



RESEARCH USE WEEK (ATLANTIC):
TOOLS, STRATEGIES, AND
STORIES OF USING EVIDENCE
IN HEALTH SERVICES DELIVERY
AND POLICY DEVELOPMENT

MONCTON, NEW BRUNSWICK
MAY 29-31, 2006



Canadian Health Services Research **Foundation**
Fondation canadienne de la recherche sur les services de santé

ACKNOWLEDGEMENTS

We would like to thank the nearly 100 decision makers who took time from their busy schedules to participate in Research Use Week (Atlantic). Their dedication to evidence-informed decision-making is truly inspiring. This report is a reflection of the conference discussions and was written by Judah Goldstein.

The conference would not have been possible without the support and advice of many groups and people. First, our advisory committee helped tailor the program to the needs of decision makers in the Atlantic provinces. Our thanks go out to Roma Bridger, Meredith Campbell, Lindsay Campbell, Marilyn G. Field, Katherine Kelly, Cathy Peyton, Nancy Roberts, Andrea Seymour, Iain Smith, Steven Soroka, and Lisa Underwood.

Second, we received generous financial and in-kind sponsorship from the Atlantic Regional Training Center, Eastern Health, and the Nova Scotia Health Research Foundation (gold sponsors); the South-East Regional Health Authority, the Nova Scotia Department of Health Promotion and Protection, and the IWK Health Centre (silver sponsors); and the New Brunswick Healthcare Association, the Prince Edward Island Department of Health, and the New Brunswick Department of Health and Wellness (bronze sponsors).

Finally, we thank the dedicated staff at the foundation, without whom Research Use Week (Atlantic) would never have got off the ground: Élise Comtois, Pat Conrad, Renée Donato, Maria Judd, Patrycja Maksalon, Jennifer Thornhill, and Julie Villeneuve.

KEY MESSAGES

- Become a **champion of research use** in your organization. Effective organizational research use needs strong leadership at the executive level, and evidence-informed decision-making can only be successful if it is a priority in your organization. It is possible that with strong leadership **an organizational culture of sharing and using research** can flourish as individuals become empowered to find, interpret, and apply research. Structural changes may be required to ensure users of research have the capabilities to appraise research.
- **Collaborate!** Researchers, healthcare managers, and policy experts must work together in an effort to promote the use of high-quality research during the decision-making process. Building and maintaining relationships between researchers and decision makers increases the use of research in decisions about how health services are organized, managed, and delivered.
- **Take a mixed-methods approach.** A variety of methods is often most beneficial; therefore, users of research need to be able to assess qualitative and quantitative results. Quantitative methods provide an understanding of what is happening while qualitative methods delve into the meaning and provide insight into the “why” behind the particular aspect under study.
- Pay attention to **contextual issues.** Knowledge brokers can help interpret research so it is useful for your situation. Knowledge sharing can also be facilitated by participating in networks. A clear purpose and strong trusting relationships are two important aspects of successful networks.

EXECUTIVE SUMMARY

The Canadian Health Services Research Foundation and its partners* united researchers, decision makers, and policy experts for a three-day program in Moncton, New Brunswick from May 29-31, 2006. Participants were brought together to promote the use of high-quality research to inform decision-making within the complex environment of the Canadian healthcare system. Research Use Week (Atlantic) provided participants with the opportunity to interact and share research use strategies with policy makers and health system managers from across Atlantic Canada.

Key themes were clearly present throughout the entire conference. Through large-group presentations and small-group discussions, the concept of evidence-informed decision-making was addressed. Some key concepts that encompassed many discussions throughout the week were research appraisal and uptake, contextual issues, and the organizational culture of research. These issues are not unique to any one organization; therefore, sharing success stories could potentially break through many of the barriers that prevent research from being used effectively. During the week, participants also heard about experiences where relevant research was unavailable, requiring health service decision makers to contribute to generating new research. Although this can be a daunting task, these decision makers demonstrated that producing quality research is possible and productive in this busy environment.

The importance of evidence-informed decision-making and research evaluation was highlighted on the first day of the conference. Experts in the fields of both qualitative and quantitative research articulated their message of how research can be evaluated and incorporated into the decision-making process. In many instances, much-needed relevant research evidence is unavailable to decision makers. Thus, the focus on the first day was to provide examples of how research was generated in the Atlantic region to inform decisions.

The second day highlighted the importance of providing leadership during the research process and becoming a champion of research use within the organization. Speakers from the Executive Training for Research Application (EXTRA) program provided real examples of how research was used to influence their organizations. Research use is challenging without strong leadership and the infrastructure to ensure an organizational culture of research is nurtured and supported.

On the final day of the workshop, strategies for using research were discussed. The importance of assessing organizations' capacity for using research was the basis of small-group discussions. Regardless of where an organization may be in terms of research use, it was clear that exchanging knowledge and building networks are important activities that facilitate the use of research.

* Atlantic Regional Training Centre, Eastern Health, Nova Scotia Health Research Foundation, South-East Regional Health Authority, Nova Scotia Department of Health Promotion and Protection, IWK Health Centre, New Brunswick Healthcare Association, Prince Edward Island Department of Health, and New Brunswick Department of Health and Wellness

INTRODUCTION

Brad Green, the New Brunswick Minister of Health, opened Research Use Week (Atlantic) by reiterating the primary message of this conference: research should be used to help inform decision-making within the healthcare environment, keeping in mind that the ultimate goal is to improve patient care. To incorporate research into the decision-making process, health system managers must be able to generate and evaluate sound research. Partnerships should be established to facilitate the use and exchange of research within the healthcare system. Research Use Week (Atlantic) provided a platform to increase awareness of the roles of research in management and policy decisions; assist managers and policy makers in evidence-informed decision-making by connecting them with the Canadian Health Services Research Foundation and local research use tools and strategies; and facilitate interaction and sharing of research use strategies between organizations and individuals in each region. Conference participants came from all four Atlantic provinces (see Table 1).

Effective communication is necessary to ensure research is used to inform decision-making. Research Use Week (Atlantic) provided participants with the opportunity to share experiences and develop collaborative relationships that ultimately will facilitate research use in Atlantic Canada. The event gave more than 100 health system analysts, chief executive officers, vice-presidents, directors, managers, department heads, and others from across Atlantic Canada the opportunity to learn about research and share their tools, strategies, and stories of using evidence to inform health services delivery and policy development.

Table 1: Demographic information of Research Use Week (Atlantic) participants and evaluation form results

<i>Group or Survey Question</i>	<i>Number/Percentage</i>
Conference attendees	121
Conference participants	97
Conference speakers	15
Conference facilitators	6
Conference organizers	3
Attendees from New Brunswick	41
Attendees from Nova Scotia	40
Attendees from Newfoundland	19
Attendees from Prince Edward Island	10
Attendees from Ontario	11
Manager participants	48% *
Policy maker participants	13% *
Knowledge broker participants	4% *
Researcher participants	13% *

Others	17%*
Unknown	2%*
Survey respondents who rated the event as useful or very useful	100%*
Survey respondents who indicated they would attend this type of event in the future	96%*
* Based on 52 evaluation forms received	

RESEARCH 101: WHAT IS RESEARCH EVIDENCE? (DAY ONE)

To use research, decision makers must understand what it is and how it should be appraised. Academic researchers from Atlantic Canadian universities presented a variety of research approaches during the conference’s opening session. For organizations to be able to better acquire, assess, adapt, and apply research in their decision-making processes it is necessary to possess the building blocks described in the research 101 sessions. Research evidence can be produced using quantitative, qualitative, or mixed methods; therefore, decision makers must be able to assess the quality of evidence produced by various approaches.

Qualitative Methods

Debbie MacLellan, the chair of family and nutritional sciences at the University of Prince Edward Island, provided participants with a number of tools to help assess qualitative research. It is not adequate to state qualitative research was used; rather, attention must be paid to the methodological approach. This may be accomplished by ensuring some individuals in or linked to an organization understand qualitative methods. Qualitative research represents a means for presenting data in the form of words, not numbers. Furthermore, this approach answers the question why, providing deeper meaning to phenomena from the participant’s perspective. The researcher in this case is an instrument, so her thoughts and opinions are an integral part of the data analysis process. To ensure qualitative research is of high quality, there should be evidence the research process was systematic and rigorous. The research process should be clearly outlined.

Decision makers wanting to consult qualitative research can assess whether data were systematically collected and the qualitative research approach described in a particular study by evaluating for trustworthiness, credibility, transferability, dependability, and confirmability (Figure 1). They should ask themselves if they can be confident in the “truth” of the findings. There are often multiple realities; therefore, the researcher must fully explore the data to ensure the findings are credible. The context of the study is also very important so decision makers can know if the results can be applied to their organizations.

Figure 1: Assessing the Quality of Qualitative Research

Credibility — confidence in the “truth” of the findings

Transferability — degree to which the findings can be applied to other contexts

Dependability — accounts for changing conditions in the study

Confirmability — degree to which the findings are strictly a function of the research participants and conditions of the research and not of other factors

Quantitative Methods

Unlike qualitative research, quantitative research primarily deals with numbers, often presenting data in graph and table formats. Rick Audas, a professor of community health at Memorial University of Newfoundland, provided insight into quantitative research focusing on economics. While he eloquently explained economics as “the science of choice,” it is often a poorly understood and communicated term. Dr. Audas explained economics provides a framework for thinking about decisions people make; to make the best use of a finite level of resources and maximize wellbeing, research should be a part of the decision-making process. Dr. Audas also noted that, when evaluating research, it is important to understand how biases sometimes distort the true effect of the intervention and that, in health economics, it is easy to know the costs but not so easy to quantify the benefits.

Mixed Methods

It was clear during Research Use Week (Atlantic) that often what is necessary is a mixed-methods approach to research, since both quantitative and qualitative research can potentially contribute to the decision-making process in an organization. Ingrid Sketris, a pharmacy professor at Dalhousie University and holder of a CHSRF/CIHR chair award, expanded on this during her presentation. Quantitative methods allow decision makers to explore cause and effect relationships, while qualitative research provides deeper meaning into particular phenomena, exploring the reasons behind the data. Dr. Sketris explained these methods should be used in a complementary way.

When research is used to inform the decision-making process, it must be of high quality. For example, survey research is often among the most poorly done, according to Dr. Sketris. A way to ensure the research process is carried out appropriately is to use existing and validated tools and experts in the field of interest.

Program Evaluation

Dale Poel of the consulting firm Goss Gilroy Inc. demonstrated how both qualitative and quantitative research can inform program evaluation. The goal of program evaluation is to develop causal linkages; this can be achieved by applying a mixed-methods approach to evaluation design. The goal of a program must be clearly defined in

the initial stages to be able to effectively evaluate it, and a logic model depicting the program should be developed (Figure 2). Dr. Poel acknowledged a program cannot be evaluated unless people agree on its objectives. When findings are finally brought forward they must be presented in a digestible, useable format. Dr. Poel also discussed the differences between outcomes evaluation — the gold standard that looks at results — and process evaluation — which provides insight into how the program functions. It is often valuable to sort out short-term and long-term deliverables when designing program evaluations.

In terms of mixed methods, with program evaluation, it's not a choice between X, Y, and Z; one must do all of these. — Dale Poel

Figure 2: Four Basic Evaluation Questions

1. What do you want or need to get credit for?
2. When will it happen?
3. How will you know it happened?
4. How can you communicate useful evaluation findings to decision makers?

The research 101 sessions wrapped up with a presentation on public policy by Stephen Tomblin, a professor of political science at Memorial University. Again, the importance of using mixed methods was prevalent. Dr. Tomblin highlighted the importance of new, interdisciplinary approaches to public policy. It is important to look not just at the evidence but at the context of the situation, and evidence must be constructed in such a way that it reflects the political reality, according to Dr. Tomblin. In public policy, it is becoming more apparent that academics and decision makers must come together. Currently, academics are organized within disciplines or silos; however, they need to be brought together to work in a coherent fashion. One role of evidence is to legitimize and generate support among people in the public policy domain, so partnerships may make it possible to use evidence more effectively.

Following the research 101 sessions, small-group discussions focused on how research is integrated (or not) within organizations. In some instances research can be integrated within an organization if it is included in business plans and used to ensure accountability. Questions pertaining to quality assurance initiatives versus the generation of research evidence arose; it is difficult to separate the two roles, as the differences between evaluation and research are not always apparent.

Conference participants were also asked what helps or hinders them from using research. Five key themes arose from the roundtable discussions: capacity-building; timing of research; the structure of organizations; context; and terminology. Organizations must examine how best to develop a culture of research — having a champion or dedicated resources in an organization to facilitate the generation and/or interpretation of research is helpful. In many situations the structures in place in organizations often hinder research use. Timing was also identified as an important issue, specifically when the political cycle and research cycle are not aligned.

Decision makers should pay particularly close attention to the context of research. Research contradictions can sometimes be observed between studies, and in many cases this is due to contextual differences in the research design or setting.

Decision makers should pay particularly close attention to the context of research. Research contradictions can sometimes be observed between studies, and in many cases this is due to contextual differences in the research design or setting. Finally, terminology was identified as a barrier to using research. Decision makers need the capacity to identify, assess, and translate research and make it user-friendly for their setting and colleagues. During this translation process it may be possible to sort out conflicting research results. The roundtable discussions identified success stories along with barriers to using research in a complex decision-making environment.

Research 101 allowed academic researchers the opportunity to provide high-level overviews of research methods to health system managers. The general consensus was there is a need and value for qualitative, quantitative, and mixed-methods approaches to health services research. The key for decision makers who use research is to acknowledge that both forms of research are valuable to informing healthcare decision-making.

What to do when research evidence is not available?

When research is unavailable to inform healthcare decisions, health system managers can consider generating their own, often by working with researchers. George Tilley, the president and CEO of Eastern Health in Newfoundland, provided a rich description of the complex environment in which healthcare decisions are made. The healthcare environment is complex, constantly changing, and rife with uncertainty. And often, research reports discuss single issues in isolation, while decision makers must consider the implications of a decision on other issues.

Mr. Tilley highlighted the three Es of decision-making: emotion; employment; and evidence (Figure 3). These factors all influence decisions; however, research evidence is only one part of the process and it is often consulted last. Although there are other factors that influence decision-making, research can be a catalyst for initiating change and guiding decision-making, and it can be a basis for evaluating decisions. Mr. Tilley emphasized the importance of building a strategy for an evidence-based culture in an organization. The research agenda must be pushed within an institution, and a culture of research uptake and dissemination needs to be cultivated.

Figure 3: The Three Es of Decision-Making

1. Emotion
2. Employment
3. Evidence

Édouard Hendriks provided an example of how research influenced Regional Health Authority 4 in New Brunswick, where he is interim president and vice-president

of medical affairs. Dr. Hendriks first outlined the scenarios that typically exist when attempting to use research. When people say research is unavailable, they usually mean one of four things: 1) applicable research does not, in fact, exist; 2) applicable research exists but is unknown to the potential user — this is where a knowledge broker comes in, identifying potential sources of research; 3) research exists but is not applicable due to contextual differences; or 4) applicable research exists and is accessible but is not used because decision makers are blind to its potential use (Figure 4). To overcome this situation, structural and cultural changes are required within the healthcare organization.

Figure 4: Four situations when research is “unavailable”

1. Applicable research does not exist.
2. Applicable research exists but is unknown to the user.
3. Research exists but is not applicable.
4. Applicable research exists and is accessible but is not used because decision makers are blind to its potential use.

Many participants at Research Use Week (Atlantic) discussed the unique challenges of being geographically and professionally isolated, as is the case for Regional Health Authority 4. In this setting, there is traditionally slower integration of new research evidence. Dr. Hendriks described how his health authority overcame these challenges to implement a patient safety culture that includes effective research uptake. This required strong leadership, along with mechanisms to facilitate the use of research within the decision-making process, such as using informal evidence, linking up with the research community, and understanding context by having knowledge brokers assist with adapting and applying research in the decision-making setting.

Jocelyn Brown, the primary healthcare co-ordinator at the Fisherman’s Memorial Hospital (part of the South Shore District Health Authority in Nova Scotia) followed with her experience integrating research into primary healthcare in her health authority. Two initial challenges were the lack of a research mandate and the confusion that existed around the definition of primary healthcare. Ms. Brown acknowledged there is a growing body of literature regarding primary healthcare, but difficulties implementing a research-informed approach are very real. The importance of building relationships and trust was paramount in this project. Initially there was a lack of trust; to overcome this, it was necessary to share information, support the development of a vision, and build confidence between collaborators.

The health authority set up a primary healthcare working group, which gave it a forum to collaborate with the Department of Health; activities included discussions on activities, successes, and challenges and providing mutual support. In effect, it was a group focused on knowledge transfer. This forum allowed supportive relationships to develop, with immediate networking and strategic planning. Ms. Brown emphasized the greatest success of this group was building and maintaining relationships.

During the afternoon session, policy makers also provided insight into how research could be used. Juanita Barrett, then team leader in the Office of Primary Health Care for the government of Newfoundland and Labrador, reiterated messages heard throughout the day with her description of primary healthcare in Newfoundland. Again, the silos in the academic research community were mentioned as a barrier to using research. Uncertainties regarding the reliability, validity, and relevance of research were challenging, particularly in the realm of systems research, where relevant research sometimes does not exist. Ms. Barrett reflected on how timelines are often difficult to work with when implementing research — it is often difficult to show clinical outcomes in a short period of study. Finally, one of the biggest difficulties in using research is the ability to formulate an appropriate question that research can answer or inform.

For policy makers to be able to use research more effectively, Ms. Barrett offered the following suggestions: 1) improve access to organized research syntheses and applied health services research; 2) place more emphasis on organizational and systems changes; and 3) set appropriate timelines to effectively carry out or use research.

Similar issues were described by Katherine Kelly of the Prince Edward Island Department of Health. The government planned to establish six family health centres but needed evidence on the most appropriate model. The government did a literature review to help choose the model, and an evaluation process was implemented to identify evidence of success during the initial stages of the project. Ms. Kelly identified issues that impeded the use of research during this process. For example, during the literature review, they had to focus on research that fit current priorities and was readily accessible. Ms. Kelly also discussed the use of consultants and academic researchers, and she noted timelines often influenced final decisions (the most appropriate researcher in most cases will ultimately be dictated by the timeline).

Rick Manuel, the director of policy and planning with the Nova Scotia Department of Health, spoke about timeliness of and timelines for research. He also emphasized that research is only one factor that influences decision-making. To make sure research does get considered, researchers must remember the three Ps of policy uptake: preparedness; persistence; and patience (Figure 5). Researchers must build connections with decision makers, which may be possible by developing relationships with mid-level decision makers. It is also important to make connections with other departments and to develop partnerships that work towards a common goal.

Think long-term in terms of strategy and short-term in terms of tactics. — Participant

We need to build on forums like Research Use Week. We will lose if we don't. — Participant

Figure 5: The Three Ps of Policy Uptake

1. Preparedness
2. Persistence
3. Patience

Day One Summary

For health system managers and policy makers to be able to use research, a number of barriers must be overcome. Structural changes in the healthcare system focusing on processes and people would allow research to be used more effectively. Decision makers also need to ensure research is accessible to their staff and is timely, relevant, and user-friendly. For example, Policy Watch, produced by the Nova Scotia Department of Health, is a valuable compilation of research reports that is easily accessible. In terms of processes, evaluations must be built into new programs up front. Researchers must re-examine how they make research available, as journals directed at a clinical audience are often not user-friendly for decision makers. The final thought for the day was to engage the public and communities to impart the value of research to others. Research use is a collaborative effort that must involve multiple stakeholders to be successful in the healthcare setting.

Sister Elizabeth Davis, chair of the foundation's board of trustees, summed up the day by saying decision makers need to engage the public and build support, focus on developing relationships (partnerships), and remember to say thank-you. The goal is to make research-informed decisions so patient care can be improved. While researchers and decision makers have separate roles, it is necessary to foster connections between these groups so real change can occur to improve patient care and ultimately the health of those the healthcare system serves.

STRATEGIC LEADERSHIP (DAY TWO)

To be able to use research in healthcare organizations, there must be strong leadership at the executive level guiding its implementation. Fellows from the foundation's Executive Training for Research Application (EXTRA) program from the Atlantic region provided concrete examples of how research was used in local healthcare organizations. EXTRA focuses on developing capacity and leadership to optimize the use of research evidence at the executive level of healthcare organizations (Figure 6). Evidence can be part of healthcare organizations' decisions if it is made a priority.

Figure 6: The Extra Program

EXTRA is a fellowship program designed to train health services leaders to become even better decision makers by learning how to find, assess, and interpret research-based evidence.

Using public health as an example, Maureen Dobbins, an assistant professor of nursing at McMaster University, explained the process of knowledge generation and uptake. There is usually a 15-year gap between the generation of new knowledge and its uptake into practice. To shorten this gap, effective knowledge transfer strategies are necessary. Passive strategies such as publishing in peer-reviewed journals are ineffective mechanisms of data dissemination to decision makers. A more effective means of

knowledge transfer is to bring together producers and users of research through a variety of interactive strategies. Decision makers, once aware of new literature, must be able to assess individual, organizational, environmental, and innovation characteristics so the research can be used most appropriately.

Upon adopting or rejecting the research's recommendation, it is important to develop organizational measures to evaluate the decision. Evidence-informed decision-making requires critical thinking about the local environment and political realities encompassing the situation.

A topic that arose throughout the conference was the issue of developing an organizational culture of research use. Leaders in healthcare organizations must promote the flow of new information by helping users understand and interpret new research so it can be used in local environments. Collaborations and partnerships must be developed. Measures of success should be identified early by focusing on short-term goals instead of only looking at the final end goal. Ultimately, an organizational culture of research use must be sustainable as well.

The EXTRA program is one way of developing partnerships across Canada. Through this program, EXTRA fellows are able to discuss similar issues between regions and share information. Lindsay Campbell, the interim vice-president of population health and research at the Cape Breton District Health Authority, described her fellowship as a "journey," as she learned that becoming a leader in research use entailed pushing her personal boundaries and challenging herself. For Ms. Campbell, this meant investigating a clinical question that arose in her area though a review of ambulatory care-sensitive conditions with a high rate of hospitalization. To better define her research topic and narrow the scope of the project, she decided to focus on diabetes. For this chronic disease, resources for care already existed in the local region; therefore, the objective was to use research to optimize their usage.

The first step in her project was to review the literature and identify existing programs of chronic care. Isolated initiatives such as disease-specific education centres and Wagner's Chronic Care Model are known to be effective. Following this review of the literature, Ms. Campbell compared her local area with other areas where chronic care management strategies were implemented. Once she had a sound understanding of the local situation, a research question was developed which focused on investigating the chronic care model and its effect on admissions and length of stay for patients with diabetes.

During this research initiative, a window of opportunity existed to implement this chronic care model. Ms. Campbell emphasized it is important to be prepared and ready for these opportunities. Also, for non-clinicians investigating clinical questions, she recommended taking a soft approach. This entails being able to ask the right people the right questions, as opposed to challenging current practice. A final lesson that cannot be overstated is that it is sometimes easier to invoke change outside larger centres. To become a leader in research use within an organization, decision makers must integrate

research use within their daily activities. Opportunities for dialogue and information sharing must occur and tools/strategies for filtering information should be implemented.

Susan Smith, president of Wayfinder Consulting, also shared her experiences with the EXTRA program and developing research use literacy. The initial objective of Ms. Smith's project was to investigate the physician resource planning strategy at Capital District Health Authority in Halifax, Nova Scotia, where she was the director of medical services. During her initial investigation she realized the physician impact assessment tool and process were ineffective and of little benefit to decision makers. In this situation, the project needed to be enlarged because no centralized physician resource planning truly existed. Ms. Smith conducted a literature review, a cross-country survey, and interviews to determine what practices were in existence and to gain a better understanding of their effectiveness. The overall conclusion of this initial review was that organizations were using physician resource planning tools, but they were not working well. The next step involved the redevelopment and pilot of the Impact Assessment Tool. By focusing on the language used, implementing a consultation process, and capitalizing on a window of opportunity, Ms. Smith was able to incorporate change in her organization by taking a leadership role in the research process. One comment pertaining to the new impact assessment tool highlighted by Ms. Smith was "this is the kind of information we need to make decisions!"

Steven Soroka, the medical director of nephrology for the Capital District Health Authority in Halifax, provided another example of how research can influence patient care and the decision-making process in the context of chronic kidney disease. Dr. Soroka defined the scope of the problem and setting within Nova Scotia. Some primary components of this issue included the increase of chronic kidney disease in Nova Scotia, the rural/urban mix of patients, and the duplication of services. The primary problem, though, was the abundance of paper charts and inaccessible or unstructured electronic data sources, which Dr. Sokora described as "congestive chart failure."

The objective of his project was to implement a chronic disease care model by improving the use of electronic data management. To improve clinical research capacity it was necessary to link multiple databases within the province. A notable success of the EXTRA program is the investment in physicians' obtaining leadership skills pertaining to research use, as was the case here. By participating in and guiding a research project such as this, Dr. Soroka gained invaluable leadership skills and team-building capacity. This project also allowed his group to become more aligned with the goals of the organization and to have a greater appreciation of how the entire system functions. By emphasizing small wins and demonstrating the value of a process and management change, Dr. Sokora has been able to improve service delivery for chronic kidney disease.

In small- and large-group sessions, conference participants discussed key questions related to lessons learned from the EXTRA fellows in more detail. Participants were asked to identify potential leaders of research use within their organizations, to weigh the importance of research evidence presently used by decision makers, and to discuss tools and strategies for research use.

To be able to use research successfully, decision makers must build collaborations. The EXTRA program is an excellent way to foster connections nationally and build an awareness of other national initiatives. Andrea Seymour, the vice-president for health information and chief information officer for River Valley Health in New Brunswick, remarked it was interesting to have decision makers and other health professionals in the same room, as they often don't realize they don't always speak the same language. When research results do not support the healthcare organization's activities it is important to recognize constraints and to develop mechanisms to circumvent barriers.

Conference participants examined the skills required by research use leaders. It is helpful to use an existing framework to assess the quality of research evidence, because decision makers need to be able to assess the validity and transferability of research results. This may be done by adopting other systems that rank research using grades and levels of evidence. Research use leaders must also possess competencies in knowledge transfer and promoting research use, which may be facilitated by developing a knowledge base of what research and networks presently exist in the Atlantic region. Finally, research use leaders must have the ability to ask difficult questions and expect evidence-informed decisions from everyone in the healthcare organization.

Strong leadership that embraces and values research use is required throughout the organization to ensure an evidence-informed culture is developed and sustained. When possible, formal relationships should be established with academic institutions, which should allow individuals within the organization to gain access to research evidence and formal support structures enhanced by academic centres. This will also help decision makers understand what research and quality evidence really is. Research evidence can help facilitate change if it is in contrast to and creates discomfort with what is presently being done. And while all decisions within a healthcare organization will not necessarily be based on research evidence, strong research use leaders can take a step back to assess the evidence so it is considered and the best possible decision made.

Many tools and strategies are presently being used in healthcare organizations to improve research use. As an example, a toolkit for knowledge transfer is being developed by the Nova Scotia Health Research Foundation. This toolkit may be used by government officials and non-governmental organizations to improve knowledge transfer activities. Surveys developed by applied health services programs can be another resource to assess decision-making organizations. Decision makers need to "look within our networks to understand what tools already exist," according to one conference participant. In the past few years there has been an explosion of information from organizations such as the Canadian Institute for Health Information and the Canadian Health Services Research Foundation. Decision makers must tap into these tremendous sources of information to improve their organizations.

Research use in healthcare organizations often comes down to leadership. Though strong leadership at the top of the organization is necessary to model research use, there

must be leadership and uptake at all levels. Key attributes of research use leaders were best summed up by Ms. Smith when she stated “I’m nosy.” Research use leaders must be inquisitive and ready to confront challenges. They must also possess the skills necessary to appraise research by judging the quality and level of evidence of research findings.

Ms. Seymour concluded the second day’s session by identifying key lessons from the EXTRA fellows’ presentations. For projects to be successful it is often necessary to align them with the strategic direction of the organization. Change must also be integrated within the organization based on the research results. There should be opportunities for dialogue between key stakeholders. Finally, decision makers must take the time to celebrate successes in research use and implementation.

ORGANIZATIONAL STRATEGIES FOR USING RESEARCH (DAY THREE)

The final sessions of Research Use Week (Atlantic) focused on assessing organizations’ capacity to use research, knowledge brokering, and networks. As noted, there is an estimated 10-to-15-year gap between research production and policy uptake. Through effective knowledge brokering and network development, this gap could be lessened. Ultimately, research should be used to enhance services and improve health outcomes. According to Maria Judd, the foundation’s senior program officer for research use, “the incorporation of research into an organization is a process... that should improve the quality of decisions.” Using research evidence also increases the transparency of decisions. To become a “good user of research” organizations must invest in people, processes, and structures.

One tool that can be used to initiate discussions about research use and identify how research is gathered and used is *Is Research Working for You?*, the foundation’s self-assessment tool and discussion guide for health services management and policy organizations. This tool helps decision makers determine how research is being used within their organizations. By examining the four As of research use (acquiring, assessing, adapting, and applying research), improved methods and strategies of incorporating research into practice can be identified and implemented (Figure 7).

Figure 7: Characteristics of Research Use

Acquire — Can the organization find the research evidence it needs?

Assess — Can the organization assess whether the research is reliable and high-quality, and whether it is relevant and applicable?

Adapt — Can the organization present the evidence to appropriate decision makers in a useful format, which synthesizes recommendations, conclusions, and key issues?

Apply — Does the organization have the skills, structures, processes, and corporate culture to promote and use research evidence in decision-making?

Leaders from the South-East Regional Health Authority in Moncton, New Brunswick provided examples of how research was being used within their organization. Nancy Roberts, the authority’s vice-president of planning and professional services,

provided an overview of how the research process has shaped health services delivery in her organization. Using a mixed-methods approach, internal and external stakeholders at the health authority were consulted to examine strategic priority areas. Through this organizational review, accountability and a culture of research were identified as two priorities. Processes and structure were then put into place to support research use as a priority. To accomplish this goal, a health services planning, utilization, and research working group was created in fall 2003.

Since this time, the working group has fostered an organizational culture that encourages and supports teaching, learning, research, and innovation. Since research has become a focus at the health authority clinical drug trials increased by 47 percent and health services research projects increased by 300 percent. The major hurdle that needed to be overcome was the lack of infrastructure to support grant writing activities. Although barriers such as this do exist, this example demonstrates that by investing in people, structures, and processes real growth can occur.

Michelina Mancuso, the manager of research services for the health authority, expanded on Ms. Robert's overview of the role of research in the authority. She noted the health authority realized effective knowledge transfer was imperative and represented a realistic starting point for research services. To improve knowledge transfer within the organization, linkages needed to be created between researchers and users of research. The authority also realized other areas, such as medical education, research ethics boards, and health professional groups, needed to be linked together. Ms. Mancuso noted that "due to a lack of resources, interesting links were developed." Finally, research services must be available 24/7 due to the shift work of health professionals.

Claire Leblanc, the health authority's program administrative director for women's and children's health, provided another example of how research was used effectively. The key to using research in the women's and children's health program was the interdisciplinary team approach to examining issues and developing solutions. These examples demonstrate that through building partnerships and investing in people, processes, and structures in the healthcare organization it is possible to increase the organization's capacity to use research.

Knowledge Brokering

Ms. Mancuso highlighted the fact that knowledge brokering is a necessity in any organization's strategy to improve research use. Knowledge brokering must be embedded into the operational culture of an organization according to Lise Roy, the vice-president of planning and evaluation at Regional Health Authority 4 in New Brunswick. It is essentially collaboration between researchers and decision makers that incorporates planning, producing, and disseminating research into the activities of the healthcare organization. Lynne Duffy, an associate professor of nursing at the University of New Brunswick, stated effective knowledge brokers are able to initiate partnerships with decision makers so they are active participants in the research process. To be successful, knowledge brokers must know their audience and be able to form linkages between

researchers and decision makers. Finally, knowledge brokers must be creative when disseminating research; for example, Dr. Duffy talked about research findings being disseminated in the form of a poem. In this way it may be possible to provide more insight into both the important contextual and cultural issues surrounding a particular problem.

The morning session of day three concluded with conference participants discussing knowledge brokering activities that occur within their organizations. Currently, the challenge seems to be getting individuals in healthcare organizations to value knowledge transfer and brokering roles. Knowledge brokers must be able to span the academic and service delivery divide. More specifically, in Atlantic Canada people must think regionally to effectively use knowledge brokers. Many recommended that formal structures in the region be put into place, supported by senior management. Conference participants also discussed the importance of having research champions within organizations and provinces. Knowledge brokering activities may be improved by incorporating a formal training process in Atlantic Canada. Also, graduate students from a variety of disciplines need to be engaged and used in organizations. One issue that was discussed throughout the week was the notion of creating a culture of research, which can only be done if the infrastructure is put into place. Knowledge brokers can be an integral part of this infrastructure and it is worthwhile to examine how this role can be integrated within healthcare organizations.

Knowledge brokering is the human face behind knowledge transfer. — Lise Roy, Vice-President, Planning and Evaluation, Regional Health Authority 4, New Brunswick

Without research we work by trial and error, which is not good in healthcare. — Lynne Duffy, Associate Professor, Faculty of Nursing, University of New Brunswick

During the theme-based lunches, groups had the opportunity to share how research has influenced their organizations and to discuss priority issues within Atlantic Canada (see Appendix 2 for a list of topics discussed). One such priority among the four Atlantic provinces must be to develop strong research use networks involving members of the community, academic contacts, and government officials. To involve multiple sectors a common language needs to be developed, which may be possible with the use of knowledge brokers. According to Linda Snyder, a program officer with the Atlantic Centre of Excellence for Women's Health, networking and knowledge brokering bring the pieces together. These components must be built into all aspects of healthcare organizations.

I liked the discussion about and use of 'evidence-informed decision-making' versus 'evidence-based' during the conference; this will change in my RHA. — Participant

Networks

Networks are another strategy for improving capacity to use research. Building relationships is key within networks. Networks can foster collaborations, promote

knowledge sharing, facilitate communication, and foster a culture of innovation and change according to Patrycja Maksalon, then the foundation's senior program officer for networks and exchanges. They must be unique and purposeful to be sustainable.

Networks are essential, as learning and innovation typically occur in informal settings. Ms. Maksalon discussed three models of networks: the spider web model (strong nucleus); the tent model (hierarchical); and the fish net model (flexible). The type of network developed will likely depend on the relationships formed and the initial purpose of the network, though they all share certain characteristics (Figure 8). Stephen Bornstein, the director of the Newfoundland & Labrador Centre for Applied Health Research, expanded on Ms. Maksalon's introduction to networks, providing multiple examples of how networks evolve into other networks and collaborations. He emphasized decision makers must be self-conscious, self-aware, and self-examining of what is working within their networks. Conference participants recognized there were multiple networks present in their regions, including professional, soft, and knowledge networks; all are important as long as a clear purpose is identifiable.

Networks provide a mechanism to overcome some of the barriers to evidence-informed decision-making. For example, knowledge transfer at the policy level, lack of understanding of research design, and difficulties with the readability of research can all be enhanced through networks involving researchers and decision makers.

Figure 8: Key Characteristics of Networks

Commitment
Vision
Value
Trust
Reflection/evaluation (network evaluation)
Leadership
Resources/support
Collaboration
Flexibility

This conference was a great, great experience for me. There simply is nowhere else to go for best practice information on research use as a whole. — Participant

During Research Use Week I was able to create contacts with other individuals working in similar areas in the Atlantic region. This event helped me make connections and understand the links between policy, economics, research, and evaluation. Very worthwhile three days! — Participant

Ed Biden, the associate dean of the school of graduate studies at the University of New Brunswick, closed Research Use Week (Atlantic) by reiterating the need for a clear concept of what evidence-informed decision-making really entails. There are many challenges for university and healthcare organization collaborations. One researcher

shared that following the event he would “talk with more users of research to incorporate their experiences into our research.” Dr. Biden compared this relationship to walking with a three-year-old, where we see the world through different eyes. Evidence-informed decision-making within the healthcare system will be driven by curiosity at the individual, organizational, and network levels. Ultimately, evidence-informed decision-making should lead to improved patient outcomes and a more efficient healthcare system.

Research Use Week participants were encouraged to contact Cathy Peyton at the Atlantic Regional Training Centre (www.artc-hsr.ca) with comments or questions related to follow-up activities exploring research use in the region after the conference.

APPENDIX 1: RESEARCH USE WEEK (ATLANTIC) PROGRAM OVERVIEW

Sunday, May 28, 2006	
6 p.m. – 7 p.m.	Registration
Monday, May 29, 2006 — Research 101 for Evidence-Informed Decision-Making	
8 a.m. – 9 a.m.	Breakfast and registration
9 a.m. – 9:30 a.m.	Opening comments by the Honourable Brad Green, Minister of Health, Attorney General, Department of Health and Wellness, New Brunswick
9:30 a.m. – 12:30 p.m.	Research evidence — what is it and what is it good for? How can different types of evidence inform decision-making?
12:30 p.m. – 2 p.m.	Networking lunch
2 p.m. – 5 p.m.	What to do when research evidence is not available? Initiating and leading new research as decision makers
5 p.m. – 7 p.m.	Opening reception and welcome by Sister Elizabeth Davis, Chair, Board of Trustees, CHSRF; Sisters of Mercy of Newfoundland & Labrador
Tuesday, May 30, 2006 — Strategic Leadership	
8 a.m. – 9 a.m.	Breakfast and registration
9 a.m. – 5 p.m.	Tools, strategies, and experiences of leaders influencing their organizations through research use
5 p.m. – 7 p.m.	Networking time
Wednesday, May 31, 2006 — Organizational Strategies for Using Research	
8 a.m. – 9 a.m.	Breakfast and registration
9 a.m. – 10:30 a.m.	Assessing your organization's capacity to use research
10:45 a.m. – 12:30 p.m.	Knowledge brokering: Building relationships between health system decision makers and researchers
12:30 p.m. – 2:30 p.m.	Regional initiatives: Theme-based lunch table discussions
2:30 p.m. – 5 p.m.	What's all this talk about networks? Developing and using networks to enhance the use of research
5 p.m. – 5:30 p.m.	Closing comments by Ed Biden, University of New Brunswick

Please visit the foundation's web site at www.chsrf.ca/pdf/RUW_Atlantic_program_e.pdf to view the full program.

APPENDIX 2: TOPICS PRESENTED AT THE THEME-BASED LUNCH

Topic	Primary presenter(s)	Organization(s)
Conceptualizing, Assessing, and Enhancing Health Systems' Capacity to Use Research	Celeste Alvaro	Atlantic Health Promotion Research Centre
What Counts? Ensuring Evidence is Appropriate and Inclusive	Carolina Crewe	Atlantic Centre of Excellence for Women's Health
Networking for Social and Economic Inclusion in Atlantic Canada: Lessons Learned by the Atlantic Centre of Excellence for Women's Health	Linda Snyder	Atlantic Centre of Excellence for Women's Health
Policy Watch	Ruth Hart	Nova Scotia Department of Health
Primary Knowledge in Primary Health: Collaborative Learning in Practice	S. Ann Colbourne	Memorial University of Newfoundland
Atlantic Provinces Join Forces to Launch Regional Research Initiative	A) Lisa Underwood B) Stephen Bornstein	A) Capital District Health Authority, Nova Scotia B) Newfoundland & Labrador Centre for Applied Health Research
How a Health Ministry Helped Staff Understand and Apply Research Evidence — Over Lunch	Rick Manuel	Nova Scotia Health Promotion
Community Counts	Dennis Pilkey	Department of Finance, Government of Nova Scotia
Reduction of Psychotropic Drug Utilization in the Management of Behaviours in Long-Term Care	Sharon Sheppard	Cape Breton Healthcare Complex
The Canadian Agency for Drugs and Technologies in Health (CADTH): Providing Evidence-Based Information to Healthcare Decision Makers	Joyce Thompson, Stephanie Smith, and Lisa Farrell	Canadian Agency for Drugs and Technologies in Health

APPENDIX 3: RESEARCH USE 101 REFERENCE LIST

This list was compiled from references suggested by presenters from Atlantic Canadian universities representing various research approaches and perspectives.

Program Evaluation References Suggested by Dale Poel

Wholey JS et al. 2005. *Handbook of Practical Program Evaluation, second edition*. Jossey Bass. [very practical]

Mohr LB. 1988/1992. *Impact Analysis for Program Evaluation*. Sage Publications. [award-winning discussion of quantitative methods of evaluation without being a textbook in statistics]

Weiss CH. 1998. *Evaluation: Methods for Studying Programs and Policies, second edition*. Prentice Hall. [generic overview still in print and cited]

Canadian Evaluation Society. 1986-present. *The Canadian Journal of Program Evaluation*. www.evaluationcanada.ca

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Public Policy References Suggested by Stephen Tomblin

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Brooks S and Milijan L. 2003. *Public Policy in Canada: An Introduction, fourth edition*. Oxford University Press. [at least first couple of chapters]

Bradford N. 1998. *Commissioning Ideas: Canadian National Innovation in Comparative Perspective*. Oxford University Press. [at least first couple of chapters]

Banting K et al. 1997. *Degrees of Freedom*. McGill-Queen's University Press. [especially first chapter]

Adams D (ed.). 2001. *Federalism and Health Policy in Canada*. McGill-Queen's University Press. [especially first chapter]

McIntosh T et al. 2004. *The Governance of Health Care in Canada*. University of Toronto Press. [especially chapter on civic engagement]

Qualitative Research References Suggested by Debbie MacLellan

Mays N and Pope C. 2000. "Qualitative research in health care: Assessing quality in qualitative research." *British Medical Journal*; 320: 50-52.

Green J and Britten N. 1998. "Qualitative research and evidence based medicine." *British Medical Journal*; 316: 1230-1232.

Russell C and Gregory D. 2003. "Evaluation of qualitative research studies." *Evidence Based Nursing*; 6(2): 36-40.

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Mixed-Methods Research References Suggested by Ingrid Sketris

Borkan JM. 2004. "Mixed Methods Studies: A Foundation for Primary Care Research." *Annals of Family Medicine*; 2: 4-6.

Boulmetis J and Dutwin P. 2000. *The ABCs of Evaluation. Timeless Techniques for Program and Project Managers*. Jossey-Bass Inc.

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Johnstone PL. 2004. "Mixed Methods, Mixed Methodology Health Services Research in Practice." *Qualitative Health Research*; 14(2): 259-271.

Health Economics References Suggested by Rick Audas

Haynes RB et al. 2005. *Clinical Epidemiology: How to Do Clinical Practice Research*. Lippincott Williams & Wilkins.

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Drummond M. 2001. *Economic Evaluation in Health Care: Merging Theory with Practice*. Oxford University Press.

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