirmation of the value of working towards ensuring a linkage between the university partners and the community of decision-makers in each region across Canada.

The EXTRA program provides a channel between university and community at a level of symbiosis that ensures mutual benefits for all participants. As a result of the EXTRA program, the RTCs have been able to enhance policy and research practicum placements for graduate students, while providing research design and analysis expertise to decision-maker partners who are involved in specific intervention projects designed to improve service provision within their organizations. This partnership can be sustained well into the future because it has demonstrated merit within both the academic and decision-maker partnership environments.

For example, creating a partnership between graduate students and decision-makers over the medium to long term would maintain not only student interest in priority issues but also the interest of faculty. Examples of such opportunities are in the early stages at each of the RTCs, but may emerge as the modus operandi for the future. Under such a model, graduate students and decision-makers can work closely with a faculty member on the implementation of specific initiatives being carried out at a given agency. With a small amount of funding from health services delivery agencies and concomitant matching funding from provincial agencies or possibly ministries of health, student stipends would be supported and faculty time could be negotiated.

Summary and Conclusion

The need for sustainability within the RTCs may be easier to appreciate when one considers the extent to which each RTC has achieved many of its long-term objectives midway through the term of funding. Within each RTC there has been (1) a significant increase in the number of individuals trained in applied health and nursing services research, (2) an explicit development of partnerships between academia and decision makers and (3) a virtual conduit between students and partner agencies that enables opportunities for experiential learning.

RTC graduates are not only gainfully employed in many areas of applied health and nursing services research, but in several cases are moving into decision-making roles within a variety of complementary agencies. The RTCs of the future will take advantage of graduate alumni in decision-maker roles to ensure continued support for students, for both practicum placements and funding. As some graduates move directly into the workforce within the region that they were trained, others have chosen to continue their academic training in doctoral studies or in post-doctoral positions within academia. These individuals provide a necessary restocking of the academic foundation that will ultimately perpetuate the training of graduates in areas related to applied health and nursing services research.

Without question, if the current RTCs do not plan for sustainability, there is no expectation that the programs will exist in the future. However, RTCs are poised for continued success building on their current achievements. They will no doubt continue to evolve, and while some transformations will be subtle, others may require radical departure from current practices. For example, in order for the RTCs to maintain their current position and thrive in the future, continued emphasis on the development of alternative revenue streams will be necessary. Such funding possibilities will extend beyond the continuation of the current graduate programs and may require the development of professional in-course and/or certificate programs that can be offered on a fee-for-service basis. The RTCs will also be more active in grant and contract activity, where the funding will not only support students but will provide essential dollars to cover both direct and indirect costs of program administration and essential core activities (e.g., the annual institutes).

Future periods of transition will require changes to existing administrative structures. To broaden the base of stabilization and ensure sustainability, RTCs will expand partnerships and promote emerging networks at every level – academia, health sector agencies and community organizations. New linkages and exchange will extend beyond the regional boundaries of any existing training centre to incorporate connections across all training centres. The current informal network of RTCs (and their affiliates), which can be directly attributed to the existing CHSRF CADRE program, will become the benchmark, providing advantages and opportunities that could not have been realized without such a network. As the health sector embraces research

and evidence-informed activities to a greater degree, the demand for continuation of the RTCs will remain strong, and it is this demand that ensures the potential for a sustainable future.

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NOTES

1. The Type 2 Diploma is a graduate-level diploma completed in conjunction with the degree. This Type 2 Diploma requires that students conduct their research project in an area of health services or policy research.

2. The date when funding concludes depends on the initial agreement between CHSRF and the RTC.

3. Such restrictions might include the Ontario Council on Graduate Studies (OCGS) criteria for graduate diplomas, for example, or the ARTC's memorandum of understanding to develop a joint master's degree.

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Epilogue

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Our purpose in putting together this special issue of *Healthcare Policy/Politiques de Santé* was to share with you the experience of designing programs to build capacity in applied health and nursing services research in Canada. We have endeavoured to describe the Regional Training Centres' development and implementation from the perspectives of the various participants – funders, researchers, students and decision-makers. We learned a lot through the process of identifying the challenges and successes, and hope you enjoyed reading this issue as much as we enjoyed writing it.

Just over a decade ago, the Canadian Health Services Research Foundation (CHSRF) and the Canadian Institutes of Health Research (CIHR) recognized that capacity needed to be built in the field of applied health and nursing services research in Canada. These funding agencies put out a call for proposals that encouraged a regional approach, partnerships and a focus on knowledge exchange. The result today is four Regional Training Centres (RTCs), each with a unique approach to training, but all producing the common outcome of graduates who have specialized knowledge

and skills in applied health and nursing services research. Ploeg et al. (2008), noting the limited research skills among staff in community care agencies, have called for innovative approaches to building research capacity in applied health services. The RTC project is just such an approach, developed with a strong focus on partnerships among universities and decision-makers.

From the inception of the RTC initiative, CHSRF/CIHR wanted decision-makers to be involved in its development and implementation. To ensure this participation, half the members chosen to serve on the proposal review panel were decision-makers. Their participation ensured that the successful proposals addressed regional needs and demonstrated a realistic understanding of the Canadian health system.

To encourage relationship and partnership building between the RTCs and decision-makers, the funders also planned two networking meetings each year. These meetings encouraged knowledge sharing, discussions of key issues relevant to all, problem solving and shared learning. Networking is a central theme across the RTC programs. In addition to these meetings, each centre has developed workshops, seminars and institutes that bring together students, faculty and administrators from universities, as well as decision-makers from the healthcare system.

Clearly, decision-makers play a central role in each RTC serving on Advisory Boards, offering paid residencies to students, participating in workshops and providing extra funding for such activities as networking and educational events. The decision-makers' involvement has ensured the success of the centres' activities and their alignment with the realities of the healthcare system. In addition to the residencies, the decision-makers assist students in developing thesis topics, guide them through methodological development and encourage and support their access to data and to members of the healthcare system. But the most critical component in the RTCs' success is the experiential learning that links students with decision-maker organizations.

The RTCs have also developed a cohort of interdisciplinary researchers who have an understanding of the system's challenges, are connected to decision-makers and are able to conduct and evaluate research. Thus, students learn to appreciate the importance of evidence-informed decision-making.

Moreover, students from other graduate programs have access to courses and seminars offered by the RTCs. As a result, graduates from other programs have also acquired expertise in applied health and nursing services research.

The RTCs attract students from a wide variety of backgrounds. The curricula have been developed in recognition that students enter the programs from many disciplines, including, for example, nursing, economics, education, biology and history. This diversity ensures that students appreciate multiple perspectives and forms of knowledge. The students learn from one another, try different approaches to issues and develop strong relationships that will continue into the future. RTC graduates

report that the programs are student-centred and flexible. Students particularly appreciate the opportunities to learn from Executive Training for Research Application (EXTRA) Fellows and CHSRF/CIHR Chairs, who regularly participate in the centres' activities.

Faculty in each centre also come from diverse backgrounds. The RTC initiative has allowed them to network with faculty and researchers from such disciplines as nursing, education, management, epidemiology, political science, economics and nutrition, thus encouraging cross-disciplinary learning and new research collaborations. These educators have learned new approaches to problem solving, reached beyond their disciplinary comfort zones and engaged in curriculum development and research that transcends their usual research and teaching foci. Participating as principal faculty in an RTC is not without its challenges – it is time consuming, service focused and often undervalued in academia. Nonetheless, faculty feel that the positive aspects overwhelmingly outweigh the negatives.

One benefit of the faculty experience is knowledge translation and exchange (KTE). CHSRF/CIHR ensured that the RTCs educated their graduates using the linkage and exchange approach popularized by CHSRF. This requirement was a focus in the call for proposals, and all the centres have incorporated KTE into their programs. Each developed KTE expertise in accordance with regional needs and local expertise, and also ensured that decision-makers helped students acquire skills in this key area.

After four years of operation, the RTCs participated in a comprehensive, independent evaluation of the project. This mid-term review highlighted the success of the initiative: all four centres were achieving their objectives while utilizing unique approaches under a range of organizational models based on regional needs. Evaluators noted that the different approaches produced the same outcome – high-quality training programs in applied health and nursing services research. Another result of the evaluation was evidence of a high level of satisfaction among students and decision-makers involved in the RTCs' activities. Students believed they had gained a grasp of the realities and complexities of the healthcare system through collaboration with decision-makers and researchers. The evaluators also found that the students' knowledge of KTE was a key strength of the program.

Central to this success story is the funding from CHSRF/CIHR, which provided stability over the first 10 years of the RTCs' operation. This timeframe enabled the centres to focus on program development and the successful launch of many initiatives. Given that current federal funding is expected to end in 2011/2012, we are now faced with the task of envisioning the RTCs of the future. Specifically, we must now explore options for sustainability, not only financially but also with respect to the management of human resources, student development and collaboration among the partners.

This special issue of *Healthcare Policy/Politiques de Santé* provides a comprehensive

overview of the Regional Training Centres' activities. We hope you have discovered information that can assist you in creating training opportunities for students and in forging new partnerships. Healthcare delivery is complex and dynamic. Preparing well qualified researchers for the field is integral to improving both healthcare delivery and its management.

Thank you for taking the time to read our stories.

REFERENCE

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DEDICATION

The Authors dedicate this Special Issue to:

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for making his vision a reality

and

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