EXPERIENCES IN A COLLABORATIVE PROGRAM OF RESEARCH

AN EXPLORATION OF EXPERIENCES OF ACADEMICS AND DECISION-MAKERS IN A COLLABORATIVE PROGRAM OF RESEARCH

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ABSTRACT

The purpose of this study was to explore and describe the experiences of academic and decision-maker researchers participating in a public health integrated knowledge translation (IKT) and exchange program of research in Ontario and British Columbia. This research sought to identify structures and processes that acted as enablers or barriers for all partners on a research team as they engaged in collaborative research. The researcher answered the following research questions: *What are the experiences of academics and decision-makers participating in the first two years of an integrated knowledge translation program of research? What structures and processes positively and negatively influence the engagement of partners on the collaborative research team?* Through answering these two questions the research contributes relatively new knowledge in the form of strategies for engaging academics and decision-makers engaging in collaborative public health systems and services research.

A qualitative descriptive approach was used to gain a contextual understanding of experiences of participants in the IKT research program. Twelve semi-structured, one-on-one interviews were conducted with academic and decision-maker researchers working in British Columbia universities and Health Authorities. Qualitative content analysis of transcripts was used to explore and identify concepts emerging from the data.

Data analysis identified IKT processes and concepts that encompass and underlie a collaborative research team. An overarching systems approach is used to examine the evolution of the collaborative team. Themes are presented in relation to IKT engagement concepts identified from the literature as well as those that emerged from analysis including: establishing and maintaining relationships, communication, capacity building, multidirectional knowledge sharing, and multidisciplinary capacity.

By examining experiences of research partners representing both academia and decision and policy-making, this research contributes new knowledge about strategies to support collaborative health services research which can subsequently strengthen the Canadian public health systems and services research agenda.

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Chapter 1: INTRODUCTION

Research Focus: Integrated Knowledge Translation in Public Health

Over the last two decades there have been parallel evolutions within health services research and health services practice and policy that have converged into a realm of collaborative research. This form of research is also driven by the evolution of knowledge translation; academic researchers realizing the importance of the timely movement of research findings into practice and knowledge users acknowledging the need for evidence-based practice. Knowledge translation (KT) has evolved from the recognition that research findings need to be disseminated to knowledge users to the realization that involving these same knowledge users in the research project promotes uptake with greater impact of research findings.

Concerns have been raised about the inability of the current Canadian public health infrastructure, and more broadly the primary health care infrastructure, to adequately meet the growing health needs of the population. Public health crises within Canada over the last two decades have highlighted the need for better coordination of services and an improved mechanism for combining the efforts of researchers and knowledge users. These crises have spawned federal and provincial recommendations for improving primary health care service coordination and infrastructure (Naylor et al., 2003; Romanow, 2002). Subsequent to these crises and reports, policy makers and practitioners are being encouraged to seek and implement cost-effective and efficient strategies for service delivery within primary health care (Hutchison, 2008).

Strategies and recommendations are being made specifically to strengthen public health services coordination and infrastructure, including the need for clearly defined essential functions of public health, strengthened public health system structures, and strengthened supporting elements for effective service delivery. Suggested approaches for strengthening the supporting elements of effective public health service delivery include developing and disseminating a comprehensive review of the scientific evidence base for public health and collaboration within and between health and non-health sectors (Canadian Institutes of Health Research [CIHR], 2003). These strategies arising from the aforementioned crises are the impetus for what is now an era of public health systems renewal. As this renewal moves forward, research documenting the process is evolving.

Public Health Systems and Services Research (PHSSR) is a relatively new field emerging from the larger health services research sector and has been driven by the same events that spawned the public health system renewal itself. This emerging field of research has evolved from Public Health Systems Research (PHSR) which was initially defined as "a field of study that examines the organization, funding, and delivery of public health services within communities, and the impact of these services on public health" (Mays, Halverson, & Scutchfield, 2003). Within this field, practitioners and researchers are exploring various aspects of public health systems and services. A recent report from the United States highlighted the importance of considering a framework for quality in the public health system (Honoré et al., 2011). The authors acknowledged shortcomings affecting the broad public health system and subsequently created a definition of public health quality and a framework for public health. This framework

includes aims and priority areas for quality improvement. It is research such as this that provides impetus for the formulation and creation of a strong Canadian public health system. As Canada moves forward with strengthening its public health system, concurrent research will support evidence-based practice and policy changes.

The gap between health-related research and practice and the lack of evidence-informed practice and policy is a recurring theme in both research utilization and KT literature (Gagnon, 2009; Lomas 2000; Graham & Tetroe, 2007; Lavis et al., 2003). In the field of public health an argument has been made that one likely cause of this gap is a paucity of practice-based research evidence; the production of research findings that are neither relevant nor usable by practitioners and policy makers (Green, 2006; Lavis et al., 2003; McDonald & Viehbeck, 2007; Mitton, Adair, McKenzie, Patten, & Perry, 2007). There has been much written on how knowledge is produced by academic researchers and subsequently taken up by knowledge users in all sectors and levels of health care (Dobbins, DeCorby, & Twiddy, 2004; Grimshaw et al., 2001; Kiefer et al., 2005; Lavis, 2006; Lomas, 2000; Straus, Tetroe, & Graham, 2009b; Walshe & Rundall, 2001). There is little doubt that the uptake of findings produced from research is improved with knowledge user involvement in the research process. One proposed strategy to address the research-practice gap is the development of partnerships between academic researchers and knowledge users at all levels, including patients, frontline practitioners, management, and provincial and federal-level policy makers. Evidence for the potential success of these partnerships exists both within and outside health care (Walter, Davies, & Nutley, 2003). The goal of such partnerships is to promote a two-way exchange

between producers and users of research to meet the specific needs of decision-makers and practitioners while producing relevant and usable research evidence.

Health research in Canada is supported by an infrastructure consisting of a rich and diverse network of individual scientists, academics, and organizations. This research is conducted by individual university-based scientists and researchers working alone, in groups or networks, in research and scientific institutes, and in teaching hospitals (Romanow, 2002). Canadian research funders are emphasizing the importance of translating research results into practice and many now require researchers to develop a dissemination or KT plan as a condition of funding (Canadian Health Services Research Foundation [CHSRF], 2008; CIHR, 2010). Some require the incorporation of practitioners or decision-makers into the funded research team as investigators or users of knowledge, thereby encouraging the formation of partnerships and collaborative research endeavours (Golden-Biddle et al., 2003; Lomas, 2000).

This incorporation of knowledge users, which could also include patients, policy makers, and other research partners, creates diverse, richly comprised multidisciplinary research teams. These collaborative, multidisciplinary teams benefit from the diversity of knowledge, skills, and ability to influence change in practices and policy that the non-academic researchers bring to the partnership. The nursing profession is one area from which collaborative research programs and projects have drawn partners. Public health nurses are “the single largest group within the public health workforce” and it is estimated that there are approximately 12, 000 public health nurses in Canada (Naylor et al., 2003). The plethora of roles fulfilled by the nursing profession are strategically situated to

influence the PHSSR agenda through collaborative research. Nurses can be instrumental in the advancement of such research through their roles in academia, policy and decision-making, management, and frontline public health practice. Collaborative teams often involve nurses as either academic or decision-making partners (Baumbausch et al., 2008; McWilliam, Desai, & Greig, 1997). Their vast experience in communication and education with individuals and groups make them ideal and knowledgeable members of these teams.

With these initiatives for collaborative research in place, questions arise regarding what happens and what should happen when researchers and decision-makers formulate partnerships for collaborative research endeavours. This study took place at the intersection of two systems that have been evolving within the Canadian health care system over the last two decades: knowledge translation and exchange and evidence-informed decision and policy-making in public health. It explores the experiences of academics and decision-makers involved in a collaborative research program situated in public health systems renewal underway in the province of British Columbia. The researcher wanted to discover what happens in collaborative public health systems and services research and identify structures and processes which facilitate partner engagement in these collaborative partnerships.

Purpose of the Study

The purpose of this study was to explore and describe the experiences of academic and decision-maker researchers participating in an integrated knowledge translation and exchange program of research exploring the renewal of public health systems. In particular, the researcher wanted to identify structures and processes that act as enablers or barriers for all partners on a research team as they engage in collaborative research. By examining the experiences of the researcher partners representing both academia and decision and policy-making, this research contributes new knowledge in relation to strategies to support collaborative health services research models which can subsequently strengthen the public health systems and services research agenda.

The next chapter in this study, Chapter 2, provides an overview of the literature relevant to this research. The context for this study is described in Chapter 3, and the research questions, ethical considerations, and methods are outlined in Chapter 4. Chapter 5 presents the study findings and Chapter 6 discusses these findings and offers final conclusions, dissemination highlights, study implications, and considerations for future research and collaborations.

Chapter 2: LITERATURE REVIEW

This comprehensive literature review includes theoretical and empirical literature on the state of PHSSR, integrated knowledge translation, evidence-informed policy making and decision-making in public health, and what is currently known about collaborative research programs and projects. Focus is given to knowledge known and missing from the literature regarding strategies for the implementation of successful collaborative research programs and projects within PHSSR.

Public Health Systems and Services Research

The increase in health services research over the past two decades has come about primarily in response to pragmatic concerns such as how best to deliver various health services or how to deal with the increasing costs of delivering health care. Researchers interested in health services have been asked to examine such issues as efficiency, cost-effectiveness, and utilization in the context of health care reform and change. This field of inquiry is broadly known as Health Services Research (HSR). HSR has primarily focused in medical care delivery and financing with minimal attention paid to corresponding issues in public health (Honoré et al., 2011; Scutchfield, Marks, Perez, & Mays, 2007). This focus has been driven by health care funding, with the majority parceled to individualized medical care versus population-based preventative and public health. Despite this discrepancy in funding, the need to improve the delivery of public health services has been heightened by provincial, national, and global health issues and

crises including the Walkerton water crisis, SARS, terrorism attacks, the obesity epidemic, and flu pandemics. Emerging public health threats and the need for stronger and more effective mechanisms for preventing, detecting, and responding to health threats on a population-wide basis have partially driven the evolution of a new field of inquiry, which has become known as Public Health Systems Research (PHSR) (Mays et al., 2003). This is coupled with another key driver: a lack of substantial research evidence and efforts focused on the delivery of public health services (Scutchfield et al., 2007). PHSR is seen as the crossroads between public health research and HSR. This field of inquiry focuses on answering research questions regarding the organization, financing, delivery, and impact of public health services.

In 2007, Scutchfield and colleagues proposed a change in nomenclature for this emerging field from PHSR to PHSSR: Public Health Systems and Services Research. The definition of PHSSR is similar to that of PHSR and continues to focus on the organization, administration, and financing of public health services but now encompasses fields of disease-based research for populations and the notion of quality improvement in public health service delivery (Scutchfield et al., 2007). It is felt that name better highlights the proximity of PHSSR to HSR and also that the field can "reveal organizational structures, financing systems, workforce characteristics, and delivery mechanisms necessary to implement interventions effectively in various practice settings" (Scutchfield et al., 2007, p. 170).

The PHSSR agenda is currently more developed in the United States than in Canada, where important areas for research have been identified to provide evidence of

impact on health outcomes: describing the dimension of public health systems, addressing the relationship between system performance and the determinants of health, public policy, and governance, and exploring concepts of performance measurement (Lenaway et al., 2006). For the purpose of this thesis, the acronym PHSSR will be used given the study's context and the current state of the field of research in Canada.

In Canada, the PHSSR movement is in its infancy. In the aftermath of SARS, concerns were raised about the adequacy of the current public infrastructure to meet the health needs of the population; key reports identified systemic deficiencies and subsequently recommended strengthening the public health system (CIHR, 2003; Naylor et al., 2003). The recent introduction by CIHR of the Partnership for Health Services Improvement (PHSI) funding competition, which includes PHSR as an accepted focus, demonstrates a commitment to moving this research agenda forward. The purpose of the PHSI grants are to support teams of researchers and decision-makers interested in conducting applied and policy-relevant health research that is useful to health system managers and policy makers (CIHR, 2008a). It is now widely recognized that evidence and/or knowledge should be used to inform decisions related to health care policy and practice. While the actual name used to describe this process has changed over the years, and varies from one country to the next, they all include the notion of putting knowledge or evidence into action (Straus, Tetroe, & Graham, 2009a). Research evidence is an important component of the complex decision-making process both in health care and public health policy and practice. PSHI grants require, as do many other CIHR funding

opportunities, collaboration between researchers and decision-makers to support the translation of research findings into usable knowledge (CIHR, 2008a).

With the largest funder of health research in Canada detailing funding requirements which include partnerships between researchers and knowledge users, an exploration of the structures and processes that would support such collaborative endeavours is warranted. The current study is situated within what is believed to be one of the first attempts to develop a comprehensive PHSSR agenda in Canada (M. MacDonald, personal communication, June 16, 2010). This attempt seeks to contribute to strengthening the Canadian public health system and address the relationship between system performance and public policy, while employing a collaborative research methodology including key academic researchers and decision-makers. The current study will use this opportunity to explore the experiences of the academic researchers and decision-makers in order to offer strategies to further develop the PHSSR agenda.

Knowledge Use and Movement

In the 1990s, prior to the public health services renewal movement, was the realization of a need to better inform practice with research findings; a movement that began within medicine, and spread to management and policy (Lomas, 2000). The concept of moving knowledge to action, or evidence to practice, has been referred to by a variety of terms leading to much confusion and minimal theory and empirical guidance regarding processes and outcomes (Graham et al., 2006; McKibbon et al., 2010). Initial forays into addressing the knowledge to practice gap were defined with terminology such

as *dissemination* and *diffusion* (Rogers, 2003). These terms were solely focused on the transmission of knowledge products to key stakeholders in an attempt to increase awareness (Graham et al., 2006). In fact, diffusion is seen as merely the passive process by which an innovation or knowledge is communicated while dissemination possesses an active component. Dissemination includes the identification of a target audience and tailoring of the message and medium to this target audience (CIHR, 2010). Dissemination is still viewed as a valuable and viable means for the one-way transmission of messages and much attention had been given to appropriate strategies for this one-way transmission in public health policy and practice (Kiefer et al., 2005; Lavis et al., 2003; Mitton et al., 2007)

In June 2000, when the Government of Canada created the Canadian Institutes of Health Research (CIHR), it issued a mandate that included both health research *and* knowledge translation. The *Canadian Institutes of Health Research Act* (2000) states that the objective of CIHR is to excel "in the creation of new knowledge and its translation into improved health for Canadians, more effective health services and products and a strengthened Canadian health care system" (Objective section, para. 1). KT is a prominent and innovative feature of the CIHR mandate thereby having the potential to significantly influence the movement of research evidence and benefits to Canadians. Within the first four years of its inception, the 13 CIHR Institutes launched innovative research programs solidifying a commitment to KT and the building of capacity for KT in health research (CIHR, 2004).

CIHR uses the term knowledge translation and defines it as "...a dynamic and iterative process that includes 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 health care system" (CIHR, 2010, para. 1). This term and definition will be used throughout this study. In addition, the CHSRF definition of knowledge exchange (KE) is, "collaborative problem-solving between researchers and decision makers that happens through linkage and exchange…[involving] interaction between knowledge users and researchers and results in mutual learning through the process of planning, producing, disseminating, and applying existing or new research in decision-making" (n.d., para. 1). Exchange has been adopted in addition to translation to address concerns about the earlier term *knowledge transfer*, which had been interpreted as the first step in knowledge dissemination and did not extend to the use of knowledge production (Graham et al., 2006).

Implicit within knowledge translation and exchange (KTE) are the premises that knowledge users can help researchers identify current research priorities and can then have relevant, up-to-date research evidence to inform policy and practice. By being directly involved with the knowledge users, researchers can gain valuable insight into the real world experiences and context in which practice decisions and policies are created. Also key to KTE is the incorporation of knowledge synthesis and uptake or implementation of knowledge, which moved implementation science beyond its initial

footings in dissemination and diffusion. As noted by Mitchell, Pirkis, Hall, and Haas,

> "If we understand knowledge creation and knowledge flow as integrally embedded in practice then ongoing partnerships between researchers and decision-makers may facilitate knowledge exchange by enabling researchers and practitioners to develop a shared epistemic culture, and become members of the same community or network of practice" (2009, p. 106).

CIHR has defined two broad types of KT, each acceptable as a means of moving research results into use: end of grant KT and integrated knowledge translation (IKT) (CIHR, 2010). The former includes dissemination and communication activities undertaken by most researchers, such a conference presentations and publications in peer-reviewed journals. End of grant KT can involve more intensive KT strategies, such as tailoring messages and the medium for transfer to audiences. Examples include stakeholder summary briefings, interactive educational settings, and the use of knowledge brokers (CIHR, 2010). This model of KT is believed to work well with basic or fundamental research focused primarily on advancing science and driven by the curiosity of researchers, because the audiences most interested in these findings are the researchers' peers (CIHR, 2008b). IKT is a more complex and collaborative process, involving stakeholders or potential knowledge users in the entire research process. Researchers and knowledge users can work together to shape the research process through collaboratively determining the research questions, deciding on methodology, collecting and analysing data, interpreting findings, and disseminating results. The engagement of these partners should produce research findings that are more likely to be relevant to and utilized by the end users (CIHR, 2010).

Numerous strategies have been proposed and utilized to facilitate the movement of research evidence into public health policy and practice, such as knowledge brokers, targeted messaging, face-to-face exchanges, and interactive workshops (Lavis et al., 2003; Mitton et al., 2007). It is not within the scope of this study to provide a detailed explanation and critique of strategies for the translation of research findings into public health policy, but it is important to mention that this sect of implementation science, the study of KT, is also evolving. Lavis and colleagues (2003) provide a framework for transferring research knowledge to decision-makers, while Mitton and colleagues (2007) support an evaluation of such frameworks and current strategies to better substantiate an evidence-based approach to KTE itself. One strategy that has been offered is a collaborative research approach, in order to build capacity within public health service organizations for knowledge utilization and support research that is practice-based (Lomas, 2000). The proposed study will provide a qualitative exploration of academics' and decision-makers' experiences within an IKT program, thereby offering one perspective of this type of strategy.

Movement to Evidence-Informed Decision-Making in Public Health

Health care has seen the adoption of evidence-based medicine and the growth of quality assurance and health services research focused on how best to care for the individual (Scutchfield & Lamberth, 2010). Following the evidence-based medicine movement of the 1990's was the evolution of evidence-informed health care management, and policy and decision-making within public health, thereby facilitating

the movement of research findings to support how to best care for populations (Kiefer et al., 2005; Walshe and Rundall, 2001). Evidence-based decision-making is defined as "the conscientious, explicit astute use of the best-available evidence from relevant research fields to inform practice and policy decision regarding health care, health systems, and population and public health programs" (Kiefer et al., 2005).

The field of PHSSR seeks to evaluate how policy, decision-making, and public health service planning and operationalization are being informed by research evidence and what strategies are best able to support these processes, and ultimately strengthen the health of populations through provision of evidence-based public health services. The review by Kiefer and colleagues (2005) was to inform CIHR's Knowledge Translation branch as well as the director of a key Institute driving PHSSR within CIHR: the Institute of Population and Public Health. It was undertaken in response to previously identified gaps in "the existence of, access to, and uptake of easily usable, high-quality, practice-relevant [population and public health] research evidence" (Kiefer et al., 2005, p. I-1). This report answered the call from federal reports (Naylor et al., 2003; Romanow, 2002) demanding a strengthened public health system, including networks for research and public health practice, linkages among researchers, policy makers and government decision-makers for knowledge exchange and evidence-based decision-making, and the creation of a knowledge translation and exchange infrastructure. An overview of gaps in population and public health knowledge generation, synthesis, exchange, and uptake was coupled with an assessment of the current nature of knowledge synthesis and use in population and public health. This was followed by recommendations, including the

development of linkages between knowledge users and researchers, and the involvement of policy-makers in knowledge generation and exchange (Kiefer et al., 2005). These two recommendations offer support for undertaking collaborative research endeavours in PHSSR. In order for linkages to be formulated and policy-makers to be engaged in collaborative research, an exploration of the structures and processes of such endeavours is warranted.

Integrated Knowledge Translation

The term *integrated knowledge translation* (IKT) is synonymous with numerous other terms, including collaborative research, action research, participatory research, community-based participatory research, and co-production of knowledge (Gagnon, 2009). Regardless of the terminology used, each of the above methods shares one primary tenet: the active collaboration and exchange between researchers and knowledge users throughout the research process. This involvement could include identifying and shaping the research questions, data collection, interpretation of findings, and dissemination and application of results (Denis & Lomas, 2003; Graham & Tetroe, 2007). The knowledge users engaged in the research process are dependent on the intent of the research project and could include other researchers, clinicians, policy makers, or the public (Gagnon, 2009).

The integration of knowledge users into the research process requires the development of new skills, knowledge, and perspectives by both the academic researchers and knowledge users and can thus be a more time consuming and resource intensive

endeavour (Gagnon, 2009). In spite of the potential for increased time and resource demands, involving knowledge users as research partners is a strong predictor of the use and impact of research findings stemming from health services research (Denis & Lomas, 2003; Kothari, Birch, & Charles, 2005; Lomas, 2000; Ross, Lavis, Rodriguez, Woodside, & Denis, 2003). As a result, Canadian health research funding agencies have realized the importance of collaborative research projects in health services research and have subsequently implemented initiatives that aim to support and promote IKT (CHSRF, 2008; CIHR, 2008a).

Denis and Lomas (2003) define collaborative research as "a deliberative set of interactions and processes designed specifically to bring together those who study society problems and issues (researchers) with those who act on or within those societal problems and issues (decision-makers, practitioners, citizens)" (p. S2:1). A key facet of this definition of collaboration is the formation of partnership for purposes beyond funding or access to research sites. This parallels Lomas' (2000) widely-used term 'ongoing linkage and exchange', which has its roots in the CHSRF. 'Ongoing linkage and exchange' is used to describe the involvement of partners it the research process, thereby lending to ownership of results and subsequent use of results. CHSRF was formed in 1997 with the purpose of facilitating evidence-based decision-making in Canada's health sector; it brought together a medical research council focussed on obtaining research funding for health services delivery and a federal government interested in improving health services with research knowledge (Lomas, 2000).

There are bodies of literature that explore types of partnerships as well as definitions of partnerships. Partnership is a broad term and a recent literature review explored types and definitions of partnerships, finding several different types of partnership relationships as well as definitions (Sibbald, 2010). Types of partnerships currently found in collaborative research include university-community collaborations, inter-professional (also known as communities of practice), industry-research, inter-organizational (private partnerships or strategic alliances), global or transnational, academic-practitioner, and networks in healthcare (Sibbald, 2010). The current study is focused on academic-practitioner partnerships, which are also known as university-practitioner or research-practice partnerships. In these types of partnership the term practitioner can be substituted with policy maker, decision-maker or end-user (Sibbald, 2010).

Definitions, principles, and models of partnership have also been explored and this term has been used interchangeably with and as a component of collaboration, collaborative research, and cooperative behaviour (Denis & Lomas, 2003; LeGris et al., 2000; McCormack, Buck, & McGraw, 2010; Public Health Agency of Canada [PHAC], 2007). Partnership has also been identified as a component of collaboration in interprofessional research endeavours (D'Amour, Ferrada-Videla, San Martin Rodriguez, & Beaulieu, 2005; San Martin-Rodriguez, Beaulieu, D'Amour, & Ferrada-Videla, 2005). Sibbald (2010) concluded in this section of the literature review that key dimensions in defining the term partnership appear to be the involvement of multidisciplinary individuals and that they are working toward a shared goal. The researcher of this study

believes that Denis and Lomas (2003) definition of collaboration previously described is most applicable and relevant for the purpose of this research and the term collaboration is sufficiently interchangeable with partnership. Of note, the PHAC (2007) definitions of partnership and collaboration are equally valued and applicable given the context of this study.

Collaborative Public Health Research

Evidence and descriptive reports exist regarding the collaborative research process (Baumbusch et al., 2008; Best & Holmes, 2010; Bowen & Martens, 2005; Denis & Lomas, 2003; Gagnon, 2009; Lapaige, 2010; Lomas, 2000; McWilliam et al., 1997; Mitchell et al., 2009; Ross, Lavis, Rodriguez, Woodside, & Denis, 2003; Walter et al., 2003), including barriers, facilitators, and conditions for success (Baumbusch, et al., 2008; Denis, Lehoux, Hivon & Champagne, 2003; Gagnon, 2009; Golden-Biddle et al., 2003; Ross et al., 2003). These interactive models of KT are supported by the understanding that the synthesis and translation of knowledge is meaningful to users and therefore research activities need to focus equally on process and product, with an emphasis on critical elements of reciprocity and exchange (Lomas, 2000). Gagnon (2009) summarizes key success factors that can be applied to any type of collaborative research endeavour to generate, exchange, and apply knowledge to address either health or health system issues:

- a process to develop a shared perspective, common language, and common understanding about the health problem/issue that the team will focus on;

- a plan for collaboration with explicit description of roles and responsibilities and a commitment to regularly address its effectiveness;
- a plan for the inclusion of team members who are collaborative; and
- a strategy for ensuring that trusting relationships among team members are maintained and conflicts are resolved appropriately when they arise (p. 240).

These success factors are seemingly straightforward, yet research has shown that it is not enough to merely list success factors; practical, explicit strategies are needed for both academic researchers and decision-makers engaged in a collaborative research project (Bowen & Martens, 2005; Denis et al., 2003). It is well known that these two types of partners have competing agendas and research needs to look beyond an acknowledgement of barriers and facilitators to context and partner-specific strategies (Golden-Biddle et al., 2003; Ross et al., 2003; McWilliam et al., 1997).

Benefits and challenges exist within collaborative research projects. The value and benefit in a collaborative approach is that it attempts to break down barriers that have traditionally inhibited research use. These barriers typically stem from differences between researchers and knowledge users in culture, reward systems, time scales, and goals (Walter et al., 2003). CIHR commissioned members of the Participatory Research Centre at McGill to create a user manual to offer guidance for academic researchers desiring to engage in IKT (Parry, Salsberg, & Macaulay, n.d.). These authors outlined barriers they had either experienced or obtained from literature, including job mandates of knowledge users, scheduling, compensation, language or culture of the organization, power differentials, knowledge of research methodology, and geography. Despite these

barriers identified for academic researchers, they can be shared with decision-makers in the early phases of a collaborative project as a means of opening the lines of communication and acknowledging the potential challenges that may arise during the partnership.

Benefits to a collaborative approach include enhanced credibility and ownership of research, thereby facilitating uptake of findings. Collaboration has also been found to encourage direct (change to policy or practice) and conceptual (change in awareness or attitude) use of findings (Walter et al., 2003). These findings support Lomas' (2000) arguments for collaboration in health services research, which are the foundation for CHSRF's adoption of IKT.

Ross et al. (2003) interviewed both academic researchers and decision-makers directly and identified benefits for the research process, the academic researchers, and the decision-makers. Examples of benefits to the research process include attainment of research results grounded in reality, provision of access to data sources and decision-maker expertise, and decision-makers understanding the usefulness of the research for practice. Benefits to the participating academic researchers were identified as a greater understanding and appreciation of decision-makers' worlds, linkages with other decision-makers, and derision of personal satisfaction from professional validation of contributions beyond those typically received in academia. The decision-makers felt that they gained a broader perspective of their work and had the opportunity to be reflective, enhanced their research skills, were informed about current research and had access to research expertise, and gained a deeper understanding of the academic researcher perspective. These

benefits have been echoed by other authors exploring policy-mandated collaboration and a partnership with community-based professional practitioners (Denis et al., 2003; McWilliam et al., 1997).

Acknowledging that there are benefits and challenges to IKT is the first step in formulating a strategic plan for engagement of research partners. This plan should be informed by structures and processes known to facilitate IKT. The current study explored these structures and processes as well as strategies for partner engagement.

Integrated knowledge translation processes.

IKT refers to both a process and its result. In public health, IKT is a dynamic, interactive, and non-linear phenomenon reaching beyond what are often the linear processes of KT (Lapaige, 2010). Further to this, Lapaige proposes that the IKT process is based upon the collaboration of individual and institutional partners and the integration of their respective knowledge bases, and the development of a sustained synergy among knowledge producers and users. In addition, IKT is best supported by "the emancipation of post-positivist biomedical paradigms, removal of interdisciplinary barriers, and the development of sectors favouring a collective approach to share problems and questions regarding health" (2010, p. 34). A parallel can be drawn between what Lapaige proposes and other authors' (Best & Holmes, 2010) views that integrated models and methods for the movement of knowledge into action are best viewed from a systems perspective. The processes involved in IKT move beyond linear models and are likely more complex than relationship models (Best & Holmes, 2010).

IKT is embedded in its socio-environmental context and shaped by the complex actions and intervention of multiple partners, each influenced by their own worldviews, priorities, languages, means of communication, and expectations (Best & Holmes, 2010; Lapaige, 2010). Overarching the individual partners is a system, which is shaped by cultures, structures, priorities, and capacities. Best and Holmes (2010) state that the overarching system must be activated in order to link together these various components. They propose that if a systems model is used to conceptualize knowledge to action, then it is best viewed as a complex adaptive system, which possesses the following characteristics: dynamic and constantly changing, systems exist within other systems, and changes in one part of the system can have unexpected changes in other parts of the system. In support of Graham et al.'s (2006) circular model and Lomas' (2002) linkage and exchange components, understanding the roles and actions of key stakeholders, how they are shaped by and shape the dynamic knowledge to action system, and their relationships is vital for this systems view. Best and Holmes (2010) also offer one critical element of a systems model: a feedback loop, whereby those working together are able to actively engage in a process of continual evaluation and reflection on the conceptual structures and processes inherent in the IKT system.

Integrated knowledge translation concepts.

Literature addressing collaborative research projects has mainly focussed on descriptive accounts sharing 'lessons learned' and perceived benefits and challenges faced by partners involved in the endeavour. These reports are often authored by the academic researchers involved in the project and are pursued so as to share the

experiences of those involved in their project. What can be gleaned from this literature are concepts outlining structures and processes that are embedded within collaborative research projects; these concepts offer guidance for further research seeking to identify and offer strategies to those seeking direction as they engage in research partnerships.

Establishing and maintaining the relationship.

One concept evident in literature exploring and describing collaborative research endeavours is the establishment of a trusting, open, and respectful relationship between research partners (Bowen & Martens, 2005; Golden-Biddle et al., 2003). This partnership should include stakeholders with a vested interest in the practice and policy issues, a mix of knowledge and expertise in both content and research methodology, and an identifiable common goal (McWilliam et al., 1997; Ross et al., 2003). Beyond professional factors, the selection of partners should also include attention to personal factors, including the ability to work in a collaborative manner with peers (Bowen & Martens, 2005). Even in policy-mandated partnerships, the development of relationships in which partners had shared views of both the process and outcomes of the research was identified as an important facet for both the academic researchers and practitioners (Denis et al., 2003). The establishment of a relationship between research partners is not a passive or facile process. It requires the mobilization of resources by all involved, including time, effort, and motivation for sustained, long-term engagement (McWilliam et al., 1997; Ross et al., 2003). This mobilization is ideally coupled with open, up-front identification of roles and responsibilities of all partners. Following this, is the acknowledgement of accountability, reciprocity, and respect for each partners' knowledge base and experience (Baumbusch et

al., 2008). Shared accountability and reciprocity are not possible without a respect for the different types of knowledge that the researchers and decision-makers bring to the partnership.

It is important to acknowledge the time required for the establishment of relationships in collaborative research projects. Numerous authors have highlighted the importance of taking time and providing resources for establishing trusting, effective, and efficient collaborative teams (Baumbusch et al., 2008; McWilliam et al., 1997; Ross et al., 2003). Interview respondents in Ross et al.'s (2003) exploration of partnership experiences identified three recommendations for facilitating decision-maker involvement that centre on time: be strategic about establishing partnerships, be intentional about supporting partnerships, and be committed to building partnerships. Respondents desired more time for communication, dissemination, training, and linkages with decision-makers. The time investment in the establishment of relationships with partners was highly valued for the research process, knowledge creation, and subsequent uptake and utilization (Ross et al., 2003). In a six-year collaborative study involving frontline community-health practitioners, the academic researchers found that the collaborative effort consumed more of their time and effort and required flexible work habits not typical of their standard research projects (McWilliam et al., 1997). This increased time was spent achieving an increased awareness of the practicalities of research implementation for the practitioners as well as making the partnership effective through team building activities.

Certain roles have been identified for researchers and decision-makers that are known to facilitate the integration of a collaborative research project into the organizational structures of both partners: credible messengers and research champions (Baumbusch et al., 2008; Lavis et al., 2003). Researchers have been known to adopt the role of credible messengers, communicating the value and relevance of research to those in clinical practice. Decision-makers or practitioners have also taken on proactive roles such as that of a research champion, demonstrating commitment to the project and advocating for research in their practice area. These roles establish linkages between the realms of the two partners and offer the opportunity to engage each partner in the other's world. McWilliam et al. (1997) found that engagement was also heightened and the partnership strengthened when there was balanced participation and partners felt equal ownership over processes and outcomes. Achievement of research relationships that attain the aforementioned benchmarks has been shown to occur in collaborative endeavours that include either pre-existing (Bowen & Martens, 2005) or newly formed relationships (Ross et al., 2003). Beyond knowledge of the need to establish relationships for supporting collaborative research, this researcher would like to determine specific processes that engage both academic and decision-maker researchers as they formulate their partnership.

Communication.

The formulation of open, trusting, respectful relationships requires a sound communication strategy and the acknowledgement of collaborative norms. This strategy can involve a number of structures and processes, including an open forum for exchange

and the development of a shared language and culture (Bowen & Martens, 2005). Formulating a shared language regarding research and practice and policy knowledge can ensure the all partners are able to participate in ongoing discussions regarding methodology and application to practice (Bowen & Martens, 2005). This shared language can in turn aid in the creation of a shared culture of respect between partners. Golden-Biddle and colleagues (2003) offer that through open communication partners can acknowledge and gain an awareness of each others' worlds. This includes who they are as individuals and professionals, and an appreciation and sharing of challenges, joys, and frustrations they face; a respect for the humanistic characteristics that permeate their respective lifeworks.

Practical and tangible strategies are needed for communication amongst partners that might be spread across cities, provinces, and even the country. In an ideal situation, partners would engage in regular, face-to-face, formal and informal meetings as a forum for fostering open and productive dialogue, exchange of ideas, and to later support real-time KT (Baumbusch et al., 2008; Bowen & Martens, 2005). In multi-site collaborative endeavours, this is simply not feasible. These situations then require creativity in communication, such as the establishment of regular teleconferences and web-based discussions. Budgets could include monies allocated to face-to-face meetings at key points in the research process, when decisions regarding research questions and methodology are being made. Web-based forums created for communication can also provide a venue for knowledge sharing amongst partners (Golden-Biddle et al., 2003). Literature seeking insight into the experiences of partners involved in collaborations

found they shared similar values regarding participation in various aspects of the research project, yet were unable to necessarily act on these values with actions due to organizational or structural challenges (Denis et al., 2003). Communication early in the collaboration regarding expectation of roles and participation may allow partners to overcome challenges and participate in research activities they deem to be valuable. In addition, if forums are web-based and available to everyone at any time of the day, it will allow for access when partners have time.

Effective communication with open discussion amongst partners with different backgrounds could lead to new ideas that may not have evolved had there not been a forum for exchange. McWilliam et al. (1997) propose that the natural human tendencies to avoid confrontation and to compromise need to be overcome and that partners should expect differences in opinion, confront conflicts, and attain resolution through dialogue. This requires time and patience and active participation of partners (Mitchell et al., 2009; Ross et al., 2003). In addition to patient, open dialogue, skills such as problem-solving and negotiation are valued by both academic researchers and practitioners and are therefore traits that should be sought out by research leads as they select partners for collaboration (Denis et al., 2003).

In their systems view of mobilizing knowledge to action, Best and Holmes (2010) propose that strategic communications are an ongoing process and possess the goal of mutual understanding between partners. This process encompasses individual and organizational credibility, reputation, politics, and power. Although no strategies for establishing strategic communication processes are offered by these authors, this

researcher proposes that the open dialogue, patience, respect, and problem-solving and negotiation skills deemed important by other authors (Denis et al., 2003; McWilliam et al., 1997; Mitchell et al., 2009; Ross et al., 2003) may facilitate the achievement of strategic communication.

The ongoing relationship building, which is important for engaging all research partners, will be facilitated by the creation of a communication strategy and norms for participation in dialogue. Communication is a key component of any relationship or partnership and provides the foundation for knowledge sharing and capacity building, additional concepts prevalent in collaborative research endeavours.

Multidirectional knowledge sharing.

IKT is dependent on the multidirectional, ongoing sharing of knowledge between research partners. This sharing of knowledge should begin at the inception of the partnership and evolve as the collaboration evolves. The exchange of knowledge is a means by which researcher and decision-makers can share expertise and knowledge for achieving the common goals of the research (Bowen & Martens, 2005). This can foster shared meanings of concepts and allow for clarification of terms that may be used throughout the project. In essence, it is a mutual teaching and learning process (McWilliam et al., 1997).

It is important that this sharing of knowledge occurs even before results are actualized from data collection and analysis. The exchange can occur virtually, through email or web-based conference, or in person. Ross et al. (2003) found that decision-maker engagement was fostered through active knowledge sharing practices of both the

academic researchers and the decision-making partners. The academic researchers prepared written updates or briefs, scheduled regular team meetings or ad hoc consultations, and engaged in informal email and telephone exchanges. When feasible, the decision-makers organized interactive forums that increased engagement within their organizations. In addition, researchers made site visits or participated in decision-maker activities as a means of engagement or learning about the organizations in which the decision-makers were employed (Ross et al., 2003). Although these activities, both academic and decision-maker driven, required concerted time, effort, and budget allowances, they fostered the sense of engagement sought by those in the collaboration. They offered interactive means for exchange of contextualized knowledge and fostered a better understanding of each other's worlds.

Knowledge-sharing practices are a means of acquiring baseline information about organizations involved in collaborative research and enhancing the use of research findings (Golden-Biddle et al., 2003). Prior to data collection and analysis, decision-makers have suggested that researchers could provide them with articles relevant to their efforts in implementing change related to the current body of research; in essence to select the best evidence to inform their practice (Golden-Biddle et al., 2003). Beyond evidence, educational resources are also valued by decision-makers, as academic researchers are perceived to possess experience both with such resources and in a classroom setting.

The establishment of multidirectional knowledge sharing early on in the collaborative research process facilitates the exchange of real-time results once data

collection and analysis begins. This ability to share real-time results provides relevant, usable, knowledge that can be used to aid decision-makers dealing with time-bound situations and time-frames driven by the political nature of their work (Baumbusch et al., 2008; Golden-Biddle et al., 2003). In addition, this real-time sharing can lead to progress in the research through establishing validity of the coding scheme and methodology (Golden-Biddle et al., 2003). This simultaneous data collection, analysis, interpretation and communication could be challenging, but with flexibility and open lines of communication both partners will benefit from the process (Baumbusch et al., 2008; Denis et al., 2003). Multidirectional knowledge sharing practices throughout the entire research process will facilitate the ongoing research and have the potential to build capacity in academic researchers for producing practice-based results and in decision-makers for making evidence-based decisions.

Capacity building.

Engaging in collaborative research endeavours poses an opportunity for capacity building for both academic and decision-making partners. Bowen and Martens (2005) found in their evaluation of collaboration with decision-makers in provincial and regional health authorities in Manitoba that all partners experienced three kinds of learning: factual, how to locate and access needed information, and a change in how they viewed research and their relationship to research. The third type of learning is conceptually based and goes beyond factual learning, as it involves a transformation of how one perceives oneself within the context of the research (Bowen & Martens, 2005). Conceptual learning typically includes a change in attitude and may result in a greater

openness to new ideas. This conceptual use may be slightly less rewarding to academic researchers; however it may offer the most long-term benefit for IKT (Bowen & Martens, 2005).

It is important to highlight that the capacity building that occurs in IKT projects is not limited to the decision-makers and their increased capacity for applying research results to practice. Decision-making partners possess real-world, practical expertise and knowledge regarding policy making and practice. This knowledge is vital for academic researchers striving to move findings into the decision or policy-making process; insight into the reality of policy-making can only be provided by those engaging in the process on a daily basis (Bowen & Martens, 2005). In this way, decision-makers and academic researchers have overlapping purposes for engaging in a collaborative endeavour: decision-makers are interested in using knowledge to implement change and academic researchers are interested in gaining a contextualized perspective to inform their research (Golden-Biddle et al., 2003). Researchers need to be aware of the political landscape shrouding decisions made by their partners.

Also important in IKT is the experiential learning about the process of doing research. Regular meetings can be used for academic partners to use their teaching skills and knowledge to provide insight into methodology and the research process and for decision-makers to inform practical approaches to KT (McWilliam et al., 1997).

Engaging in collaborative research may involve the exploration of new approaches to roles and responsibilities of both partners, as well as the development of additional skills. Academic researchers may need to shift previous approaches to analysis

and interpretation, and increase flexibility with budgets and timelines to allow for incorporation of decision-maker input (Baumbusch et al., 2008; Ross et al., 2003). For decision-makers in clinical or policy-making settings, there may be a similar shift from their traditional day-to-day activities to accommodate initiatives that lead to transformations in decisions and policies to facilitate incorporating research results received in real-time (Baumbusch et al., 2008).

Partnerships formulated through a collaborative research endeavour may be for discrete periods of time, for programs of research, or for ongoing reciprocity (Mitchell et al., 2009). All three types offer the opportunity to build capacity of those involved. Those engaging in health services research offer the argument that long-term sustained programs or ongoing reciprocity would allow for decision-maker involvement in a wide range of research activities and facilitate research results that are more likely to be immediately usable (Lavis et al., 2003; Lomas, 2000; Ross et al., 2003). These long-term ventures require strategic individual and organizational efforts yet will yield fruitful collaborative endeavours building skills and capacity in those involved. Although longer programs of research have greater opportunity for capacity building, it is important to balance the needs of those involved; decision-makers may require shorter-term results to inform practice while academic researchers may be able to await the results of the larger, long-term efforts (Ross et al., 2003).

In addition to the individual capacity building that will occur in a collaborative endeavour, there is also a need for and opportunity to promote organizational capacity building. It is important for both academic and decision-making research partners to be

based in organizations that support and value research-based knowledge as an ethical basis for decision-making (Baumbusch et al., 2008). If this capacity does not currently exist, the roles of credible messenger and research champion may help to influence organizational change to adopt this value and support the IKT process (Baumbusch et al., 2008; Lavis et al., 2003). The involvement of decision-makers in research requires additional resources and creativity to incorporate research activities into required day-to-day activities; these additional resources and creativity and flexibility will only be possible with the support of the organization in which the decision-maker is based (Baumbusch et al., 2008; Bowen & Martens, 2005). Academic researchers will need to allocate additional time for collaborative projects, for activities such as relationship building and maintenance, strategic communication, and shared decision-making; this additional time has the potential to increase the time needed to publish papers and produce research results, measures by which academia are typically evaluated. Academic institutions will need to be understanding of this additional time and facilitate and provide resources for nurturing the collaborative endeavours.

The current study used the above processes and concepts as a framework for guiding the exploration of academic and decision-makers' experiences in a collaborative research program. The structures and processes that facilitated the engagement of partners in the collaboration were sought. The concepts of establishing a relationship, communication, multidirectional knowledge sharing, and individual and organizational capacity building are known to influence collaborative research endeavours and the researcher used these known concepts to glean strategies for partner engagement.

Chapter 3 outlines the context for the current study, including overviews of the research project in which the current study is situated and the broader program of research in which that research project is taking place.

Chapter 3: CORE PUBLIC HEALTH FUNCTIONS RESEARCH INITIATIVE and the RENEWAL OF PUBLIC HEALTH SYSTEMS PROJECT

The current study explored experiences of those participating in a research project that is part of a large program of research examining public health policy in British Columbia (BC) and Ontario (ON). To better situate the reader, the following provides an overview of the broad program as well as the research project.

Provinces are taking varied approaches to addressing federal and provincial recommendations, including creating and implementing new policies for public health service delivery. The Core Public Health Functions Research Initiative (CPHFRI) in BC was formed to study the implementation of the Core Public Health Functions Framework (Core Functions). This framework emerged in an era of Canadian public health renewal to guide public health practice in BC (BC Ministry of Health Services, Population Health and Wellness, 2005). The main components of the framework are core public health programs, core public health strategies to be used to implement the programs, lenses through which population health needs should be assessed and addressed, and the core public health capacity needed to apply the strategies and implement the programs (BC Ministry of Health Services, Population Health and Wellness, 2005). The two principal investigators leading CPHFRI believe that the process of implementation of this framework can be seen as an integrated and evolving KTE process (CPHFRI, 2009a, para. 7). In April 2007, the CPHFRI team held a Think Tank to identify research priorities related to the impact and outcomes of the implementation of the Core Functions.

This event brought the BC team together with national and international public health experts; the outcomes were a research agenda and specific research priorities, and a conceptual framework to guide proposal development (CPHFRI, 2009a, para. 9).

The Renewal of Public Health Systems program of research (RePHS) is one of many programs of research within CPHFRI committed to an approach that permits ongoing exchange among its multidisciplinary team members. The purpose of CPHFRI and subsequently of RePHS is to engage in a collaborative, participatory research process between academics and decision-makers. The RePHS research team consists of academic researchers as well as key decision-makers, policy makers and practitioners from the public health sector. These partners are based regionally, provincially, and nationally, and across multiple disciplines. The RePHS team includes nurses practicing at various levels within public health, including frontline, management, research, policy, and government. It also includes health promoters, health economists, physicians, dieticians, business administrators, epidemiologists, and policy consultants. Many members of the RePHS team are also involved in other collaborative programs and projects under the CPHFRI umbrella. Two research coordinators, several research assistants, and two administrative assistants provide support for the RePHS team.

The RePHS team spans two provinces in Canada: BC and ON. These two provinces contain parallel multidisciplinary collaborative research teams, brought together for the purpose of conducting comparative studies on the implementation and impact of the Core Functions Framework and the Ontario Public Health Standards (CPHFRI, 2009b, para 1). Academic and decision-making partners within RePHS are

both viewed as knowledge consumers and knowledge users. The team employs a broad definition of knowledge, including scientific, experiential, and tacit knowledge (CPHFRI, 2009a, para. 12). When viewed as an experiential endeavour in IKT, the overarching goal of the program is a collaborative exchange between researchers and decision-makers throughout the entire research cycle. Vital to this IKT model is involvement of all partners in setting the research agenda and defining research questions, data collection, analysis, interpretation, dissemination and integration into policy and practice. The principle of partnership is a guiding philosophical value for RePHS (CPHFRI, 2009a, para. 10). It is believed by team members that for the synthesis of knowledge relevant for public health services renewal, it must be created in partnership to be integrated into practice at every system level.

What is not clearly defined within the program is the terminology for describing partners. The initial grant application for RePHS included all the academic researchers currently involved, but did not list all the decision-making partners as this list was and still is evolving. To date, one amendment has been made to the initial application and this was to add decision-makers who had joined the program since the initial application. Therefore not all of the current decision-making partners are formally listed as 'co-investigators' with CIHR. Despite this, the team views all members as co-investigators within the project and gives equal weight to everyone's contributions. The primary researcher of the current study finds that this parallels the evolving nature of IKT programs and projects and the challenge of developing shared language and culture amongst program partners.

There is a core team of both researchers and decision-makers and to date a range of additional stakeholders from the policy and practice community who have been involved at different stages in the process. Guiding principles were created by the broader CPHFRI program and are assumed by those participating in RePHS (Appendix A). These principles support the overarching philosophy of partnership and include a commitment to an inclusive process, acknowledgement of contributions of all partners, the achievement of consensus, goal attainment of individuals and the broader team, synthesis of relevant knowledge, and capacity building (CPHFRI, 2009a, para. 14). In addition, the program is striving to be a model for the effective linkage of policy, practice, and research (CPHFRI, 2009a, para. 14). Ultimately, it is perceived that by increasing the capacity of decision-makers to use evidence to improve public health policy and practice, the health of the population will be improved. It is the enactment of this model and these guiding principles that were of interest to the primary researcher of this study; an exploration of the strategies being used by academic and decision-making partners as the RePHS program of research strives to live up to these principles and achieve these commitments.

The following chapter outlines the research questions developed by the researcher, the ethical considerations that were addressed prior to commencing the study, and the research methods.

Chapter 4: RESEARCH QUESTIONS, ETHICAL CONSIDERATIONS, and METHODS

Research Questions

The purpose of this study was to explore and describe the experiences of academic and decision-maker researchers participating in a public health IKT program of research. Specifically, the researcher wanted to identify structures and processes that act as enablers or barriers for all partners on a research team as they engage in collaborative research. From these two overarching purposes, the following research questions were developed to more closely explore the phenomenon of interest:

1. What are the experiences of academics and decision-makers participating in the first two years of an integrated knowledge translation program of research?
2. What structures and processes positively and negatively influence the engagement of partners on the collaborative research team?

Ethical Considerations

To embark on this study the researcher had to undertake two processes: seek and obtain permission from the Principal Investigator of the program of research in which the current study is situated (RePHS) and apply for approval from the Hamilton Health Sciences/Faculty of Health Sciences Research Ethics Board (REB) at McMaster University.

It was confirmed with the RePHS Principal Investigator and Lead Academic Researcher, Dr. Marjorie MacDonald, that the researcher's proposed project could take place within the BC section of the RePHS team (Appendix B). It is important to note that the participation of RePHS team members in interviews with the primary researcher occurred with them being in the role of either academic or decision-making researchers involved in a collaborative research program and not as representatives of RePHS.

Following this, ethical approval from the Hamilton Health Sciences/Faculty of Health Sciences REB at McMaster University was obtained. Guiding ethical principles for this study include those set out by the Tri Council Policy Statement for research involving human subjects (CIHR, NSERC, & SSHRC, 2005). The process of informed consent was used for all participants, including a verbal and written explanation of the study purpose, identity of the researcher, measures undertaken to maintain confidentiality, expected duration of the study, and the nature of participation. In addition, this process included a description of the research methods and how the study conclusions will be used and disseminated. Anonymity of participants was maintained through the use of unique identifiers. The identifiers and corresponding participant names were stored on a spreadsheet in a locked storage cabinet with the rest of the hard copies of the research documentation in the researcher's office.

The primary researcher ensured that participants were aware that her role was that of a researcher and not an evaluator of level of research program participation or participant satisfaction with the ongoing research program. As well, they were informed that individual responses or actions would not be shared with fellow RePHS participants

or the Principal Investigators. To further ensure anonymity of participants, results are reported in aggregated form although direct quotes are used to illustrate a concept or idea.

Research Approach

Qualitative research was chosen for this study as a contextual understanding of the experiences of participants in an IKT research program was sought. Qualitative research supports the exploration of phenomena that are relatively unknown or undefined, and are unexplainable through quantitative research measures and statistical analyses (Creswell, 2007). Maxwell (2005) outlines intellectual goals of qualitative research applicable to this study: understanding the meaning of the phenomenon for participants in the study, the context in which the participants act, and the processes by which events and actions take place.

Qualitative description was chosen as the qualitative methodology for this study. This methodology is primarily used when a straight description of phenomena are desired (Sandelowski, 2000). Of importance for this study was that qualitative description is especially amenable to obtaining unembellished answers to questions of special relevance to practitioners and policy makers (Sandelowski, 2000). The expected outcome of a qualitative descriptive study is a descriptive summary of the informational contents of data organized in a way that best fits the data (Sandelowski, 2000). As a paucity of knowledge exists regarding participants' experiences in and strategies for collaborative research programs, this study sought to provide a rich, thorough description of both academic and decision-makers' experiences. The researcher anticipated that through a

rigorous qualitative descriptive study, important data would be gathered which could direct further exploration of this topic. It was also anticipated that this study could inform those researchers, practitioners, and policy makers striving to engage in successful collaborative research by providing strategies for these partnerships. Ultimately, providing strategies to inform successful collaborative research between researchers, practitioners, and policy makers will strengthen evidence-informed policy making within public health services.

There are two important goals associated with a qualitative descriptive design. First, the achievement of descriptive validity, which requires that the researcher provide an accurate account of the events being explored (Sandelowski, 2000). Second, the qualitative descriptive approach seeks to achieve interpretative validity. This requires that the researcher will provide an accurate presentation of the meanings that participants attribute to the studied phenomenon (Sandelowski, 2000). Characteristic of qualitative description, this study is composed of a collection of sampling, data collection, analysis, and representation techniques (Sandelowski, 2000).

Through utilization of a qualitative descriptive approach, this researcher invokes a constructivist paradigm (Sandelowski, 2000). Constructivists seek to understand and develop subjective meanings of their experiences within the world they live (Creswell, 2007). In order to adequately present experiences appropriately, this constructivist researcher relied on the participants' views as much as possible (Creswell, 2007).

Central to the design of a qualitative descriptive approach is the process of naturalistic inquiry, the pursuit of which embraces the tenets of constructivism

(Sandelowski, 2000). A naturalistic inquirer endeavours to present the target phenomenon as if it was not under-study, paralleling the constructivist approach of presenting multiple, holistic, competing and often conflicting realities of research participants (Guba, 1990; Sandelowski, 2000). This type of inquiry implies a commitment to studying a phenomenon in its natural state with no manipulation of variables (Lincoln & Guba, 1985). As a worldview, constructivism posits that individuals seek an understanding of the world in which they exist and subsequently develop subjective meanings of their experience (Creswell, 2007; Lincoln & Guba, 2000). It was these subjective meanings that the researcher was interested in seeking out as a means of formulating a narrative of strategies created by participants experiencing collaborative research.

Naturalistic inquiry relies on the use of other humans as the primary data collection instruments, as the ability to develop an instrument to encompass to a variety of realities would be impossible (Lincoln & Guba, 1985). Within this study, a qualitative descriptive design allowed an introductory exploration into the issue of academic and decision-maker researcher experiences in a collaborative program of research. In maintaining a constructivist lens, the reported findings represent the participants' viewpoints, allowing the reader to determine transferability to another setting (Guba, 1990). The context of the research is also described in depth to allow for transferability of the findings.

The remainder of this chapter describes the various methodological considerations for this study, including the researcher as an instrument, setting, sampling and

recruitment, data collection and management, data analysis and interpretation, and strategies used to promote rigour.

Researcher as Instrument

In qualitative research the researcher is the research instrument therefore demanding an awareness of the role that he or she plays within the research study (Creswell, 2007). The way in which data are collected, analysed, interpreted, and presented are influenced by the researcher's curiosity, relationships with participants, and conceptual lens (Sword, 1999). When embracing a constructivist paradigm and naturalistic inquiry approach, interpretations are highly dependent on the researcher - participant interaction (Lincoln & Guba, 1985). The primary researcher in this study came to the project with a background and experiences that influenced her stance as a research instrument. She is a public health nurse, research assistant for the RePHS program in another province in which the study is also situated, and a novice researcher. These elements of her background highlight the importance of reflexivity.

Reflexivity refers to the researcher being conscious of the biases, values, and experiences that one brings to a qualitative study (Creswell, 2007). The primary researcher in this study has been practicing in a frontline public health role during this period of public health renewal and the evolution of evidence-informed decision-making within health units, therefore bringing a number of personal feelings and experiences. In addition, she has been a research assistant for the ON team of the larger program of research, working in a collaborative research environment for over a year.

The goal of the current study was to describe the experiences of the participants alone with minimal interpretation, therefore limiting the influence of the personal experiences or feelings of the researcher entering into the aspects of the study. Reflection on the influence of self provides an outlet for these experiences and feelings, as well as "creates a personal awareness of how the research is shaped by one's own biography, and provides a context within which audiences can more fully understand the researcher's interpretation of the data" (Sword, 1999). To acknowledge personal experiences and feelings that arose during the study, the researcher engaged in journaling. This was a continual part of the reflexive process throughout the entire study. The journaling began with the writing of a research proposal and guided the evolution of the concepts that are included in the literature review as well as sampling and recruitment decisions. The journaling developed as the study progressed, and included reflection on data collection and themes that emerged from the analysis. As the primary researcher works within the program of research in which the current study is taking place, personal thoughts and feelings drew parallels and highlighted disconnects between the researcher's experiences and that of the study's participants.

Data Source and Sampling Strategy

This section presents considerations given to the data source and sampling. The study setting, data source, and sampling strategies are described.

Setting

RePHS is a large, multi-site collaborative program of research spanning two provinces: ON and BC. This study took place within this program, specifically with the team located in BC. The approximately 30 BC team members are geographically dispersed throughout the province and are employed by various academic institutions, ministries, Health Authorities, and the Provincial Health Services Authority. The academic institutions include the University of Victoria and University of British Columbia. The Health Authorities involved include Vancouver Island Health Authority, Vancouver Coastal Health, Fraser Health Authority, Northern Health Authority, and the Interior Health Authority. In addition, there are decision-maker researchers representing the BC Ministry of Healthy Living and Sport.

Of importance to note for setting and context is the parallel research team in ON, comprised of approximately 20 members who are also geographically dispersed throughout the province. These decision-maker researchers on the ON team are located in six health units: Haldimand-Norfolk, Ottawa, Peel, Porcupine, Sudbury and District, and Toronto as well as the Ministry of Health and Long-Term Care, Ministry of Health Promotion and Sport, and Public Health Ontario (formerly known as the Ontario Agency for Health Protection and Promotion). The ON based academic researchers are located at McMaster University, the University of Western Ontario, and the University of Waterloo.

For the purpose of the current study, the term *academic researcher* or *academic* is used to describe anyone with an academic institution, e.g., a university, as his or her primary place of occupation. *Decision-maker researcher* or *decision-maker* is used to describe participants who are employed in the variety of public health settings in BC listed above.

Data Source

A number of factors guided the selection of the data source for this study. To achieve the study's purpose and sufficiently answer the research questions the optimal data source was people. Qualitative description is used when a straight description of the phenomenon is desired (Sandelowski, 2000) and given the paucity of information on the experiences of those engaged in collaborative research, it made sense on both accounts to select participants from the current members of the RePHS BC program in order to explore and describe their ongoing experiences.

In addition to people, the researcher believed that important contextual information could be obtained from analysing key RePHS documents. As previously mentioned, RePHS is part of a larger research initiative (CPHFRI), which has been established since 2006. Both RePHS and CPHFRI documents, such as the initial grant, program goals, guiding principles, terms of references, and meeting minutes provided insight into the nature of partnership and collaboration expected from the outset of the program. Although these documents were not subject to formal analysis and interpretation, they provided an interesting corroborator for the data gleaned from the interviews as well as offered important contextual insight.

Sampling Strategy

Purposeful sampling is often used in qualitative research to obtain information-rich sources to allow for an in-depth contextual study of participants' experiences (Miles & Huberman, 1994; Sandelowski, 1995a). These information-rich sources facilitate the exploration of issues of central importance to the study and allow the researcher to gain an in-depth understanding of the phenomena of interest in contrast to the empirical generalizations characteristic of quantitative studies (Patton, 2002). In the current study, the researcher was interested in participants' experiences with collaborative research.

There are several different strategies for purposefully selecting information rich participants. Ideally, this study would have used criterion sampling, which involves studying cases that meet particular pre-determined criteria of importance (Patton, 2002). Criterion sampling is often useful in quality assurance studies or in ongoing program monitoring systems, which share traits with the current program of research (Patton, 2002). As this study sought to explore the experiences of participants in a collaborative research program with the goal of identifying strategies for successful outcomes for the current and future programs and projects, it possessed undertones of ongoing project monitoring in addition to optimizing the quality of project implementation. The small population size from which the sample would be recruited offered a challenge for adhering to the criteria that were initially conceptualized.

Criteria were developed in the early stages of the research project. In order to glean a rich perspective of the participants' experiences, the researcher initially decided to include only those who had been involved in the RePHS program for at least one year at

the time of interviewing. Beyond this criterion, the primary researcher wanted to interview participants with varying lengths and degrees of involvement, so as to obtain maximum distribution regarding program experiences. The researcher attended RePHS BC Team meetings, Liaison Committee meetings, and Advisory Team meetings which provided insight into each participant's degree of involvement and also highlighted participants that the researcher wanted to recruit. This information was also made available to the researcher through minutes of these meetings.

After the initial criteria were set, it was determined that all members of the RePHS BC team who were in either an academic researcher or decision-making researcher capacity at the time of sampling and recruitment, were eligible for recruitment. A decision was made to exclude the RePHS program Principal Investigators and the Project Coordinator from the potential study participants. It was felt that these three people are key drivers within the project and that by including them it would alter the tone of the results. The primary researcher of this study was interested in the experiences of RePHS participants and desired exploring these experiences as a separate phenomenon from that of the leaders of the collaborative program of research.

The RePHS team is multidisciplinary and the primary researcher sought to include a variety of disciplines to gain a broad perspective of experiences. As previously mentioned, disciplines currently represented on the team include nurses, physicians, various public health scientists, and business administrators. In addition, these disciplines are practicing within a variety of settings, including the frontline, management, and within government ministries.

Data or thematic saturation would likely have been reached by approximately 10 interviews, but the researcher was aware that the nature of qualitative inquiry demands flexibility (Sandelowski, 1995a). The initial goal was to recruit and interview approximately 10 participants, half of which would be from academia and the other half from those involved as decision-makers with the program of research. This was done so as to have equally representative perspectives from both types of researchers' contributing to themes emerging from analysis.

Twenty people were invited to participate in the study. The final sample size of twelve participants was ultimately determined by the number of people willing to participate and the number of people needed to achieve data saturation. Data is determined saturated when nothing new is emerging from the sampled participants' collected data (Creswell, 2007). Iterations between data collection, analysis, and interpretation occurred and saturation was realized when analysis and interpretation yielded no new concepts related to the experiences of participants. This decision was made with the research team and occurred when the collected data was sufficient to answer the proposed research questions.

Data Collection Processes

This section of the methods outlines issues related to the data collection processes. Details related to recruitment and individual interviews are described.

Participant Recruitment Procedures

Recruitment began in January 2011 following ethical approval. Participants were recruited through an REB-approved recruitment email (Appendix C). The e-mail briefly explained the study and identified the criteria necessary to be a participant. This recruitment email was in essence an invitation to participate in the current study. It outlined that participation would involve a telephone interview during the study period and that participants should be willing to openly share their experiences pertaining to involvement in the RePHS program.

If there was no response from a potential participant within two weeks of the initial recruitment email, a reminder email was sent to the potential participant. If there was no response to the second email and there was no 'out of office' email received, it was assumed that this person was not interested in participating.

The study's Participant Information and Consent form approved by ethics was sent to study participants with the recruitment email (see Appendix D). This provided the opportunity for the participant to review the information and forms prior to agreeing to participate. The participants were notified both on the consent form and by the researcher that they were free to withdraw from the study at any time without any personal or professional repercussions.

Study participants were asked to fax or email the completed consent form back to the primary researcher. Email was accepted if they were able to provide an electronic signature on the consent form. Once a potential participant contacted the researcher, the researcher answered any questions asked by the participant, obtained information to confirm eligibility for study and consent, began collection of demographic data, and arranged a time for the one-on-one telephone interview. Demographic data was collected via a questionnaire sent to study participants via email following receipt of the signed consent form (Appendix E).

Individual Interviews

Data were collected through semi-structured, one-on-one, one hour to one and a half hour telephone interviews. This was done to provide the experiential understanding necessary for describing the experiences of the study participants. Interviews are used when the purpose of the study is to obtain a rich, in-depth experiential account of an event or episode in the life of a participant (Fontana & Frey, 2000). Semi-structured or open-ended interviews are most often used in qualitative descriptive studies, as they help to discover the who, what, and where of the experience (Sandelowski, 2000). It is acknowledged that gaining trust and establishing rapport are essential in qualitative interviewing and can affect the quality of information participants are willing to share (Fontana & Frey, 2000; Partington, 2001). Due to the logistical limitations of the researcher being located in ON and participants in BC, it was necessary to conduct telephone interviews. The researcher felt that this trust and rapport was established despite being unable to conduct face-to-face interviews. This rapport had been

established through the researcher attending RePHS BC team meetings via teleconference and meeting some of the team members face-to-face at a meeting in April 2010 and conference in June 2010. The researcher also feels that this connection to the BC team and study participants was strengthened by their knowledge of the researcher's commitment to the success of RePHS through her membership on the ON team.

The telephone interviews were conducted at a mutually agreed upon time between the researcher and participant and the participant was asked to provide one to one and a half hours of their time. This timing allowed for a review of the consent and information forms, completion of the interview, and allowed for the participant to ask questions of the researcher when required. The researcher documented on a separate consent form for each participant the date and time of receipt of verbal consent.

Interview data were collected between January and March 2011. Interviews were conducted after written informed consent had been given by the participant as per above described process. With each participant's permission, all interviews were audio-recorded.

Semi-structured interviews allowed participants to reflect on and share their individual experiences and perspectives while at the same time providing a consistent framework for gathering data. The flexible structure of this type of interview consists of open-ended questions defining the initial area to be explored, from which the interviewer and interviewee can diverge in order to pursue concepts in more detail (Britten, 1995). This method facilitated a detailed exploration of the experiences of study participants and uncovered new ideas unbeknownst to the researcher at the outset of the study.

The researcher conducted the interviews using a semi-structured interview guide that was developed from the initial research objectives and concepts to ensure similar lines of inquiry were pursued with each participant (Appendix F). Additionally, the use of the interview guide facilitated adherence to the limited timeframe in which the researcher had to conduct the interview. Concepts from initial objectives were incorporated into the guide and served as probes and general topics, offering the researcher the flexibility required to elucidate the meaningful perspectives of each interviewee (Patton, 2002). The initial interview guide was informed by the key concepts for collaborative research endeavours identified from the synthesized literature review including: establishing a relationship, communication, multidirectional knowledge sharing, and capacity building. The guide, without the associated prompts, was sent to each participant by email prior to the scheduled interview date. This guide changed slightly over the course of the scheduled interviews to reflect the developing themes as data collection and analysis progressed.

This interview guide was piloted with a member of the RePHS BC team to establish adequacy for use in the field (Stake, 1995). The resultant data from this interview were included in analysis. The goals of pilot testing are to assess for any degree of observer bias, test the framing of the questions, and help to collect information that could potentially be included in the guide (Creswell, 2007). Creswell also notes the pilot cases should be selected on the basis of convenience, access, and geographical proximity.

Each interview was audio-recorded using a high quality digital recorder and then transcribed verbatim by a transcriptionist bound by research confidentiality. Transcripts were checked for accuracy by the researcher. In addition to the interview transcripts, the researcher took short notes during the interview to provide context. These notes served as a back-up to the audio recordings in case of technological failure (Creswell, 2007). Interviewees were asked for consent to follow-up with them following the interview when the need arose to clarify any responses. Following transcription, each transcript was imported into the data management software. This process is described below.

Data Management

Interview transcripts were imported into NVivo 9 computer software to facilitate data management and the initial phases of analysis. NVivo 9 was selected as it was available to the researcher and is designed to facilitate coding and concept building (Qualitative Systems Research [QSR], 2010).

The audio-recorded interviews were maintained as digital sound files on the researcher's password protected computer. The files on the audio recorder were erased when the transcription files were received through a secure, password protected internet-based File Transfer Protocol, and after they were backed up on an external hard drive secured with a password.

Anonymity of the participants was protected by developing a code and pseudonym for all participants, with original codes and consent forms stored in a table that was housed in a locked filing cabinet in the primary researcher's office.

Additional physical and electronic data such as transcripts, demographic data, codes, and research templates were stored in a locked file cabinet, and/or a password protected computer file with access restricted to solely the research team. The data will be stored for ten years as required by the Hamilton Health Sciences/Faculty of Health Sciences REB.

Data Analysis and Interpretation

The purpose of data analysis is to transform the data into findings. The analysis for this study focused on themes that were relevant for answering the previously stated research questions and the process for this is outlined in this section.

As previously mentioned, recorded interviews were transcribed verbatim. Data from the interviews were entered into and analyzed with the assistance of NVivo 9 qualitative analysis software (QSR, 2010).

In qualitative descriptive studies, content analysis is used to analyze the collected data (Sandelowski, 2000). Qualitative content analysis examines the language of the collected data with the goal of compounding data into informational categories that represent similar meanings (Hsieh & Shannon, 2005; Sandelowski, 2000). Although qualitative content analysis is the least interpretative of the qualitative approaches, there is an effort to understand the content of the data (Sandelowski, 2000). Analysis began with the reading and re-reading of all the transcripts by the researcher. This was done so as to immerse oneself in the transcripts to obtain an overall sense of the data and allow for

reflection on overall meaning (Graneheim & Lundman, 2003; Hsieh & Shannon, 2005; Miles & Huberman, 1994; Sandelowski, 1995b).

Coding was used as the method of analysis for reviewing the data, performing meaningful dissection, and establishing the framework for interpretation (Miles & Huberman, 1994). True to the iterative and inductive nature of this research, coding began at different times during data collection and analysis and the codes themselves evolved from descriptive to pattern or inferential codes as analysis deepened (Miles & Huberman, 1994; Stake, 1995). The initial etic issues and subsequent emic issues emerging throughout the study guided code development. Memoing aided in moving from the initial empirical data obtained to a conceptual level; guiding direct interpretations of individual instances in the data and categorical aggregations of similar instances (Miles & Huberman, 1994; Stake, 1995).

Descriptive codes, which entail minimal interpretation, were assigned to words, phrases, sentences, or whole paragraphs that embodied study-relevant meanings (Miles & Huberman, 1994). Consistent with content analysis, an a-priori list of codes was not generated; instead, the codes emerged from the collected data (Hsieh & Shannon, 2005). Each code was defined to aid in double coding and to promote consistency across coders (Miles & Huberman, 1994). An inductive approach was used to assign meaning to segments of text, which ensured codes were grounded empirically in the data.

Data collection and analysis occurred simultaneously. Iterations between these activities has been noted to help qualitative researchers think about existing data and generate strategies for collecting new, often more robust data while formulating new

insights (Miles & Huberman, 1994). Segments of text were organized and retrieved using the codes assigned to them and these segments were then clustered into more condensed chunks (categories) to lay the groundwork for drawing conclusions (Miles & Huberman, 1994). Coding, recoding, and revising the data occurred until all categories were saturated and regularities emerged in the data (Miles & Huberman, 1994). Saturation was realized when analysis and interpretation yielded no new concepts related to the experiences of participants. The codes were primarily descriptive and therefore the categories were reflective of the descriptive level of the content, a key feature of a qualitative descriptive approach (Graneheim & Lundman, 2003; Sandelowski, 2000).

The primary researcher and thesis supervisor independently coded the first two transcripts. The use of multiple coders during analysis and interpretation was done to promote consistency and reliability (Sandelowski, 1986). Upon completion of the initial coding, a meeting was held during which the two coders used consensus building to develop the codebook. This codebook was then applied to the remaining transcripts by the primary researcher. The primary researcher met with the thesis committee regularly to discuss the progression of the analysis and interpretation. All data analysis decisions were debated until consensus was reached in order to solidify the interpretative validity of the study (Sandelowski, 2000).

To further support the richness and accuracy of the data, the primary researcher engaged in member checking. This occurred by preparing a five page summary of the results of the data analysis. The summary highlighted key themes that emerged and were used for formulating the resultant strategies suggested by the researcher for engaging in

collaborative programs of research. This summary was shared individually with those who were interviewed via email and the researcher asked the participants for feedback. Feedback received by the researcher was supportive of the themes and strategies that had been created.

Research results are presented using an analytical framework approach (Patton, 2002). Patton describes several analytical approaches for the reporting of qualitative data including organization by processes, issues, research questions, or sensitizing concepts. It is important to remember that the expectation of a qualitative descriptive study is a "straight descriptive summary of the informational contents of data organized in a way that best fits the data" (Sandelowski, 2000). To align the reporting of the findings to the expectation of the research approach, the researcher chose to present findings using sensitizing concepts. Sensitizing concepts are aspects of the phenomenon under study which played an important role in guiding the fieldwork by raising the researcher's consciousness about certain factors that may arise in data collection and analysis; they can be subsequently be used to organize findings (Patton, 2002). Key concepts gleaned from the literature that guided the fieldwork were re-visited and further developed by concepts that emerged from the current study. Data are organized and described through these sensitizing concepts.

Strategies Used to Promote Rigour

The overall rigour of a qualitative study is judged in terms of its trustworthiness and can be established using several strategies. Lincoln and Guba (1985) propose that in order for a qualitative study to be trustworthy, it must be credible, dependable, transferable, and confirmable. Credibility includes rigour of methods and the credibility of the researcher. In this study, it was ensured by personal journaling by the researcher and member checking the messages with the participants after each interview (Lincoln & Guba, 1985). This happened at the conclusion of each interview and was supported by notes taken during the interview; the researcher clarified the main messages from the interview. Researcher credibility was supported by the composition of the thesis committee.

According to Lincoln and Guba (1985), dependability is providing evidence of the stability of research results. The researcher is required to take into account factors of instability and design induced changes that can affect the quality of the study (Graneheim & Lundman, 2003). The goal of dependability is to ensure that if the same or similar informants were involved in a study of the same, or similar, context by different researchers, the results would be similar to the original findings. In this study, dependability was strengthened through the use of a semi-structured interview guide, ensuring that the same questions were asked of all participants, and defining the codes during analysis to create congruency amongst coders during the analysis phase. The researcher allowed for some small additions to the interview tool to build on early interviews that may include new ideas not in the original tool. In addition, an audit trail

of all study design and analysis decisions was recorded throughout the entire length of the study. Morse (1994) identifies six potential data sources of an audit trail including, "…raw data, data reduction and analysis products, data reconstruction and synthesis products, process notes, materials related to intentions and dispositions, and instrument development information" (p. 230). The use of thesis committee members for debriefing and examination of analysis and reporting further supported both credibility and dependability (Lincoln & Guba, 1985).

Transferability refers to the extent that the findings can be transferred to another setting (Lincoln & Guba, 1985). This is most aptly achieved through a thick description of study context, methods, and findings. Transferability of the findings is confirmed by the researcher providing a clear and distinct description of RePHS program culture and context, description of the participants, data collection and analysis, in addition to providing direct quotes from the data to provide a rich context for the readers (Graneheim & Lundman, 2003). Relevance is also associated with transferability. Findings are judged to be relevant if study claims are pertinent to a particular interested audience – in this case academic researchers and decision-maker researchers engaging in collaborative research in public health policy. The researcher established this through stating the significance of the study, gaps in knowledge, and the applicability of findings for practice.

Confirmability pertains to the extent to which biases, motivations, interests or perspectives of the primary research influence the interpretations (Lincoln & Guba, 1985). The aforementioned audit trail established using note-taking for all coding

decisions and how data were reduced for analysis and interpretation aid in establishing clarity of the researcher's perspective (Sandelowski, 1986).

The next chapter presents the study findings. It begins with a description of important contextual factors and changes that occurred during the study, which is then followed by characteristics of the study participants, and the findings presented through sensitizing concepts relevant to IKT structures, processes, and strategies.

Chapter 5: FINDINGS

This chapter includes findings relevant and appropriate for a qualitative descriptive study focusing on collaboration in research in public health policy. The chapter begins with a detailed description of the study context with particular attention paid to changes in context that occurred from this study's onset through data collection and analysis. Following this is a description of the study participants, their expectations and motivations for participating in the collaborative project, and their experiences after the first two years of the project. Findings in the form of structures and processes relevant to collaborative research engagement and challenges are then presented, followed by strategies for moving forward in RePHS. The final sections describe perceived general benefits of and strategies for successful collaborative research from the viewpoints of participants in the study.

Emerging Context

This section of the findings expands on what was described in Chapters 3 and 5 with respect to the study context and setting and includes relevant provincial public health political changes. The information regarding contextual changes was primarily gleaned from interview transcripts and personal communication with RePHS BC research staff, Principal Investigators, and RePHS ON team members. Key information obtained from BC governmental websites was additionally supported by media releases, RePHS BC team meeting minutes, reports and newsletters, and the researcher's own personal

knowledge of current events. It was felt that highlighting contextual shifts is important for the current research given that changes in public health political structures and processes directly influence the RePHS project. This contextual description is also vital to situate the findings presented later in this chapter.

The Evolution of CPHFRI and RePHS

The formulation, collaboration, and team building processes for CPHFRI began in 2006. As previously described, the CPHFRI team held a Think Tank in April 2007 to identify research priorities related to the impact and outcomes of the implementation of Core Public Health Functions Framework in BC (CPHFRI, 2009a, para. 9). The outcomes of this meeting were a research agenda and specific research priorities, and a conceptual framework to guide proposal development of future projects. Many of the current RePHS BC team members were part of these early processes.

In 2008, infrastructure funding (2008-2011) was received from the Michael Smith Foundation for Health Research for the CPHFRI program and its projects (CPHFRI, 2009c). Objectives of this endeavour provided the support basis and impetus for future projects that would be proposed and realized under the CPHFRI umbrella. RePHS is one of these projects and its evolution to its current structure has led some to call it a program of research in and of itself. Several objectives were created for this infrastructure funding: leveraging funding to research BC's core public health function priorities; increasing research productivity of team members; building capacity and leadership for Canadian PHSSR; exploring and using innovative methodological practices for PHSSR;

engaging in KTE; and creating a supportive and unique training environment for students, researchers, and public health professionals (CPHFRI, 2009c).

It is important to highlight the two year timeframe that it took from initial discussions in 2006 to receiving funding and getting underway in 2008; bringing together the appropriate policy makers, practitioners, and academic researchers with interest in PHSSR and population health interventions requires time and resources. Engaging decision-makers as researchers can be powerful for moving research into practice but it demands commitment to the time and process. Since receiving the funding in 2008, CPHFRI team members have successfully submitted and received funding for several research proposals including RePHS. The team has had several face-to-face and teleconference meetings, published several electronic newsletters, presented findings at conferences, supported graduate students at the Master's, Doctoral, and post-Doctoral levels, and have hired a team of support staff located in BC (CPHFRI, 2009c).

In May 2009, CPHFRI hosted a Research Methods Symposium attended by many of the CPHFRI and RePHS academic and decision-maker researchers from both BC and ON. Students, policy makers, and practitioners from outside the CPHFRI program were also in attendance. The purpose of the Symposium was to introduce innovative research methods relevant to CPHFRI's program of research, PHSSR, and population health interventions while providing an opportunity for networking and researcher training. In addition, the event provided an opportunity to build capacity outside the team for research methodologies relevant to public health policy and practice (CPHFRI, 2009c). This

Symposium was mentioned as a key event for team engagement by several academic and decision-maker researchers in the current study.

The initial funding received in 2008 ended in the Spring of 2011 but the CPHFRI research staff and team are still in place, supported by additional funding received for numerous projects, planning, and meetings currently in progress or recently concluded. CPHFRI projects and meetings already completed include:

- Team Planning Grant for developing a research program (CPHFRI) on the process and impact of implementing Core Functions for Public Health in BC (December 2006-2007);
- Healthy Living Intervention Research Project focusing on healthy living and chronic disease prevention (September 2008-2009);
- Knowledge to Action Research Project to identify, implement and evaluate appropriate KT strategies to support the use of evidence in public health core program development and implementation (May 2008-2010); and a
- Knowledge Synthesis Research Project resulting in a meta-narrative review of conceptual models for moving knowledge into action (December 2008-2009) (CPHFRI, 2009d).

Currently funded CPHFRI projects include RePHS, as well as a Knowledge Synthesis Project examining theoretical frameworks using complexity science to develop a framework for population health policies, and a Knowledge Translation Supplement to support KTE activities related to already completed projects (CPHFRI, 2009d).

RePHS is by far the largest and most complex of all the CPHFRI projects. As previously mentioned, it spans both BC and ON involving almost 50 people including the Principal Investigators, research coordinators and research assistants, administrative support, and academic and decision-maker researchers. Since its inception in 2009, the RePHS BC and ON teams have experienced changes in participants due to retirement, individuals moving onto new career opportunities, and ongoing public health political shifts; team member changes have occurred more frequently on the ON team than the BC team. Additionally, BC has seen political fluctuations that have challenged the project's processes and outcomes as well as team member expectations, relationships, and engagement.

BC Provincial Public Health Context and Impact on RePHS

Since the time of the original RePHS funding period in early 2009 to the time of data collection for this study, the BC provincial health care system has shifted somewhat. In 2009, public health programming responsibilities crossed two ministries – the Ministry of Health Services (MHS) and the Ministry of Healthy Living and Sport (MHLS). The MHLS was responsible for the planning of public health services while the MHS was responsible for operations. In the Fall of 2010, the MHLS was dissolved and its responsibilities were assumed by the MHS. In early 2011, Ministry reorganization continued as a result of a change in premiership: the MHS was re-named the Ministry of Health and a new ministry, the Ministry of Community, Sport and Cultural Development was created. New Ministers for each of these structures were appointed in March 2011 and revised service plans were released in May 2011. The Ministry of Health has

"overall responsibility for ensuring that quality, appropriate, cost effective and timely health services are available to all British Columbians" (BC Ministry of Health, 2011, p.6). The goal of the Ministry of Community, Sport and Cultural Development is "to help local governments and residents build vibrant, green and healthy communities that are well-governed, liveable, economically-resilient, socially-responsible, and full of opportunities for participation in sport and the arts" (BC Ministry of Community, Sport and Cultural Development, 2011, p. 6). As some members of the RePHS team are employed at the Ministry level, these shifts have had an impact on their employment and potentially their participation in the RePHS project.

The Core Public Health Functions Framework was initiated by the Ministry of Health Services in 2005 during a time of public health renewal and included a framework for strengthening public health and improving population health. The objectives were to identify the public health services that the Regional Health Authorities would provide and strengthen the link between public health, primary care, and chronic disease management (BC Ministry of Health Services, Population Health and Wellness, 2005). As a result of the fluctuations in the governance of public health in BC, the programs and strategies included within the framework have yet to be fully implemented. RePHS was predicated on an assumption that the Framework and resultant programs and strategies were going to be put into action and since they have yet to be realized, this is potentially contributing to BC team member contributions to, engagement in, and perception of the project. In addition, from the Fall of 2010 through the Spring of 2011, data collection for RePHS in BC was impacted by political upheaval. An additional factor contributing to Core

Functions implementation and subsequently the RePHS project has been internal restructuring that has occurred within the Health Authorities themselves since RePHS began.

The context which emerged prior to and since the current study was conceptualized in June 2010 has played a key role in the collection and analysis of the following findings.

Characteristics of the Participants

Table 1 presents a summary of the RePHS BC team and response rates for each group (decision-maker researchers versus academic researchers) for the interviews. Twelve RePHS BC team members agreed to participate in an interview, representing 60% of the population (20) sampled. This group represents the RePHS BC team at the time of sampling and recruitment in January 2011. Despite the dynamic public health context and demanding workloads in academia and practice, academic and decision-maker participants have not changed since RePHS began in 2009. Of the twelve interview participants, five were academic researchers and seven were decision-maker researchers, representing 71% and 54% of the total number from each group respectively. In addition to their involvement in RePHS, all twelve participants had been or were currently involved in other CPHFRI projects or programs at the time of the interviews.

Table 1

Summary of RePHS BC Team and Interview Participants

	Academic Researchers (% of total)	**Decision-Maker Researchers** (% of total)	**Total** (%)
Total Number on RePHS BC Team	7 (35)	13 (65)	20 (100)
Number Who Participated in Current Study	5 (71)	7 (54)	12 (60)

Note. These numbers and percentages represent the total number of researchers and subsequent interview participants at time of sampling and recruitment in January 2011.

Reasons cited for not participating in the current project included personal reasons and concerns of being an inappropriate participant based on minimal participation to date in RePHS. An unsuccessful attempt was made by the researcher to recruit team members who felt they were inappropriate for an interview. The researcher explained that all RePHS BC team members were appropriate participants and it would be important to hear their perspectives regardless of their degree of RePHS involvement.

Five academic researchers represented both universities participating in RePHS – the University of Victoria and the University of British Columbia. Four of the six decision-making organizations participating in RePHS were represented by the seven decision-makers. In order to maintain confidentiality, the researcher is unable to disclose which four decision-making partner organizations were represented. The following disciplines were represented by both academic researchers and decision-makers: nursing, medicine, health promotion, health economics, policy consultation, public health

planning, and business administration or management. All of the academic researchers reported their main job function as research, with a couple reporting a secondary education function. Job functions reported by decision-makers included policy development, coordination or project management, senior management, or functions related to roles such as Medical Health Officer or Chief Executive Officer.

Actual numbers according to the original categories in the demographic questionnaire regarding length of time in the health care profession and length of time in current position cannot be disclosed in an effort to protect participants' identities (see Appendix E for Demographic Questionnaire). Therefore means and broad ranges have been reported below to maintain confidentiality. The mean number of years academic researchers had been in their current academic role was eight, with all of them reporting working in the health care sector for at least 10 years. Several of the academics had been working in health care for more than 20 years. Decision-makers had spent an average of five years in their current position and had been working in a health care profession for an average of 16 years.

The remainder of this chapter presents the findings in the form of sensitizing concepts relevant to collaborative research expectations and motivators, feelings regarding participation, engagement in collaborative research, challenges, strategies for moving forward in RePHS, and benefits and facilitators of successful collaborative research.

Expectations and Motivations

Participants were asked to describe any expectations they had upon entering the RePHS project as well as what motivated them to participate.

Expectations of the Collaborative Experience

Participants described various levels of expectation regarding their participation in RePHS. Many decision-makers expressed no expectations or assumptions regarding collaborative research prior to becoming engaged in the project. This stemmed from either having no experience with collaborative research or the conscious decision to enter the project with an open mind. The following interview excerpt highlights this:

> To be honest, I didn't really have any [expectations]. And I sensed that this collaboration was something new…a new entity all in itself. And so I just went in with an open mind wanting to learn how it was structured, how it would work, [and] what my role would be. (Decision-maker Researcher)

Of those participants who did have expectations regarding the project a few expected that clear, transparent expectations related to contributions, roles, program goals and outcomes would be set at the beginning by the team and would be continually revisited during the project. One academic expected that "…expectations [would be] on the table, and everyone [would] understand what the expectations are and the goals of the research."

It was the expectation of several of the participants that their level of project involvement would be dynamic, negotiated, and individually based. They expressed an expectation that their contributions would fluctuate throughout the project based both on their individual workload demands as well as the stage of the RePHS project. This expectation was shared equally between academic and decision-maker researchers.

An additional expectation shared by academic and decision-maker researchers was that the 'traditional' roles held by academia and decision-makers would be upheld in RePHS. For example, academics would take on the "grunt work" related to grant writing, budget preparation, data collection and analysis; while decision-makers would inform and be integrated into the research process and be involved in KT endeavours at the end of the project. Decision-makers expressed an expectation that their contributions and voice would be heard by the academics and would be taken seriously; these contributions could be from either decision-makers as individuals or as representatives of a Health Authority or Ministry. It was stated that these traditional academic and decision-making roles would emerge at different points in the research process, as evidenced by this participant's expectation:

> So it's not just the academics that are the researchers running the show. To me there are times when it really is the decision-makers that are running the show. It's that give and take; there are times where the [academic] researcher steps back because it is all about the decision-maker and then there are other times when the decision-makers sit back….it's that collaborative effort that goes back and forth. (Decision-maker Researcher)

Motivation to Participate in Collaborative Research

Motivators for participation encompassed personal and professional reasons for both academics and decision-makers. Motivation to participate was driven by the potential for the project to have benefits that would extend beyond RePHS to the participant's own practice or research interests including working with others who value evidence-based decision-making, building relationships, and learning from other team members. One academic researcher described motivation based on the RePHS research paralleling other projects he or she was already engaged in:

> I am working on a different project that is looking at collaboration, and RePHS is looking at collaboration from more of a public health lens, which I think is really interesting. So it really was about the questions that RePHS is studying. (Academic Researcher)

The most prevalent personal reason described for participating in RePHS was that the research itself was intriguing and the content area was interesting. This is illustrated in the following excerpt:

> I thought it was an interesting project. The [research] questions about comparing two very different provincial policy level decisions in two different provinces as they impact very large industry health care. I found it intriguing. (Decision-maker Researcher)

Decision-makers additionally expressed motivating factors related to their practice in public health policy and decision-making, including a desire to contribute to research with public health practice related outcomes and an opportunity to "fill the communication gap" between Health Authorities and the CPHFRI program and RePHS project. Interesting to note is that one decision-maker shared that participation in RePHS would bring credibility and accountability to the Health Authority itself. An interest in incorporating an evaluation component into the implementation of the Core Functions and public health processes in BC was also cited as a key motivator:

> This was a great opportunity to actually make that evaluation happen and to support it in a way that is collaborative; much like the whole philosophy behind the implementation of the Core Functions framework has been a very collaborative process within BC. This struck me as another way to collaborate with a different group around supporting that implementation. (Decision-maker Researcher)

Already knowing or having previously worked with other team members involved in either CPHFRI or RePHS was a motivator for academics, while decision-makers cited respect for those involved in the project and strong, credible leadership as key factors in

their decision to participate. This respect for team members and the leadership was described as follows:

> There are some very credible people that are working on this and you know, there's good leadership and that always attracts a commitment to spending time on [the project]….you know that there is strong leadership in place and that there's a likelihood of some success in achieving the goals and objectives. (Decision-maker Researcher)

Academic and decision-makers expectations and motivations for participation comprised the individual components upon which participants' experiences with the RePHS project were built. These individual factors were the starting point for the collaborative experience that would evolve as the RePHS project progressed.

Feelings Regarding Participating in RePHS

At the time of the interviews, RePHS had been underway for approximately two years. Participants were asked about their feelings regarding their participation in the project since its inception, as they had all been involved from either the time the proposal for RePHS was written or shortly after funding had been received.

In general, participants expressed positive feelings related to their experience in the project to date. These feelings included enjoyment about working with and learning from other team members as well as excitement that this IKT endeavour has potential to impact and transform the public health system. These positive feelings were expressed by both academics and decision-makers on the team. The following passage exemplifies an academic researcher's excitement regarding participation:

> I think it's very exciting because you have opportunities to work with people, not just other researchers, but you have an opportunity to work with people who are in

> practice and who are developing and delivering public health services; and so you have an opportunity to hear from them, what their interests are, what their important questions are. And then of course as you go through the research at the end of the research, you also have to opportunity to work with them to incorporate the findings. So I feel that it's both exciting and has lots of potential for impact.

Participants also described feeling proud to be a part of RePHS and valued as a member of the team. Several decision-makers described that an important positive part of their experience to date was that they were listened to and heard by the academic researchers on the team. This is evidenced by the following excerpt:

> I feel proud to belong to this research program, and I feel that my contributions and the contributions from the other Health Authorities are heard and valued and that we're listened to and that whatever happens, we'll figure out a way together. (Decision-maker Researcher)

Although more participants expressed positive feelings, concerns were heard from approximately half of the participants. One decision-maker cited experiencing frustration early on in melding the priorities and views of the academics and decision-makers on the team and found it challenging during meetings when academic issues dominated the discussion. Decision-maker concern was also expressed regarding feelings that their feedback provided on research decisions was not initially considered. It was clarified that these concerns occurred early on in the project and were addressed soon after they were brought to the attention of the Principal Investigators and research team. In contrast to these concerns, academic researchers' concerns were related to feelings of guilt regarding project participation; that they "should have done" or "should be doing" more. Disengagement was cited as a result of personal workload factors that prevented more active participation in RePHS.

It was interesting to hear during the interviews that participants were generally positive about their experience with RePHS and that concerns that occurred early on and were related to group process were addressed quickly and effectively. Individual concerns related to feelings of guilt regarding level of participation were identified and participants shared what they may do as individuals in the future to alleviate these concerns. Structures and processes that enable RePHS team member engagement and participation at the broader team level are explored in the next section.

Structures and Processes that Enabled Team Member Engagement

Concepts were identified as structures or processes that supported engagement in the program of research as it evolved from initial grant writing to its current stage. This section presents these findings and describes how each concept was viewed as important for engagement in RePHS.

Supportive Organizational Structure and Staffing

The organizational structure and staffing currently supporting REPHS was reported by many of the academic and decision-maker participants as a facilitator for engagement. Several academics and several decision-makers described the organized, reliable, accessible, and knowledgeable research support staff, including the research coordinators and research assistants, as vital for keeping them up-to-date regarding RePHS progress. The following excerpt highlights the importance of the staffing for this large program of research:

> I would say the enablers are technology and the support, the people who are engaged in the day-to-day work, the research assistants. Sending out messages

> and following up those messages. I know that those kinds of things are time-consuming. But having those reminders…those have been great enablers. So the research assistants, the support from research assistants and having somebody who is coordinating the program that is very involved and knowledgeable of the process and what's going on. (Academic Researcher)

Regularly scheduled team meetings were cited by both academics and decision-makers as vital for staying engaged as well as for brainstorming and working through issues that arose during the course of the project. The supportive nature of having these scheduled interactions was evidenced by the following participant quote: "The biggest [challenge] for me is dedicating time to the project....which is why I really value when we have our meetings and things set in advance because I can block out that time" (Academic Researcher).

A final important structural support that was acknowledged equally by academic and decision-makers was the funding available through RePHS for participating in face-to-face meetings as well as to support travel to conferences. Financial resources were seen as an enabler for relationship building as articulated by this participant:

> Secondly, the biggest enabler has been having some resources to support a team and to support the ongoing relationships of the team. Because, you know, it has enabled us to get together, it has enabled us to spend some time working across decision-maker and academic teams. So those resources are critical to having made this effective. (Decision-maker Researcher)

Creation of an Open, Supportive, and Flexible Research Environment

Beyond the organizational supports available to the team, participants acknowledged the research environment that has developed over the past two years as one which is open, supportive, and flexible. Open lines of communication between the principal investigators and the team, as well as between team members, was described as

facilitating discussions and attainment of consensus during decision-making. Openness was also referred to in terms of being "open and clear about the involvement" of team members. Establishing clarity of and an understanding of each other's roles were also facilitated by the supportive atmosphere. The creation of an environment that fosters relationship building, communication, effective and efficient research progress, and learning was articulated by both academics and decision-makers as vital for engagement.

Many of the decision-makers described how important the attitude of the academic researchers towards them and their participation in the project had been in facilitating their engagement. This is summarized by the following excerpt:

> One of the things I think has been an enabler is the attitude of the [academic] researchers on this team; [they have] really strived to understand the dynamics and constraints of the decision-makers. I think they are often trying to bend over backwards to respect the time commitments that the decision-makers can make, to respect the travel barriers that they might have, to respect [the decision-makers'] frustrations with the research timelines….The attitude the [academic] researchers have taken on to try to find a way of working with the decision-makers. And you don't always see that. In a lot of other research activities that I sometimes get engaged with it is seen as an assumption. (Decision-Maker Researcher)

The supportive environment has also helped to minimize cultural differences that may have existed between the academics and decision-makers prior to initiating the project; it has proffered an understanding of the challenges faced by both types of researchers. One academic researcher described the outcome of this supportive research environment as follows:

> I think that in this project, there are very, very, very few challenges around cultural differences….all of our decision-making partners understand that research takes time…you can't deliver it to them tomorrow…they know that they are in this for the long haul….I think that there is just a real sense of understanding that research takes time and that we are going about this in the most timely way that is possible.

The flexibility of the research environment was also described as important for engagement. For example, the flexibility with agendas and openness within team meetings was acknowledged as being important for exploring and debating theoretical and conceptual ideas related to the project. One decision-maker explained how this could support those who bridge academia and practice and are willing to share ideas openly:

> I feel it is desirable for me to be in discussions with other people at meetings where there is lots of stimulus from other people, where there is exchange of ideas. Other people may function better as introverts, with [electronic] feedback, just providing comments….CPHFRI meetings run for a full afternoon and it enables debate and deeper discussions.

This same feeling was captured by another decision-maker, who also acknowledged that this open type of discussion may not cater to all team members:

> I think that there's a lot of discourse and I think sometimes if you are not a person who like conceptual, theoretical conversation, if [you] are more practical, than you're not going to enjoy them. But if you are there for a purpose of really looking at some of the theoretical pieces versus the actual implementation, then I think it's fabulous.

Effective Communication Structures and Processes

Information sharing within the research team and the dissemination of knowledge outside the team to facilitate project progress in the research setting requires the creation of effective communication structures and processes. Structures reported as enablers for internal information sharing and coordination of team processes include the monthly newsletters, short electronic communication, and reminders regarding meetings, upcoming events and requests for feedback. Half of the participants reported that the monthly newsletters were their primary source of information for staying engaged with

the project developments and progress, and for learning about other team members' achievements. This is described in the following passage:

> I like [the newsletters] as more of an update on the people that are in the project…who they are…it's nice to hear what people are up to, and what other people's research projects are. I may have an interest in something that one of the other researchers is talking about, and you know, that is really neat to learn. (Decision-maker Researcher)

Regular, ongoing communication and updates with succinct information was appreciated by both academic and decision-maker researchers. One-page summaries were highlighted as a useful source of succinct information for both the decision-makers themselves and those in the Health Authorities with whom they would be sharing the information:

> [They are] really helpful… [they help] with the challenge of not having to go to read a whole bunch of different documents….put it down into manageable bits. I think the more support for getting the project and the information down into very manageable, succinct bits, the better we are going to be about communicating it within our organizations [Health Authorities]. It is helpful to have a one-pager with just the key points about what the project is about and what [the Health Authorities] will get [out of it]…and that really, really helps with communication. (Decision-maker Researcher)

It was articulated by a couple participants that email communication is better than via the project SharePoint site or externally based CPHFRI website. One participant suggested that research staff create and send all email from one single generic RePHS email, e.g., rephs@rephs.ca, which would facilitate finding RePHS communications amongst often overloaded email inboxes. Academic researchers appreciated regular reminders via email regarding project meetings and follow-up pursued by research staff when necessary.

Strategies to Support Relationship Building and Maintenance

The development of relationships was a key factor influencing participant engagement in the research project. The mechanisms in place for the building and maintenance of relationships were highlighted as strategies for promoting team engagement. Participants described that the relationships they built with their fellow team members and regular engagement with them were reasons why they enjoyed collaborative research:

> One of the reasons I like doing partnership research is that you get a chance to know people and you get a chance to interact and talk with them. I definitely would say I value the face-to-face contact…it changes everything when you have a personal kind of contact or information. (Academic Researcher)

The concept of meeting face-to-face was a strategy heard from many of the participants as a vital component to engage people in a large program of research. The CPHFRI Methods Symposium that took place in 2009 was articulated by many of the academics and decision-makers as an important event that supported the building of new relationships as well as maintaining or fostering previous relationships. This face-to-face meeting occurred early in the RePHS project and was described as a strategy for enabling participant engagement. The following decision-maker described the importance of the event in formulating the groundwork for relationships within the team:

> I think the seeds of it for me were at that 2009 CPHFRI Symposium. It was a week-long event in Victoria and we had people there from Ontario and people from BC and there were policy-makers, academic researchers and then people from the Health Authorities….I believe there were even people there from external [community] groups. And it was just this amazing energy in the room. And it was very preliminary, so I wouldn't say that there were partners, per se at that point, but I think that's kind of, for me, where the seeds were sown in terms of how we were starting to try to understand one another's perspective and at least

> hear one another. And then from there, we realized okay, we need to figure out how to work together.

In addition to the momentum the Symposium gave to relationships amongst team members, study participants shared that the event built "synergy" while providing the opportunity to learn about research methods that would be used in the upcoming research projects.

Valuing and Respecting Team Members

Most of the decision-makers shared that they felt valued and respected as part of the research team which in turn increased their feelings of engagement with the large team. This feeling was articulated as being supported by actions of academics and the Principal Investigators through changes to the research based on their input:

> It is good to see that I am listened to and that there is modification that happened based on [my input] and that my suggestion on how to make [the research] more relevant for us practitioners in the public health field, if not the whole of the prevention field, was taken into account (Decision-maker Researcher).

Although this enabling factor for engagement in RePHS was articulated mainly by decision-makers, it was also noted by one of the academic researchers as important for engaging in the research; being valued by the decision-makers and Principal Investigators supported this participant's involvement:

> I certainly feel like our opinion is valued. I certainly feel that when we're asked about whether or not we want to participate, they are asking us about our opinion because it matters. Or because they really want to know….they are asking because they really do want to know what we think, and the advice I think of the team is definitely valued….by everyone on the team….the decision-making partners and the other researchers. (Academic Researcher)

An additional strategy that decision-makers cited for facilitating their engagement was when the Principal Investigators and academic partners informed them of

opportunities both internal and external to RePHS or CPHFRI for increasing their research contributions and experiences.

Beyond valuing the perspectives of team members, the importance of knowing and appropriately utilizing the skill sets brought to the team was acknowledged by decision-makers and academics. One academic researcher shared that communicating this knowledge and understanding of skill sets to the team is important:

> I think you say to people, 'you'll be involved in some parts, but you might not be involved in other parts'. And so I may not be involved in the data collection, but I may be involved in the analysis and I may be involved in the writing up. It depends on what [your] skill set is.

A decision-maker felt that this respect and valuing amongst the team facilitated involvement and engagement, and shared that "there is real respect within the team for each other's very unique skill-sets and knowledge, and I think that makes the team mesh."

The above excerpts highlight five of the important structures and processes that were identified by participants as enablers for their participation in RePHS. Participants also shared that challenges arose as the team worked together over the first two years of the project. Challenges that impacted participation in and progress of the collaborative research project are identified below.

Structures and Processes that Present Challenges for Collaborative Research

This section presents challenges that were experienced by participants since they began their involvement in RePHS. Challenges impacting participation and engagement in the collaboration were identified at the individual, team, and external contextual levels.

Challenging Individual Demands

The primary individual factor impacting participation and engagement in RePHS was incorporating RePHS project work into already heavy workloads. Balancing RePHS work with other work was identified as challenging by both academics and decision-makers. Almost all of the decision-makers shared that although work related to the project was valued and important, it was hard to find time to engage in research-related activities during the workday. Research is not always a part of decision-maker responsibilities within their organizations, therefore making it difficult for them to allocate time. The following excerpt highlights the frustration one decision-maker has with this challenge:

> I think I, at times, am not able to spend as much time on this as I would like, just because of conflicting demands on my time and also the degree to which I can give it a priority with other work responsibilities that I have. So that's always a bit of a frustration for me. Like, I haven't been able to attend some of the team meetings and I try to keep up with what's going on through the email exchanges et cetera, but it would be nice to be able to participate in some of the meetings…it's just because of, you know, demands on my time from my regular work…it is hard to hone out the space in the workday for this stuff.

Several of the academic researchers also experienced challenges related to workload demands, even though research was identified by all academics as their primary job function. The demand placed on researchers by being committed to numerous other projects was cited as the main factor impacting their time available to contribute to RePHS; one academic shared that "that this project hasn't made it to the top of my priority list."

Although both academics and decision-makers experience workloads that make it difficult to contribute to RePHS, it was highlighted by both types of researchers that they

would like to contribute more to the project and foresee a more active role in the future. This is evidenced by the following quote:

> I would definitely like to contribute more [to document analysis] because that piece of work has slowed down a bit mainly because of other commitments that I have. So I mean, and this is probably just an issue in general for academic researchers, is balancing, you know, your work on various different projects and your commitments. (Academic Researcher)

Half of the participants also expressed satisfaction with their contributions to the project to date given their current workloads. One decision-maker described satisfaction with contributions and looked ahead to future increases in involvement:

> I am very satisfied. I mean, I do think there are maybe some more ways that the decision-makers could get involved, but I'm just sure how yet. I know that, you know, we always have opportunities to get involved in more in-depth analysis of the information….But I hope the future of this project we can get more involved.

Challenging Structures and Processes at the Team Level

Factors were identified at the level of the RePHS team that presented structural and procedural challenges for the collaborative project. Half of the participants described challenges related to the melding of the research and practice perspectives and "worlds". Different expectations, perspectives, values, and opinions of academics and decision-makers were cited as influencers on team dynamics and functioning. One decision-maker felt that the "age-old problem of the town and gown split" still impacts collaborative work, although this was attributed to experiences in the broader public health policy world more than those within the RePHS team itself. This participant went on to state that RePHS is part of the process of "building a natural bridge" between the two worlds.

Within RePHS specifically, decision-makers shared that challenges had arisen when trying to bring the practice voice into discussions; often meetings are focused on

details of research that are felt to be academic researcher responsibilities. The following excerpt highlights this challenge:

> Sometimes it is a bit challenging to bring that voice of the Health Authority to the table because it seems to be that a lot of the discussion is around the details of academic research and so it's challenging to ensure that there is equal opportunity to bring that voice of the Health Authority to the table, or practice to the table. (Decision-Maker Researcher)

Another decision-maker offered a broader conceptual view of the challenge in bringing academia and practice together in collaborative work and its impact on communication:

> The different languages that we speak, the different perspectives that we have. The different environments that we are working in. Very, very different. The theoretical versus the practical, the clinical versus the operational.

At a practical level, it was acknowledged that the workloads and languages of the research and practice worlds differ. At certain points in time academics may have heavier workloads while at other points in time, decision-makers may be experiencing heavier workloads. This challenge when trying to work collaboratively was described as follows:

> We all have demands on our time, right. And I think sometimes, you know, when I have huge demands on my time is different than when other people have huge demands on their time, so, you know, the time we have available doesn't always line up very well. (Academic Researcher)

The difference that exists in the language used by academics and decision-makers was cited as a factor challenging how information is communicated. Research language was described as "complex" and "high-level", making it challenging for decision-makers to not only understand but also translate for application in their organizations. Decision-makers acknowledged that that practice world also has its own language, which could be challenging for their academic team members.

The means by which information is communicated within the team was also identified as a challenge by academics and decision-makers. Several participants identified that they were neither using the RePHS SharePoint site on a regular basis nor to its full capacity for within team communications. Accessing SharePoint was the main concern as it required "one more step" with the required password and is not available for mobile access, e.g., on a BlackBerry.

Communication processes used for achieving consensus in decision-making were identified as a challenge for the team. It was described as "frustrating" when people try to make collaborative decisions and "difficult to obtain everyone's input by the time a decision has to be made" using email and teleconference. These processes were attributed to the logistics of research team; a large team geographically dispersed makes communication and coordinating efforts a challenge. The team relies on email and teleconferences and this excerpt describes how one academic researcher feels the logistics impact communication:

> Although you don't want to spend a lot of your grant money on travelling to bring everybody together all the time, it would certainly help to solidify a team and get people more comfortable and in a working kind of relationship. That said, you can't get everybody together all the time anyway but I think there is - I think you do lose something when you can't often be face-to-face when you need to be.

It was identified by several participants that their role in the project and resultant expectations for individual and organizational participation were not explicitly communicated or established at the beginning of RePHS. Participants were subsequently unsure of their own role and of the role of their organization in the project which made it

challenging for engaging and participating in the project to date. When asked to describe their role in the project, one decision-maker provided the following response:

> Part of the reason that I have difficulty answering the question you just asked is because without having been part of you know a large collaborative research like this one and without having anything tangible up-front, in terms of expectations. I mean I know there was some, there was some email information going back and forth and there was a little bit of introductory material, but I have to admit, I don't really know what is expected of me.

A couple academic researchers highlighted a related challenge in communication processes for a large team: making sure every member of the team feels engaged and motivated throughout the project. It is important to find a balance between communicating enough to engage people and not too much so as to overburden them over the course of the five-year project. The following excerpt summarizes this communication challenge:

> I do think it's a balance right, because you don't want to overburden people. But you want to keep them engaged. There are different ways, I think; you can try to get people engaged. One is that there would be a clear role for them to play on a particular piece of the project; so is that coding data, is it interpreting what the codes are for the data that's being coded? Is it giving feedback on the research questions, is it working at some relationship that you want to get some data from? Is it collecting data? Like what are the different pieces and how do you engage your people. And I think that is a challenge. For any kind of team, not just this one; how do you engage people that have different skill sets? It is a real art to try to engage that many people. (Academic Researcher)

This section provided a summary of the challenges identified at the team level impacting participant engagement in the collaboration. Challenges were faced in melding the academic and practice worlds, effectively communicating within the team, and establishing role clarity.

Challenging External Influences

Moving beyond the level of the RePHS team, challenging external contextual factors were identified. The challenge was mainly related to the provincial political changes happening since the onset of the RePHS project and was primarily identified by the decision-maker researchers. Its impact was described to be mainly at the level of RePHS project progress. Within the "dramatically" changing political landscape one decision-maker stated that, "this project this going on at a slow and steady pace" which causes concern for trying to "trying to keep [the research] relevant."

The impact of the political changes and main priority of the Health Authorities being client services and not research was also linked to participation in the research project. The decision-makers cited valuing research and that it is challenging to incite this same value in their colleagues within their organizations. It takes time to engage in research and decision-makers shared that allocating the time required for them to participate in RePHS and also encourage participation of their colleagues in their organization is difficult. The following excerpt highlights the valuing and potential for research yet the challenge faced in their organization:

> Well I think there's a lot of potential. Just with the external events that are going on, the political events, it's caused some challenges. There have been some delays. It's been a lot more difficult to get our Health Authority folks, our staff, engaged in research. They are just, their minds just are elsewhere. And they are consumed with other work. (Decision-Maker Researcher)

Structures and processes that challenged collaboration occurred individually related to workload and at the team level as a result of melding academia and practice, communication, logistics, and role clarity. Externally situated challenges were the result

of the changing political landscape in BC and impacted project progress and engagement. Participants were asked to share challenges they had faced and to then offer strategies for moving forward in the RePHS project. These strategies are described in the following section.

Strategies for Moving Forward in RePHS

Participants identified strategies for promoting team member engagement in the RePHS project and for facilitating the research project's processes and progress. The strategies presented below are structures and processes that should continue to be utilized, structures and processes to improve on as the project moves forward, and mechanisms for sustaining momentum.

Structures and Processes to Continue

Both academic and decision-maker researchers agreed that the regularly scheduled team meetings were beneficial for moving the project along and for providing regular updates regarding research progress. Maintaining the advanced scheduling of the meetings and having them following other CPHFRI-related meetings were other important suggestions heard from participants. These meetings offer the opportunity for debate and discussion regarding the research project as well as for building relationships and encouraging participation. One academic researcher shared that not only regularly scheduled team meetings were important, but that the research staff should also continue having Liaison and Advisory Committee meetings as on a regular basis:

> We have team meetings which I think is really good. Just keeping regular meetings going....The Liaison Committee, which is a small group of people, then

> there's BC and Ontario, each meet separately, and then there's the whole team, and then there's the whole team plus the Advisory Committee. Keeping those going and you know, the whole team can't meet very often but having one or two opportunities in a year to do that.

Scheduling of meetings on a regular basis and well in advance was the primary team process that participants suggested maintaining as the project moves forward.

Structures and Processes that Could Be Improved

Suggestions made by participants for structures and processes that could be improved upon as the RePHS project moves forward were primarily related to communication and establishing clarity in roles and objectives. Interesting to note is that when asked, a few participants articulated that "things are fine for now" and they had no suggestions for how the project could be improved at the point in time of the interviews.

Several participants, both academics and decision-makers, proffered that research updates should occur frequently and be framed for their target audience; no definition of "frequent" was provided. Decision-makers requested that research updates be concise as well as written in a format that would allow them to share the information with their organizations without having to translate the messaging. It was suggested that communications that were destined for audiences external to the RePHS team be collaboratively created and concise; academics and decision-makers should work together to create and disseminate the research updates and project information. This is highlighted by the following excerpt:

> I guess just some really concise one-page descriptions of things. 'What is CPHFRI or RePHS', for example. What is the purpose of this particular project, and what is needed from the Health Authorities, in a really concise bottom-line format, so that it facilitates [other people within the Health Authority] understanding what is being asked of them and what the purpose is. I find a lot of

> my time, when I get involved with a request, is spent translating the request. (Decision-Maker Researcher)

The newsletter is a strategy that was well received by participants and it was suggested that these include more information regarding project updates in both BC and Ontario. An interesting suggestion regarding these research updates was made by one decision-maker:

> In all of those meetings we hear a little bit about the results, but then we are told to go and see the report that was posted on that [SharePoint or CPHFRI] website. Well, I always intend to go and see those reports, but I rarely do. So to receive a one-page summary with a link inside an email, it would be great.

The link between regular updates and engagement was made by one participant, who suggested that research updates sent to the team more frequently would be an opportunity to engage team members who may not be optimally contributing:

> I think how you get to [engaging people throughout the project] is by more frequent updating: this is what we are doing now and here are the people that are doing X, Y, and Z…may be really helpful. And maybe we are completely missing someone, so we want to hear about that as well, right? So that you are kind of pointing out, here are some people that have the expertise but we don't want to preclude the fact that there may be other people out there. (Academic Researcher)

Continuing with the importance of maintaining regular contact with team members, it was suggested that the principal investigators and research staff "check-in" with individual team members to both engage and re-engage those who may not be regularly participating. One academic researcher offered the following suggestion, based on personal experience, to the Principal Investigators and research staff for increasing team member involvement in the project:

> Just look at where we are at with the grant, where we are in terms of the project, and say, okay well where does [team member name] fit now? Where are they

> now? We haven't heard from [him or her] in awhile; let's figure out when we are at a stage where we could use [his or her] input….personal engagement. Pick up the phone and say, let's have a chat. Give an update on where [the project] is, and look at what the [team member] might want to contribute, if [they] do want to contribute, what that might look like.

As previously mentioned, it was suggested that the research staff use one email address to communicate these regular updates to team so that when academics and decision-makers are reviewing their email inboxes, it is obvious that the email is from RePHS.

Several participants articulated that roles of team members and organizations, e.g., the Health Authorities, and expectations for these roles should have been more clearly established and communicated to the entire team early on in the project. Going forward, it was suggested that roles be re-visited on a regular basis as the project evolves, and that a process be established for providing on-going feedback regarding roles and level of contribution. It is interesting that academics and decision-makers articulated this suggestion using different language. One academic offered the following process suggestion:

> And I think that how you engage people is to verbalize to them what you think their expertise is and how they could contribute. And it's hard to do when you have got forty-plus members on the team. And I also think it's good that people have a very clear role of what they are doing versus this is a huge project, and we need you to do everything all at once, and please can you take the lead on paper, do the analysis, and also be collecting data for this study. I mean, that's just, that's asking a lot.

While a decision-maker stated the following:

> I guess to put it into performance management language, is that I don't have a lot of feedback to work with. I don't know whether people are pleased or otherwise with what I'm doing and how I'm doing it, or how much I'm doing. It would be really helpful to have some constructive feedback.

Suggestions for improving the communication structures and processes within the project were linked to engaging team members and those external to RePHS. Making immediate improvements to engage academics and decision-makers is important as is taking time to re-build and sustain momentum, as described in the following section.

Mechanisms to Carry Project Momentum Forward

Several participants recommended that face-to-face team meetings should occur regularly and that a large meeting with the entire RePHS team should occur "soon" to re-visit the original research plan, revise and edit the plan if needed, and create a "strategic plan" for next steps. Participants did acknowledge that project logistics prevented having regular monthly team meetings face-to-face, but that another large meeting of the team similar to the CPHFRI Methods Symposium that took place in 2009 would provide an opportunity to re-build project momentum. One academic shared the following:

> From time to time when we have been able to bring together team members [face-to-face]…that really helped. You just get a synergy there and an excitement that I think you can't get on a teleconference.

The practicality of having this meeting and potential outcomes from bringing the large group together again at this juncture in the project are highlighted in the following passage:

> One thing that would be wonderful is to have a discussion that includes the academic and the decision-makers and kind of map out the next few years and with particular attention to where the health authorities will be called upon….almost like a strategic plan. I know this is hard to predict, but it would be nice to try to have that discussion. It should be face-to-face…once a plan was developed it could be captured and then referred to of further developed by phone or email. (Decision-Maker Researcher)

Strategies suggested by participants for promoting team member engagement and for facilitating collaboration in RePHS highlighted the importance of regular communication and interaction amongst team members. These strategies could be incorporated to support the evolution of the collaborative team as it moves through the next phases of the research project. The following sections describe the benefits of and general facilitators for success in collaborative research that participants identified.

Benefits of Collaborative Research

Benefits of collaborative research at the individual, project, and broader systems level were identified. Participants shared benefits specifically related to participating in RePHS as well as benefits of collaborative research in general. These benefits, articulated by both academic and decision-maker researchers, are presented in this section.

Individual Capacity Building

The RePHS project offered opportunities for individual capacity building that were identified by both academic and decision-maker researchers. Increased personal knowledge and understanding of the research process, public health practice, and public health research were cited as benefits to the collaborative experience.

Academic researchers articulated that learning from other academics as well as decision-makers on the team was a benefit of participating in the collaboration. They cited gaining knowledge from other academics regarding methodologies and conducting public-health related research, while decision-makers were identified as resources for

learning about the public health systems and services in BC and ON. Beyond gaining knowledge and skills, this learning also broadened some of the academics' research interests. This broad learning was described as follows:

> I learn from other people's experience and perspectives….it helps me to understand all the pieces in such a large project. [This project] opens my interest in more areas than I would have been privy to before. Now I am paying attention to others' research and other articles that describe or are related to public health and population health work. And from my perspective as an individual researcher, I am learning from others' expertise, literature, and knowledge.

Decision-makers articulated that the project offers an opportunity to learn about research that wouldn't have been otherwise available, as well as a forum for engaging with fellow decision-makers. The following excerpt highlights one decision-maker's experience:

> I have benefited just from having the contact with the academic researchers. I have learned a lot. For example, we had the [CPHFRI Methods Symposium] where we learned about different research methods and I found that really beneficial. And even just the discussions with academic researchers and the other decision-makers when we are talking about the design of the project and research questions, and what the literature is saying….in my normal day-to-day job I wouldn't really do that.

Both academics and decision-makers shared that the process of engaging in collaborative research itself was an area of learning. Even if they had participated in previous collaborative projects, the size and nature of RePHS offered a new experience. An academic researcher described the following experience in learning to work collaboratively:

> And working with different decision-maker groups, that is a skill in itself. How do you work with decision-makers? How do you, as a researcher, conduct meetings where you need to hear from decision-makers? So, sitting in those meetings with multiple decision-makers and researchers present, how do you

> engage each other so that it becomes a fuller process? It's a deeper learning for everybody.

Beyond building capacity for research methodologies and knowledge regarding public health within the academics and decision-makers, a few decision-makers shared that participation in the project influenced, inspired, and validated higher level thinking about public health practice and research. The importance of this is described here:

> I think that there is a certain amount of inspiration that comes, and I guess it's in a sense reinforcement of the approach that we're taking by working with like people. There is a lot of reflection that goes on and sharing that reinforces or validates that work that we are doing among each other. That's an important aspect. (Decision-maker Researcher)

Influencing higher level thinking was achieved through two mechanisms: the process of bringing academics and decision-makers together to engage in discussions about public health services and systems, and through asking important research questions about policy decisions. The following excerpt highlights this:

> I'm appreciating that the research project is asking some pointed questions about the policy decision and the provincial differences in the process of implementation of the public health standards, those methods and messages from government to health care versus the Core Functions in BC. It's bringing clarity to the differences and when you begin to understand the differences you start to – or at least I do – openly consider why we are doing what we're doing, or how we're doing it and whether there is a better way to do it. (Decision-maker Researcher)

The opportunity to build individual capacity in this collaborative experience is coupled with benefits that occur relationally between project team members.

Expanding and Strengthening Relationships with Others

Academics and decision-makers equally articulated the importance of the RePHS collaboration for strengthening and expanding relationships both within and outside RePHS. Since being involved in RePHS, relationships have developed, networking has

occurred, new links have been formed between academics and decision-makers, and "spin-off" relationships have developed. Spin-off relationships were defined as relationships that have led to research endeavours between team members that occur outside of RePHS or CPHFRI. A decision-maker described the result of relationship evolution as follows:

> I think that's a benefit, to get the networking and the connections and the sharing and seeing the researchers…they have now become my resource base. They have also connected with me on other pieces, because I have said something that triggered something for them, and two weeks down the road I get an email or something. Networking and sharing and developing those relationships [is a benefit].

Academic researchers described the importance of making connections with decision-makers in public health which could develop into working relationships, both across various CPHFRI projects and in future research. These connections were viewed as opportunities to "build synergy" as a result of including "key" academics and decision-makers in RePHS and other CPHFRI projects. Collaboration was also articulated as providing an opportunity for those involved to build relationships that formed a "bridge" between research and practice and between practice and practice, as decision-makers had the opportunity to talk to their peers in other Health Authorities.

Working collaboratively across academia and public health practice builds important relationships between individuals and was viewed as a benefit by participants in this project.

System Level Benefits

Beyond the individuals on the team and the RePHS team itself, are the benefits that were identified for the larger public health system as a result of the collaboration.

Participants from both academia and decision-making articulated that the large multidisciplinary program of research will yield rich and relevant results that will benefit public health systems, services, and interventions. The multiple perspectives arising from the RePHS team members who span numerous public health disciplines provides a research environment that will yield breadth and depth of relevant results. The opportunities to expand public health research and PHSSR were also cited as important advantages of collaboration between academics researchers and public health practitioners and policy-makers. This is evidenced by the following passage:

> Research in public health needs to be increased. It needs to be closer to practice, answering practical questions, and how these practices are implemented. I find so many challenges when I try to bring innovation in public health or modify programs to be more evidence-based. The field of public health research has expanded a lot but it is still very small…so it's very important to increase it, to increase the quality of it. (Decision-maker Researcher)

Academics and decision-makers equally felt that collaborative research also has the potential to advance population, public, and individual health. The relevant, immediately applicable results that are created throughout and at the end of RePHS can be applied to public health practice across Canada. This important benefit of collaborating and working across more than one province is viewed by one academic researcher in the following way:

> Being able to feel like in some way we are making a larger contribution to public health or the health care system. To me that would be the benefit of working in larger groups. And especially if it's something that is affecting all of Canada; then obviously the more that there's a pan-Canadian representation the more significant those findings are.

The potential for "transforming" the public health system and the importance of combining academics and decision-makers in a collaborative approach was summarized in the following way:

> From a decision-maker, practitioner, administrative role, I think it is critical that we have connections with researchers and I think that we need to work really closely together in order to help each other help transform the system, or make the system better to improve the health of our population. (Decision-maker Researcher)

The benefits of working collaboratively identified by participants spanned the individual, project, and systems levels. Opportunities to learn from one another, build relationships, and ultimately impact the public health system in BC and Canada were identified as benefits of working collaboratively across public health academia and public health practice and policy.

General Facilitators of Successful Collaborative Research

In addition to issues regarding engagement described above, the following general facilitators of successful collaborative research were described. The researcher did not define the word 'success' so as to not limit participants' perspectives on what they felt was success in collaborative research and how this could be achieved. What is presented below are structures and processes that were identified as facilitators for success in collaborations between academia and public health practitioners and policy-makers.

Structures and Processes to Build and Maintain Relationships

When asked for their ideas regarding general facilitators for success in collaboration, every single participant made reference to structures and processes that supported the building and maintenance of relationships. Mechanisms that were previously mentioned as enablers for engagement, such as regular team interactions and face-to-face meetings were equally valued and suggested by both academics and decision-makers for achieving success. Decision-makers cited value in bringing together a team that includes people who have previously worked together. For those who do not know each other prior to the collaboration, forming new relationships requires project leaders who provide opportunities to for team building and team members who take responsibility for capitalizing on these opportunities to get to know their peers.

The creation of a respectful environment in which all team members feel valued was identified by half of the participants, with several decision-makers highlighting this important structure. Establishing relationships that are open and where respect for one another is the norm, so that all members feel valued and listened to were important processes suggested as facilitators for collaboration. A respectful environment structure that facilitates respect was articulated to also facilitate the formation of an equal partnership in the collaborative relationship. One decision-maker summarized this concept in the following way:

> I think that the most important facilitator is an equal partnership. A lot of times we can get roped into a so-called collaborative project but really the decision-makers play more of a minor role. I think RePHS is a good example where I feel like [decision-makers] really are an equal partner and have had as much say in the decisions as the academic researchers. The way we do that is through the ongoing communication and through the building of relationships and face-to-face

> [contact]. The openness of bringing issues forward and being able to talk to the [team members]…when you have that partnership and that relationship established it helps us to be successful.

A final relational aspect of a successful collaboration that was identified by several academics and a couple decision-makers was the importance of strong, steady, and creative leadership. Leaders who are able to foster collaboration through embodying trust, respect, and flexibility and in turn demonstrate and promote this within the team were articulated as facilitators for success. It was deemed helpful by one academic researcher for the principal investigators of a collaborative project to have worked together in the past. Leaders who are sensitive to the needs of the team and can foster a "go with the flow" mindset to allow for emerging initiatives to be explored were cited as important by academics and decision-makers. One academic researcher described this leadership trait as being able to "read the waters of their team"; leaders being aware of global attitudes and feelings on the team, knowing what is happening between and among people and whether or not tension exists at any point in time.

Structures and processes that are in place to build and maintain relationships amongst those participating in the collaboration were described by all participants as important for achieving a successful collaborative endeavour. These include suggestions for maintaining regular contact, creating a trusting and respectful environment, and having leadership that is flexible and creative.

Multidisciplinary Team Capacity

Participants described the importance of bringing together a collaborative team that includes multiple disciplines and team members who have diverse experiences, knowledge, and skills. This multidisciplinary approach to creating a collaborative research team ensures that numerous perspectives are available to contribute to the research and subsequently optimize the relevancy of results. Academic and decision-maker researchers equally articulated the importance of a diverse team with involvement of all partners throughout the research process to achieve these relevant and rich results. This important suggestion for creating a successful collaboration is summarized in the following excerpt:

> Philosophically, [collaboration] is how I see creating, maybe not new knowledge, but more appropriate and relevant knowledge. And that, you know, the world is a complicated place, and if we are going to advance public health, population health, individual health, I don't think it can be from a single discipline or even you know, a couple disciplines. I think you have got to have a panoramic disciplinary view of things and have a team assembled that reflects those lenses. (Academic Researcher)

It was acknowledged by participants that in creating a large, multidisciplinary team such as RePHS, allowances need to be made in other areas such as the amount of time needed to develop relationships, gain momentum, incorporate all perspectives, and reach consensus on important decisions. It also takes dedicated research staff who are able to organize and coordinate such a team, and team members who are committed to the process. One academic researcher shared the following perspective:

> Clearly the scope of work couldn't be done by a smaller group or a more focused disciplinary group. So the benefit is, that while it takes a long time and while the funding timelines at five years aren't really long enough…we really need longer….There is no way that we could accomplish this kind of [research] without

> having the scope and the breadth of the team that is now on RePHS. So that is great.

Important for combining multiple disciplines and skills is the establishment of team roles that respect this diversity. Participants felt that the roles that emerge on a team should be negotiated early on and throughout the collaboration. Establishing roles for certain parts of the research process is important, such as collecting or analysing data, or taking the lead on a paper, but the importance of flexibility should not be forgotten. This process was primarily articulated by academics, who felt that flexibility in the research project is important and that structures such as roles should be negotiated as the research evolves. It is also vital for success that in negotiating roles, respect for individual's skills and knowledge bases that are brought to the collaboration is upheld. This facilitator for success in collaborations is illustrated in the following quote:

> It's not just at the start. I think these things are constantly being negotiated. It's an iterative process. I think as long as expectations are clear and people understand what their role is and they feel like it's okay to ask questions, and they feel like they are listened to and that their advisement or their input is valued equally, then I think it's going to work in terms of a collaborative process. (Academic Researcher)

Combining multiple disciplines in one team requires supportive communication structures and processes to facilitate the relationship building, role establishment, and a collaborative approach to engaging in the research process. Suggestions made by participants for communication structures and process to support success in collaboration are described next.

Communication Structures and Processes

As highlighted by participants when asked about their engagement in RePHS, the importance of supportive communication structures and process was revisited by both academics and decision-makers as facilitators for success in collaboration. Supporting collaborative work through the use of multiple communication strategies to meet different needs of team members was identified by a couple academics and several decision-makers as important for success. Decision-makers suggested putting in place processes to share succinct, relevant, and immediately usable information on a regular basis, such as emails with one-page summaries and newsletters. Interesting to note is that one academic researcher highlighted the importance of recognizing the way in which academics and decision-makers communicate and ensuring that there are structures and processes in place to meet their different communication needs:

> Frequent and open communication that best suits the needs and the preferences of the team…can take on different forms as long as it is appropriate….When you have a smaller [collaboration], particularly at the community level, your community partners are going to have a way of working that you need to integrate into….I think you have to be open to communicating in [the way that is] the usual standard operating procedures for your partners.

Although this suggestion was made based on experience working with smaller collaborations at the community level, similar ideas were offered for larger collaborations such as RePHS by "offering multiples ways to communicate…give people different ways of hooking in that meet their needs" (Academic Researcher).

Structures and processes that support regular communication with the team, such as regular, planned opportunities to interact were suggested by several decision-makers. This could be in the form of teleconferenced or web-based meetings occurring on a

mutually agreed-upon schedule, but they should be augmented by face-to-face meetings as often as possible. As previously mentioned, this type of supportive communication process was also identified as enabling successful relationship building and maintenance. The following interview excerpt highlights this concept:

> So when it comes to identifying a facilitator for success, I'm thinking that with respect to the process pieces that the best thing that has happened so far and that should keep happening is that every once in a while you get people together face-to-face….and you re-address where we're at, how it's going for people, what could be done differently. Teleconferences are great. The standard communications that come out are helpful….But, I also think that when there's this many people involved, and the project goes on for as long as it does, there the need to touch base [face-to-face] again periodically. (Decision-Maker Researcher)

Communication structures and processes can also support the open, respectful, and trusting environment articulated by participants necessary for engagement and collaboration success. This engagement and success is also achievable through team members sharing common goals and a common vision, which is described in the following section.

Clear, Common Vision and Goals

Over half of the participants cited the importance of bringing together a collaborative team which includes members who share a common vision and goals and who are committed to the project. Including academics and decision-makers who are interested in the broad program of research and are subsequently willing to participate and stay engaged are keys for success in collaboration. One academic articulated the importance of having team members who are committed to the research purpose and share common goals supersedes the structures and processes that support the collaboration:

> A joint common interest, like a clear, common buy-in to the purpose and the objectives, I think that's huge. You know, if the researchers are talking about one set of goals and the knowledge users another, or whatever, honestly I find that the mechanics or making the collaboration work are less relevant when everyone is on the same page with respect to having their objectives met.

Decision-makers also suggested that this is important for success in collaboration, and focussed on linking academic and decision-makers' visions for research outcomes and the impact of these outcomes in the broader public health system. Collaborative teams should include researchers who have an interest in the research and can stay focussed on the bigger picture and long-range goals. Commonalities in visions and goals are also a factor for success in building relationships amongst team members and driving the research agenda. This is highlighted in the following excerpt:

> I think there is a common vision about the bigger picture of where we're trying to go. A bigger view of the public health world that we are all committed to, this vision of a new population health, and I think that's been helpful, we tend to have a similar long-range vision. And that's helped shape the agenda but it's also, I think, helped build the network. (Decision-Maker Researcher)

Achieving success through having team members who share a common vision and goals prior to entering the project is important, as is articulating these commonalities and conveying well defined, clear program expectations early on in the project. Decision-makers highlighted that the purpose and plan for the research project should be clear at the beginning and re-visited as the research evolves, which could be supported by documented guiding principles. Academics described the importance of articulating what can be expected and what expectations are at the onset of the project, and using project guidelines and principles to support this process. Having written support for a vision,

goals, and expectations can be extremely useful in projects as large as RePHS, as identified in this passage:

> [Written documentation] is actually imperative, because I think in this size of team you have to, there is no way that we can remember conversations….it is very, very helpful…we know what our governance principles are. We don't have to recreate them, we can affirm them, and we can say that these principles apply now to this project. (Academic Researcher)

What is also important for success is agreeing upon any guidelines that are established once the team is formed; partners need to mutually establish any goals or expectations as highlighted here:

> Terms of reference, operating principles…established and agreed upon at the beginning of the endeavour, so that everyone is aware of what the parameters and responsibilities and commitments are….sort of rules of engagement. (Academic Researcher)

The importance of a clear, shared vision with mutually agreed upon goals for achieving the vision was identified by participants as a facilitator for success in collaborative research. To help in achieving this, written documentation could be used to support establishment of guiding principles and terms of reference which can be referred to throughout the project when needed.

Chapter Summary

This chapter presented study findings related to the research questions outlined in Chapter 4. These questions focused on the experiences of academics and decision-makers participating in a collaborative research project and the structures and processes that positively and negatively influence the engagement of partners on the collaborative research team. The purpose of this study was to explore and describe these experiences

and to identify structures and processes that act as enablers or barriers for all partners on a research team as they engage in collaborative research and as a result, the findings were presented using concepts that were identified by participants in support of the researcher's purpose.

The chapter began with a description of the context that surrounded this study as it had changed substantially since the conception of this research; its description was deemed important for contextualizing the findings. The findings were then presented in a manner that depicts an evolution of the collaborative RePHS project, beginning with individual motivations, expectations, and experiences and followed by structures and processes that enabled engagement and presented challenges as the project began and progressed through its first two years. Participants were then asked to look into the future and offer strategies for the RePHS project as it embarks on three more years of collaboration. The researcher also wanted to look more broadly at IKT and asked participants identify general benefits of collaborative work in public health policy and provide their thoughts on general facilitators of successful collaborations. Tables 2 and 3 present a summary of the key themes for each of the two main research questions.

Table 2

Summary of Key Themes and Concepts Related to Research Question #1

Research Question: What are the experiences of academics and decision-makers participating in the first two years of an integrated knowledge translation program of research?

	Concepts	Themes
Expectations Regarding Participation	Role Expectations	• Academic researchers take on traditional academic roles • Decision-maker contributions inform research and knowledge translation processes
	Contribution Expectations	• Level of project involvement is dynamic, negotiated, and individually based • Decision-maker researcher contributions are heard and taken seriously
	Project Expectations	• Clear, transparent expectations are set and continually revisited for program
Motivations for Participation	Personal Motivators	• Research project is interesting • Working with others who value evidence-based decision-making • Building relationships • Learning from other team members • Previous relationships with team members • Respect for research team and project leaders
	Practice and Professional Motivators	• Desire to contribute to research with public health practice related outcomes • Bridge gap between public health research and practice

Table 2 (*continued)*

	Concepts	Themes
Experiences	Positive	• Feelings of excitement and enjoyment about participating • Excitement that this collaboration has potential to impact and transform public health system • Participants are proud and feel valued as a members of the team
	Concerns	• Frustrations early on in project in developing formal structures and processes for communication and team functioning • Feelings of guilt regarding level of participation and contributions
Benefits of Collaborative Research	Individual Capacity Building	• Increased personal knowledge and understanding of research process, public health practice, and public health research • Learning about the process of collaborative research • Inspires higher level thinking about public health practice and research
	Expanding and Strengthening Relationships with Others	• Building relationships within the project that lead to opportunities inside and outside the project
	System Level Benefits	• Project yields rich, relevant results that benefit public health systems, services, and interventions • Impact on population, public, and individual health

Table 3

Summary of Key Themes Related to Research Question #2

Research Question: What structures and processes positively and negatively influence the engagement of partners on the collaborative research team?		
	Concepts	**Themes**
Structures and Processes that Enabled Team Member Engagement (Positive Influencers)	Supportive Organizational Structure and Staffing	• Organized, reliable, accessible, and knowledgeable research staff • Regularly scheduled team meetings • Sufficient funding to allow for face-to-face meetings and conference travel
	Creation of an Open, Supportive, and Flexible Research Environment	• Environment that fosters open lines of communication for establishing role clarity and attaining consensus during decision-making • Team members strive to understand each other's roles and worlds • Flexibility in meetings to allow for theoretical and practical debates
	Effective Communication Structures and Processes	• Use of monthly newsletters, short electronic communication, and reminders regarding meetings or upcoming events • Maintaining regular ongoing communication with succinct updates, e.g., one pager summaries • Use of one single generic project email, e.g., rephs@rephs.ca
	Strategies to Support Relationship Building and Maintenance	• Meeting face-to-face early on in the project and then as often as project funding and logistics allows for

Table 3 (*continued*)

	Concepts	Themes
Structures and Processes that Enabled Team Member Engagement (Positive Influencers) (*continued*)	Valuing and Respecting Team Members	• Listening to the voices of all participants in the project and incorporating suggestions into research process • Informing decision-maker partners of research opportunities internal and external to project • Research staff and principal investigators are aware of and appropriate utilize skill sets brought to team
Structures and Processes that Presented Challenges for Collaborative Research (Negative Influencers)	Challenging Individual Demands	• Individual workload demands impact time available for project
	Challenging Structures and Processes at the Team Level	• Melding of research and practice perspectives and worlds • Communication structures not used to full capacity, e.g., SharePoint website • Difference between research and practice languages impacts communication • Decision-making with a large, geographically dispersed group • Role clarity and expectations for individual or organizational participation not established at project outset • Making sure every member of the team feels engaged and motivated

Table 3 (*continued*)

	Concepts	Themes
Structures and Processes that Presented Challenges for Collaborative Research (Negative Influencers) (*continued*)	Challenging External Influences	• Changes in political or provincial public health structure influencing participation in research • Keeping research topical, relevant, and up to date in context of fast-paced changes in public health
Strategies for Moving Forward in RePHS	Structures and Processes to Continue	• Regularly scheduled team meetings
	Structures and Processes that Could Be Improved	• Frequent research updates that are framed for target audience and succinct • Include more information related to research updates in monthly newsletters • Principal Investigators or research staff 'check-in' regularly with individual team members • Establish role clarity early in project and re-visit and provide feedback on roles and contributions throughout project
	Mechanisms to Carry Project Momentum Forward	• Large group face-to-face meeting to re-visit original research plan, revise and edit and create a plan for moving forward

Table 3 (*continued*)

	Concepts	Themes
General Facilitators of Successful Collaborative Research	Structures and Processes to Build and Maintain Relationships	• Regular team interactions • Meeting face-to-face as often as possible • Establishing an environment where respect is the norm • Strong, steady, and creative leaders that embody trust, respect, and flexibility
	Multidisciplinary Team Capacity	• Multiple disciplines on the team to have multiple perspectives contributing • Respect for diversity on team • Establishing roles for multiple disciplines, skill sets, and knowledge bases
	Communication Structures and Processes	• Regular communication with team • Utilize multiple strategies to meet needs of team members • Establish processes to share succinct, relevant, and immediately usable information • Regular, planned opportunities to interact
	Clear, Common Vision and Goals	• Team members share a common vision and goals • Team members are interested in and committed to the research • Articulating vision, goals, and expectations early in project and re-visit these as project evolves • Written documentation of vision, goals, and expectations

The next chapter presents a discussion of the study findings. Literature is used to support this discussion, with particular emphasis on IKT process from a systems perspective and the concepts of relationship building and maintenance, communication, multidirectional knowledge sharing, and capacity building. These concepts are used as a guide for better understanding the findings as they relate to the evolution of the RePHS collaborative project.

Chapter 6: DISCUSSION

The primary purpose of this final chapter is to present a discussion of the major study findings in relation to their importance within the larger scope of collaborative research and IKT in PHSSR. In the first section, the findings are related and contrasted to the IKT processes and concepts explored in the literature review as well as in the research purpose and objectives. An additional concept that emerged from the findings but was not initially identified from the literature is also discussed. Interwoven within this discussion is the concept of the evolution of a collaboration that emerged through data analysis. Study limitations and challenges, and recommendations for collaborative PHSSR projects and future research are then discussed. The chapter concludes with reflections on the KT processes the researcher engaged in throughout the study.

The purpose of this study was to explore and describe the experiences of academic and decision-maker researchers participating in a public health IKT program of research. The research questions that were asked guided the objectives of the study: to describe the experiences of participants in a public health IKT program of research and identify structures and processes that act as enablers and challenges in collaborative research. Given that current IKT literature has explored facilitators and barriers extensively and that several authors have called for practical, explicit, and context and partner-specific strategies for collaboration (Bowen & Martens, 2005; Denis et al., 2003; Golden-Biddle et al., 2003; Ross et al., 2003; McWilliam et al., 1997), the researcher also desired to identify strategies for successful collaborative research in PHSSR.

The Evolutionary Process of Collaborative Research

Several concepts emerged during the analysis of the data that supported the concept of IKT as a process that evolves within a broader system over time. Individual expectations and motivations for participating in the collaborative research project influenced individual experiences of academics and decision-maker researchers as they worked through the process of engaging with each other. The deliberate set of interactions that took place as the partnership between these two types of researchers was initiated and built was found to be dynamic, non-linear, and influenced by factors at multiple levels.

An exploration of the academics and decision-makers' expectations, motivations, and experiences throughout the first two years of the collaboration demonstrated the influence of individual perspectives, priorities, and prior experiences with IKT on how they viewed their role, contributions, and interactions with each other. Differences in previous experiences with collaborative research between the two types of researchers (academic and decision-maker) were balanced by similarities in their expectations: that their level of involvement would be dynamic, negotiated, and individually based on their knowledge and skill sets, and would fluctuate based on the research project's process and progress. The researchers also acknowledged that the broader public health and political context acted as a challenge when attempting to collaborate across the academic-public health policy gap. The recognition by the researchers of a dynamic, negotiable role influenced by the broader team and political context parallels Lapaige's (2010) work in

which she found that IKT is a context-sensitive phenomenon influenced by factors at the individual, community, national, and global levels.

There is a belief that the underlying processes of IKT are social processes and may require change at the micro (individual), meso (institution or organization), and possibly macro (system) levels for success; linkages established through collaboration and organizational learning can support the complex management required to bring together the multiple actors involved in these processes (Lapaige, 2010). The current study found that the processes required to effectively engage academic and decision-maker researchers on the same team demonstrated the concept of IKT being embedded in social processes as well as being an undertaking that requires changes across individual, team, and organizational levels. Concepts that emerged as enablers for engagement in collaboration occurred across intrapersonal, interpersonal, and organizational social processes. Intrapersonal enablers included hiring research staff that are reliable and accessible and building a multidisciplinary team with a diversity of skills, knowledge, and experience. Interpersonal enablers included articulating a clear, common purpose for the collaboration, negotiating role clarity, having regularly scheduled team interactions, and attaining consensus in decision-making. These enablers were fostered by processes at the organizational level, including establishing an open, supportive, and flexible research environment which allowed for trust and respect to be built as the two types of researchers strived to understand each other's perspectives and worlds. Further to this is the importance of communication processes that nurture the interaction of all team

members, such a regular updates, monthly newsletters, and electronic communications for reminders.

As collaboration between academic and decision-making researchers is initiated, strategies to support relationship building are vital for building momentum and synergy; meeting face-to-face early on and throughout the IKT project allows for important linkages to be established between individuals and organizations. Relationships are also built through listening to the voices of all individuals in the project, valuing and respecting team members, and being aware of and appropriately utilizing the skill sets that are brought to the team. Nurturing the individual researchers that are brought together and the inter-personal relationships that develop as the collaboration evolves is important as is addressing the IKT process factors at the team level.

Lapaige's (2010) *meso* or *organizational* level can be viewed as the RePHS research team itself or the organizations which the individual researchers represent. Team based challenges and subsequent areas for growth, learning, or change within the team were more numerous than those occurring at the individual or broader systems level. They included melding of the research and practice perspectives and worlds, communication challenges stemming from language, workload, and organizational differences in academia and public health policy and practice, employing effective decision-making processes on a large, geographically dispersed team, and setting organizational level expectations for decision-makers who represent BC Health Authorities. These challenges highlighted the organizational learning that Lapaige (2010) believes needs to happen in order to successfully interconnect and engage in IKT.

Additionally, the challenges of melding the two worlds speak to the differences in public health practice, policy, and research cycles (Jansen, van Oers, Kok, & de Vries, 2010). The three domains have similar steps in their respective work processes (problem recognition, approach formulation, implementation, and evaluation) yet they are conceptualized differently and subsequently evolve at different rates and times during the calendar year (Jansen et al., 2010). This could result in disconnections between individuals in partnerships and present challenges when attempting to merge the domains in an effort to work collaboratively. At the level of the team, the development of a sustained synergy between the two types of researchers and the removal of any barriers, such as different languages, facilitates the collaborative process. The current study found that one of the benefits of engaging in the collaboration was the individual learning that occurred in the areas of research methods, public health policy and possibly most importantly, of how to engage in IKT; if effective communication and relationship building structures and processes are put in place, the two types of researchers can learn about each other and how to communicate effectively with each other. This environment will nurture the evolution of the collaboration and potentially lead to success in the IKT endeavour.

Outside the control of those involved in the collaboration are the broader political or public health policy influences on the IKT team or certain individuals participating in the team. As previously described, the changing political landscape in BC was cited by a couple of academics and several decision-maker researchers as having an impact on the progress of the research project as well as on the implementation of the framework that

the project had been brought together to study. Lapaige (2010) would describe this as an "upstream" determinant of IKT, although not quite at the level of a national or global influencing factor. This researcher concurs with this, but finds Lapaige's framework focused more on globally-based upstream factors and not helpful for understanding the impact of smaller scale provincial or local Health Authority changes on the IKT process.

When stepping back and using Lapaige's (2010) notions applied to the concepts that emerged from this study, support is found for the social processes that are inherent in an IKT endeavour and the importance of viewing collaborative research from a systems perspective is brought to light. Best and Holmes (2010) proffer that if a systems model is used to conceptualize IKT, then several assumptions are necessary: the system is a complex adaptive one, understanding the roles and actions of team members and how they are shaped and in turn shape the dynamic IKT system is important, and the element of a feedback loop in a systems-based model is critical. A systems model or approach is helpful for use in analyzing the RePHS project and its processes and structures to support collaboration. The key stakeholders or agents in the project (Principal Investigators, research staff, academics, and decision-makers) are active collaborators in the process, they represent organizations (universities and Health Authorities) willing to invest time and resources to the project, and the collaboration is an opportunity to achieve success in IKT in Canadian PHSSR (Best & Holmes, 2010). When viewing this collaboration, it is evident that it can be understood as a complex adaptive system; it is dynamic and constantly changing, there are smaller systems embedded within other interdependent systems, and the changes that occur in one part of the system could result in unexpected

changes in other parts of the system. This systems based view of the IKT process also encompasses key elements of widely accepted relationship-based KT models (Graham et al., 2006; Lomas, 2002); understanding roles and actions of partners and how they are shaped by context in the dynamic nature of IKT is vital for collaborative success. Structures shape, embed, and organize the relationships that exist between the multiple agents who each possess unique characteristics; these agents are tied together by an overarching system (Best et al., 2009). This system is comprised of the organizational structures, processes, and contexts brought by each of the individuals and the organizations they represent, as well as the broader research and public health contexts.

The importance of flexibility in the research project and ongoing negotiation of individual roles and project expectation expressed by both academics and decision-makers demonstrates their appreciation and acceptance of the dynamic nature of IKT. Academics more than decision-maker researchers felt that as the RePHS project evolves further, their roles and contributions should be re-visited and the Principal Investigators should provide feedback in these areas. This was also viewed as an important facilitator for success in the collaboration. Decision-makers highlighted the importance of and need for flexibility in overall research progress and process to accommodate the system level changes that occur in practice as well as flexibility on a smaller scale in team meetings, to allow for debate and discussion amongst the team. The flexibility and ongoing negotiation viewed as enablers for engagement in the collaboration as well as facilitators for success offer insight into the dynamic nature of IKT from the systems perspective.

This researcher sees the RePHS project as a system with multiple agents represented by the academics, decision-makers, Principal Investigators, and research staff, which are embedded within the system of the RePHS team itself, and the even broader public health practice and policy and PHSSR systems in BC and Canada. This embedded view of the collaboration (Figure 1) acknowledges the interconnectedness of the multiple systems and the interactions and processes that occur within and between each level (Best & Holmes, 2010). These structures and processes underlying the evolution of the partnership are fluid and interactional, influencing each other and subsequently how the individuals within the team interact.

The numerous structures and processes acting as enablers and challenges for engagement in collaboration are likely mediators of the interactions that occur among the multiple agents (academics and decision-makers), who each bring unique expectations, worldview, priorities, languages, and experiences to the project. Best et al. (2009) found that these individuals are tied together by a system. This researcher believes it could be academics as a system, decision-makers as a system, or the RePHS team as a system, which is shaped by culture, structures, processes, priorities, and capacities. Interesting supports for this were found in the current study. For example, academics and decision-makers often shared similar expectations of the project, thoughts on structures and processes that facilitated their engagement or offered challenges, and suggestions for successful collaborations indicating the presence of a whole system. But when there were differences between the two types of researchers, the majority of representatives of one of the types of researchers shared similar ideas. For example, one of the enablers for

decision-maker engagement and subsequently a strategy for successful collaboration that was articulated by all decision-makers was an environment in which team members are valued and respected. This concept was not a key facilitator for academics; instead, almost all academics referred to having negotiable roles and levels of contributions as facilitators for engagement and success in IKT. Thus, it could be argued that the academic group as one agent within the RePHS team share expectations, as do the decision-maker group as a second agent.

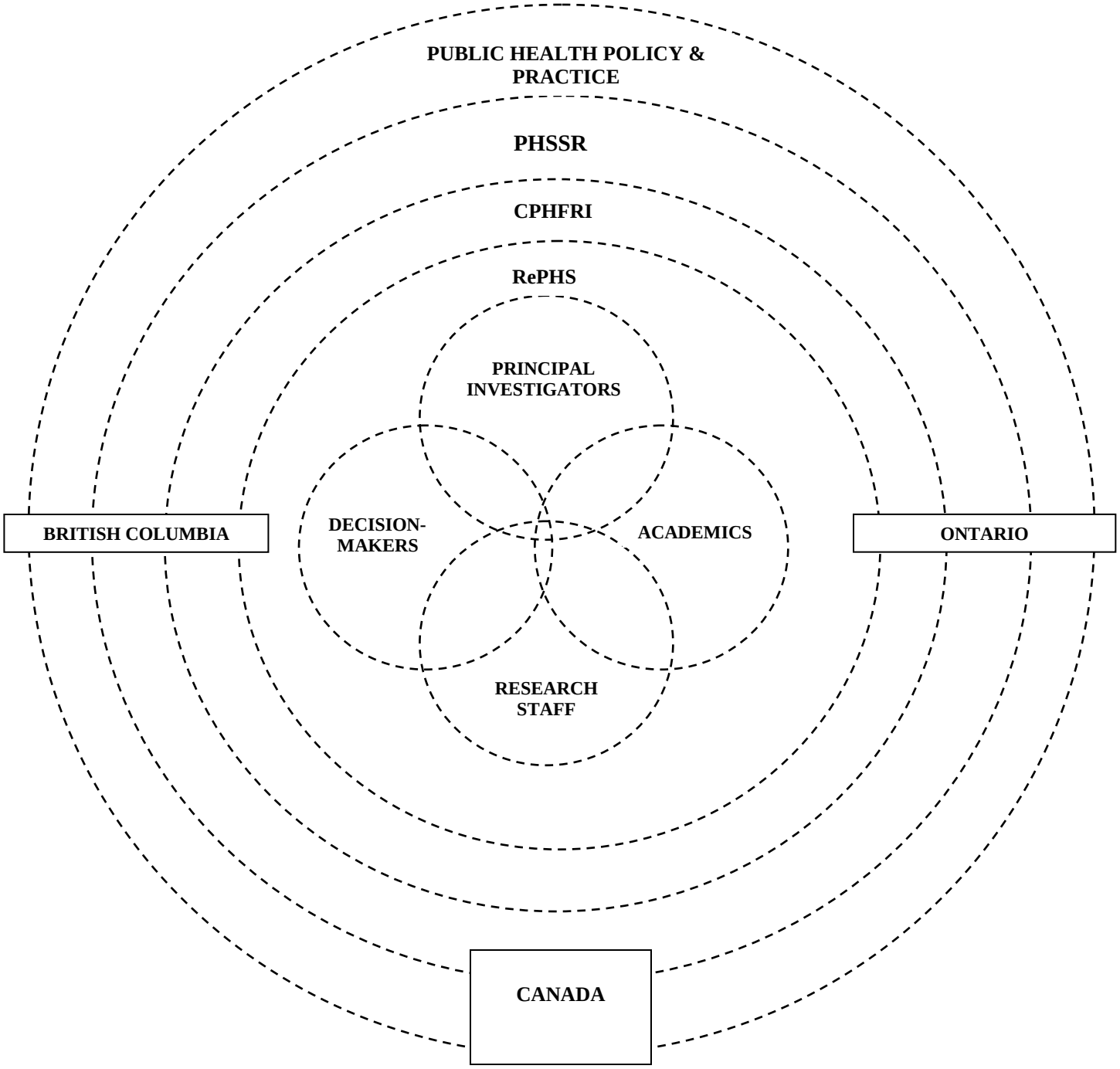

Figure 1. Researcher's conceptualization of the RePHS collaboration as a complex adaptive system. The circle sizes are not relative to one another and the dashed lines represent the interconnectedness of the components.

In viewing the collaboration explored in this study as a complex adaptive system, it is important to acknowledge what supports the interconnections occurring between the multiple participants and systems. The interconnectedness is substantiated in the structures and processes that were identified by participants as enablers for engagement, challenges, and strategies for moving forward in the project. Systems can be viewed as self-organizing and constantly adapting to change while being driven by inter-system interactions (Best & Holmes, 2010). Structures and processes that were found to be vital for enabling researcher engagement in the RePHS project were those that support relationship building and maintenance, and those necessary for effective communication within and external to the team. The need for leadership to be aware of the dynamics within the team and promote flexibility within these processes to meet the needs of academics and decision-makers as the project evolves was articulated by participants. As previously mentioned, the challenges that arose in the RePHS project occurred mainly at the level of team interaction, between and within academics and decision-makers.

It is these enablers and challenges and their influence on researcher interactions that potentially drove the RePHS project forward. Participants used these enablers, challenges, and strategies to overcome challenges to formulate context (RePHS)-specific suggestions for moving forward. Structure and process-based suggestions for improvement within the collaboration stemmed from challenges arising from communication or lack of communication. Specific strategies included more frequent, relevant, audience-specific research updates, Principal Investigators checking-in regularly with team members to encourage engagement and promote role clarity, and a large face-

to-face meeting to sustain momentum and synergy as the project entered its third year. This large face-to-face meeting was also suggested as a mechanism for re-visiting the original research plan, revising if necessary, and creating a plan for the future; this highlights the participants' acknowledgement of the need for revision in light of the dynamic nature of the project itself and the broader system in which it is situated.

Exploring the interactions that have taken place in the partnership between academics and decision-makers in the RePHS project provides support for using a systems approach to understand IKT processes. Structural and procedural concepts that emerged as enablers for and challenges to engagement occurred within the multiple systems that comprise and surround the RePHS project, shedding light on the dynamic, non-linear phenomenon of collaboration. This phenomenon is influenced by factors at multiple levels: individual, team, and broader public health practice and policy system. It is through acknowledging the multiple systems and factors that comprise and impact the process of IKT that strategies for collaboration are optimally devised.

The next section links the concepts outlining structures and processes embedded within collaborations that were identified in the literature review to the concepts and themes for IKT that emerged in the current study.

Integrated Knowledge Translation Structural and Procedural Concepts

When using a systems perspective to examine IKT it is important to understand the underlying concepts that are important for the processes that occur within collaborative partnerships. Initially, four concepts were gleaned from the literature to support this study: establishing and maintaining relationships, communication, multidirectional knowledge sharing, and capacity building. It was through using these concepts as a supporting framework this researcher was able to conceptualize enablers and challenges for engagement in the collaboration and formulate strategies to support success in collaborative PHSSR ventures. Each concept will be discussed separately.

Establishing and Maintaining Relationships

The importance of taking time and dedicating resources to structures and processes for establishing and maintaining the relationships within a collaborative research endeavour are apparent. From the results of the current study as well as evidence from several authors, taking time and establishing opportunities for informal and formal team interactions early on in a partnership as well as throughout the evolution of the collaborative project are keys for success (Baumbusch et al., 2008; Gagnon, 2009; McWilliam et al., 1997; Ross et al., 2003; Sibbald, 2010). Initiating the project with a face-to-face, collaborative, and interactive learning opportunity (CPHFRI Methods Symposium) and then continuing to meet face-to-face as often as project resources allowed was important for continuing to build and foster the relationships that comprise the partnership. The importance of face-to-face interactions is acknowledged by several authors (Baumbusch et al., 2008; Bowen & Martens, 2005; Jansson et al., 2010; Lavis,

2006) who have explored and subsequently offered suggestions for success in establishing collaborative partnerships. When resources and project logistics presented challenges for meeting face-to-face, maintaining regularly scheduled interactions via teleconferences for formal communications, such as research updates and planning, and informal discussions was found to enable engagement in the RePHS project. It was also suggested as a strategy for the RePHS project to continue using and as a facilitator for successful collaborative research.

Strategies that support relationship building and maintenance also include other structures and processes that were found to enable engagement in the RePHS project: the creation of an open, supportive, and flexible research environment and valuing and respecting team members. Trusting, open, and respectful relationships between research partners is a theme evident in previous explorations of collaborative projects (Bowen & Martens, 2005; Golden-Biddle et al., 2003; LeGris et al., 2000). Gagnon (2009) proposed factors for success in IKT that were also highlighted by the participants in this study: a plan for the inclusion of team members who are collaborative and a strategy for ensuring that trusting relationships among team members are maintained and conflicts are resolved appropriately when they arise. Of interest, the sole concern decision-makers raised regarding their experience to date in RePHS occurred early on and was related to frustrations felt when they perceived their voice was neither heard nor taken into consideration when formulating initial research questions. Although this is not necessarily viewed as Gagnon's *conflict*, according to the decision-makers it was resolved appropriately once it was brought to the attention of the Principal Investigators. A plan

was subsequently put in place to ensure decision-makers' voices were incorporated in future debates and discussions. Addressing such concerns early on in a project and putting processes in place for addressing potential conflict strengthens the relationship between team members and demonstrates respect for individuals. This parallels previous findings that key components of IKT are acknowledgement of accountability, reciprocity, and respect for each partner's knowledge base and skills (Baumbusch et al., 2008; Jansson et al., 2010; LeGris et al., 2000).

Part of creating an environment to support relationship building is offering the opportunity for team members to understand each other's roles in their respective organizations and the different perspectives, knowledge, and skills they bring to the team. Having flexibility during meetings and allowing for theoretical and practical debates was cited by decision-makers as an opportunity to further the progress of the RePHS research project as well as understand individual motivators, interests, and goals. This communication strategy, the creation of an open forum for exchange and the development of a shared language and culture, has been previously found to support collaboration (Bowen & Martens, 2005; LeGris et al., 2000; Sibbald, 2010).

Facilitating collaborative success through supporting the relationships within a team is also part of the role of those leading the team. Strong, steady, creative leaders who can "read the waters" of their team and embody a "go with the flow" mindset enabled participant engagement in the current study. As a result of their exploration of partnerships between academics and health system managers and public policy makers, Ross et al. (2003) offered recommendations for facilitating decision-maker involvement

in IKT: being strategic about establishing partnerships, intentional about supporting partnerships, and be committed to building partnerships. The results of this study supported Ross et al.'s recommendations for this role of leaders in collaborative endeavours. Principal investigators who are strategic, intentional, and committed to building the relationships on the research team is evidenced by offering regular, planned opportunities to interact and providing resources to meet face-to-face. Utilizing such strategies to intentionally engage team members at points in the research process when their skill sets and knowledge base are optimally used were viewed as facilitators for collaborative success by participants in this study as well as by others (Baumbusch et al., 2008; Bowen & Martens, 2005; Jansson et al., 2010; Sibbald, 2010).

Literature supports another key component in relationship building and maintenance as a partnership evolves: the up-front identification of roles and responsibilities of all partners (Jansson et al., 2010; McWilliam et al, 1997; Ross et al., 2003). Establishing role clarity and expectations for contributions were expectations of academics and decision-makers, and the omission of this at the onset of the project was articulated as a challenge for engaging in the project as it evolved. Subsequent to this, both academics and decision-makers suggested establishing role clarity and providing feedback to the team regarding roles and contributions throughout the project as a process that could be improved in the RePHS project. Ongoing negotiation and feedback to maintain clarity of expectations is important for engaging partners in collaboration as well as for encouraging balanced participation and equal ownership and pride in the research processes and outcomes (Jansson et al., 2010; McWilliam et al., 1997). Respect for the

roles filled and contributions made by each type of researcher can be established through openly valuing and appreciating other participants, which is facilitated by a supportive research environment. When roles are clearly established, openly negotiated, and partners value and respect each other, relationships are nurtured and the partnership can evolve. This concept is validated by this study's findings as well as those from previous IKT explorations (Baumbusch et al., 2008; McWilliam et al., 1997; Ross et al., 2003).

This study found overwhelming evidence for the importance of attending to structures and processes that build and maintain relationships that comprise a collaborative research venture. Participants articulated relationship-based factors when asked to share enablers for engagement, challenges that need to be overcome to engage in collaboration and strategies for improving RePHS and facilitating successful IKT. The relationships that evolved during collaboration were also articulated as one of the benefits of IKT; they strengthened the processes and outcomes of the collaborative project as well as led to opportunities for collaborating in future research and practice endeavours.

As previously described, effective communication structures and processes are important for establishing and maintaining relationships. The concept of communication is also important for additional IKT processes.

Communication

Communication is another important concept for IKT. Formulating open, trusting, respectful and effective working relationships in a collaboration is supported by effective communication structures and processes. In addition to sustaining relationships, the concept of communication also encompasses the structures and processes to support what is communicated internally within the team and externally to those outside the research project. The current study supported the importance of effective structures and processes for communication: the need to communicate internally regarding role clarity, expectations, research updates, and a common vision for the project; and the need to have processes in place for relevant, succinct external communications.

The findings confirm the importance of having effective communication structures and processes in place early on in a collaborative project. Academics and decision-makers shared expectations for communication, enablers for engagement that were grounded in communication, challenges that arose related to communication, and strategies for successful IKT that incorporate communication structures and processes. In support of current literature, the identified communication structures and processes are not only practical and tangible strategies that need to be established, but also the incorporate and acknowledge the human aspects inherent in bringing together individuals in a partnership (Baumbusch et al., 2008; Bowen & Martens, 2005; Denis et al., 2003; Golden-Biddle et al., 2003; McWilliam et al., 1997; Mitchell et al., 2009).

Practical and tangible structures and processes are needed for communicating within a large, geographically dispersed research team. They need to be effective and

meet the needs of the types of researchers involved in the collaboration, such as monthly newsletters, short electronic communication, and reminders regarding meetings or upcoming events. Golden-Biddle et al. (2003) found that web-based forums for communicating can provide a venue for knowledge sharing in multi-site collaborations as they are available at all times of the day. In contrast to this, the current study did not find support for the SharePoint site currently being used by RePHS, which academics and decision-makers cited as challenge to access and utilize. Maintaining regular ongoing communication using the aforementioned strategies was offered by academics and decision-makers as a facilitator for successful collaboration. This maintenance of regular communication with team members was found to be important for engaging participants and achieving successful IKT by other authors interested in collaboration (Baumbusch et al., 2003; Bowen & Martens, 2005; LeGris et al., 2000).

Several academics and several decision-makers described the organized, reliable, accessible, and knowledgeable research support staff (research coordinators and research assistants) as an important factor in communication. Having staff available to create and then utilize effective communication strategies was cited as vital for keeping partners up-to-date regarding RePHS progress, and for facilitating success. The importance of research staff communication and organizational skills was not found in literature and offers a new strategy for those looking to engage in successful IKT.

Putting the above-mentioned communication structures and processes in place for internal communication is important for supporting what is effectively and efficiently communicated to the team. Communication from project leadership early in the

collaboration regarding expectations for roles and contributions, and overarching goals of the research project were expectations of the RePHS researchers. It was felt by both academics and decision-makers that clear, transparent expectations should have been articulated early in the partnership and then continually revisited to maintain clarity and support establishment of a clear, common vision for the research. This notion of communicating expectations early in a collaborative partnership is viewed by others as important process for success (Baumbusch et al., 2008; Gagnon, 2009; Jansson et al., 2010). The organizational and structural challenges found by Denis et al. (2003) to impact decision-maker participation in various aspects of the research project could be overcome by this process; clearly articulating expectations may allow partners to overcome challenges and participate at times in the research process they deem to be valuable. Failure to establish role clarity became a challenge for decision-makers on the RePHS team; it was articulated that expectations for individuals and their organizations were not established at the outset which impacted participation. It was suggested that expectations be established moving forward in the RePHS project as they are viewed as necessary for collaborative success.

Challenges related to communication within the RePHS team were based in the melding of the research and practice worlds and the subsequent differences in agendas, languages, perspectives, expectations, and values that academics and decision-makers brought to the project. The differences in the research or theoretical language of academics and the practical or applied language of decision-makers offered a challenge for team dynamics and functioning. Also contributing to internal communication

challenges were the logistics of the team, including relying on electronic communications across a large, geographically dispersed team. This factor was particularly prominent when attempting to make decisions regarding the research project; attempting to achieve consensus and incorporate a variety of perspectives using teleconference or email was cited as challenging by both academics and decision-makers. The above challenges are well-known barriers in IKT literature; professional differences between academics and decision-makers in areas within and outside of public health have the potential to challenge collaborative partnerships throughout all stages of the research process (Bowen & Martens, 2005; Lomas, 2000; Ross et al., 2003; Sibbald, 2010; Walter et al., 2003). This study supports this literature but sought to move one step beyond by formulating strategies to address the communication challenges arising from researcher differences. Academics and decision-makers in this study offered strategies to facilitate overcoming communication challenges noted above: regular communication and planned opportunities to interact; establishing roles for the multiple skill sets and knowledge bases on the team; and using multiple communication strategies to meet multiple needs. The former strategy can build trust and respect amongst team members and the latter two were highlighted as processes that are negotiable within the team as the project evolves.

Decision-makers also expressed the importance of establishing processes for the dissemination of research updates and results externally. Both academics and decision-makers articulated the benefit of rich, relevant, contextualized results as an outcome of the collaboration, yet it was only decision-makers who suggested that the two types of researchers work together to create concise external communications for both research

updates and these results. Communications destined for those outside of collaborative team need to be succinct, framed for the target audience, occur frequently enough to keep key stakeholders (e.g., policy makers in BC Health Authorities) updated, and should include links to relevant reports and/or results. These are commonly utilized strategies for KT to promote the uptake of research findings into policy and decision making (Lavis et al., 2003; Mitton et al., 2007); what is of interest here is that they were acknowledged only by the decision-makers.

The multiple components of effective communication for success in collaboration found in the current study highlights its importance as a concept embedded within the process of IKT.

Multidirectional Knowledge Sharing

One of the concepts identified in the literature upon which IKT is dependent is the ongoing sharing of knowledge between research partners. This could be viewed as mutual teaching and learning needed to support the evolution of the collaboration and the research process; exchanging knowledge as a means of establishing common goals, sharing expertise, fostering shared meanings, and clarifying conceptual research ideas (Bowen & Martens, 2005; McWilliam et al., 1997).

The process of multidirectional knowledge sharing should begin early in the partnership and evolve as the collaboration matures, a concept that was minimally acknowledged in the current study. Only one participant actually articulated an expectation that during the collaboration there would be a two-way exchange of knowledge and a give and take relationship would evolve between the academics and

decision-makers on the RePHS team. Ross et al. (2003) found increased decision-maker engagement occurred with active knowledge sharing practices by both academics and decision-makers themselves. These included academics preparing research updates, providing consultations, and engaging in informal email and telephone exchanges. Decision-makers also actively engaged in the projects explored by Ross et al. (2003) through organizing interactive forums hosted at their organizations and attended by academics; academics also made site visits to learn about decision-maker activities and their organizations. What these mechanisms highlight is the importance of interactive means for sharing contextualized knowledge and offering an opportunity to learn about each other's worlds. In the current study, support for these was found in the expectations of learning that would occur cited as a motivator for participation, the strategies suggested for building relationships and facilitating communication, and the individual benefits that would occur as a result of the partnership. The knowledge sharing practices that academics and decision-makers spoke of were grounded in communication strategies to support the exchange and resultant bidirectional learning.

The CPHFRI Methods Symposium was an interactive opportunity to share knowledge but the knowledge movement was primarily from academics to academics and academics to decision-makers. The purpose of the Symposium was to learn about the research methodologies that would be utilized during the RePHS project and only minimal time was allocated to the decision-maker perspective. In future face-to-face meetings, opportunities should be taken to increase information that is shared by decision-makers as a means of increasing academics' understanding of the public health

policy and decision-makers' worlds in BC. Establishing annual workshops for mutual learning may strengthen a partnership and has been found successful in other studies (Jansson et al., 2010). Challenging external influences included changes in the political landscape and the provincial public health structure, as well as keeping the research topical, relevant, and up- to-date in a rapidly changing environment. These challenges could be addressed by providing more opportunities for decision-makers to share what is happening in their respective organizations; academics being aware of and understanding the political landscape in which the research is taking place is important (Baumbusch et al., 2008).

If communication processes are established early on for sharing knowledge between research partners, then it will later facilitate real-time sharing of the rich, relevant results believed to be a beneficial outcome of collaborations (Baumbusch et al., 2008; Golden-Biddle et al., 2003). Real-time sharing offers benefits for decision-makers facing time constraints in applying research results, for establishing validity of the research methodology, and simultaneous data collection, analysis, and interpretation. The open lines of communication and flexibility in the research process acknowledged in the current study as strategies for successful collaborations could support this concept.

The RePHS project is in essence studying the impact and outcomes of implementing public health policy – the translation of knowledge in the form of a policy from provincial level ministries to Health Authorities (BC) or Health Units (ON). Although not explored in this project, it is acknowledged that the characteristics of the Core Public Health Functions Framework and process of moving this knowledge into

public health practice could impact the engagement of the academic and decision-makers on the RePHS team. The content within the Framework was not identified by participants as a topic of knowledge sharing, but the characteristics of this content may have influenced interactions within the team. Rogers' Diffusion of Innovations theory identifies characteristics of the innovation (policy), organization, and environment that have the potential to influence its adoption (Rogers, 2003). The content within the Framework possesses characteristics that could influence its adoption, such as whether it is perceived as better than the previous policy (relative advantage), the degree to which it is consistent with Health Authority values and needs (compatibility), and how difficult it is to understand and use (complexity). Additionally, whether it could be implemented on a small scale to determine its advantages and disadvantages (trialability) and subsequently be evaluated (observability) are also important characteristics (Rogers, 2003). Even more important in the RePHS project are the organizational and environmental characteristics that would influence adoption of the Framework. As previously described, the changes occurring within both the BC Health Authorities (organization) and broader BC political structures (environment) have delayed the implementation of the Framework.

The notion of multidirectional knowledge sharing practices during the collaborative research project really underlies the potential for capacity building in academic researchers for producing practice-based results and in decision-makers for making evidence-informed decisions.

Capacity Building

IKT offers the opportunity for individual capacity building for both academics and decision-makers. The current study offered support for this concept as both academics and decision-makers articulated the notion of learning from each other as a motivation for and benefit of participating in the collaboration.

By far the most prevalent reason cited as a motivator for participating in the RePHS project was related to personal practice or research. Both academics and decision-makers articulated the benefits of working collaboratively extended beyond RePHS to their personal practice or research; learning from each other as well as having the opportunity to participate in interesting research with partners who share similar goals and values was an attractive prospect. Individual motivating factors for engaging in IKT have yet to be widely explored; most literature focuses instead on the benefits of partnerships. In the current study, individual capacity building was one of the two individual-level benefits articulated by both types of researchers, the other being expanding and strengthening relationships.

Bowen & Martens (2005) propose that of the three types of learning that occurred in collaboration between academics and decision-making researchers from Manitoba Health Authorities, conceptual learning resulting in a change in attitude and possibly a greater openness to new ideas was believed to be the most beneficial for the IKT venture. Collaboration offers the opportunity for decision-making partners to reflect on their practice and its consequences, to identify what they may do differently in the future, and how this is related to the research context in which they are engaged (Baumbusch et al.,

2008; Ross et al., 2003). In the current study, only decision-makers identified that engaging in the RePHS project influenced, inspired, and validated higher level thinking about public health practice and research. This confirms Bowen and Martens' belief that the conceptual learning that occurs during IKT may be slightly less rewarding for the academic partners. Given this, the academic researchers may be benefitting from the two other types of learning that could occur in IKT: factual and how to locate and access needed information. Individual capacity building with respect to increased knowledge and understanding of public health practice and policy within BC was cited by academics in the study as a benefit. Additionally, academics and decision-makers shared that the relationships that they have developed during the RePHS project have the potential to lead to research and practice opportunities after RePHS is completed; this researcher believes that this could demonstrate that both types of partners are now aware of where and how to access important information that may be needed in the future.

Decision-makers acknowledged that through working collaboratively in RePHS and establishing a network of individuals dedicated to PHSSR and improving public health practice, they have a source of knowledge for research methodologies and processes. They also cited a benefit of establishing relationships with fellow decision-makers in other Health Authorities who share similar roles and responsibilities. These relationships offer the opportunity to engage in practice-related discussions related to public health policy and decision-making. Through the network that has been established in RePHS, academics articulated that they are able to access decision-makers who can provide insight into contextualizing research and offer practical approaches to KT.

Additionally, academics cited being able to learn from their academic colleagues regarding research methodologies. The individual capacity building for both academics and decision-makers as a benefit of collaborative research is widely acknowledged in literature exploring IKT (Bowen & Martens, 2005; Denis et al., 2003; Golden-Biddle et al., 2003; McWilliam et al., 1997; Ross et al., 2003; Sibbald, 2010; Walter et al., 2003).

Engaging in an IKT project may involve exploring new roles and responsibilities. Academics may need to shift traditional approaches to the research process to allow for the incorporation of decision-makers' perspectives and knowledge, therefore increasing the time usually allocated to certain steps such as formulating research questions and data interpretation. Decision-makers may need to negotiate roles and responsibilities in their organizations to allow for time for research-related activities. Some authors view this as building capacity for collaboration (Baumbusch et al., 2008; Ross et al., 2003) although the current study found these shifts in traditional roles, responsibilities, and practices offered challenges for both decision-makers and academics.

Beyond the individual capacity building that occurs within IKT, literature also identifies that organizational capacity building is often a need and a result of collaboration (Baumbusch et al., 2008). The need is for the two types of organizations involved in the collaboration, the university and the practice-based organization, to support and value research-based knowledge. Decision-makers in the current study did highlight that even though their organizations may state that research is valued, it is often hard for them to allocate time in their day-to-day roles and responsibilities to engage in work related to RePHS. Academics did not articulate any challenges that were faced as a

result of any university imposed regulations. The findings did include references to the increased time that is needed to engage in collaborative research, offering a challenge for the research process, but this was not linked to meeting deadlines from the university or research funders.

Interesting to note is the individual capacity building for working collaboratively articulated by academic researchers. Learning how to engage decision-makers participating in a research team, such as conducting meetings with multiple partners present, incorporating multiple perspectives and ideas into decision-making in the research process, involving partners in data interpretation, and writing papers all offer challenges and subsequently the opportunity for deeper learning.

One factor influencing capacity building is the length of time partners are involved in a collaboration; long-term sustained programs or ongoing reciprocity between academics and decision-makers has been found to facilitate immediately usable research results while building capacity in decision-makers throughout all phases of the research process (Lavis et al., 2003; Lomas 2000; Ross et al., 2003). Although long-term efforts require strategic individual and organizational efforts, the benefits for capacity building are increased. The current study did not investigate participants' experiences with capacity building on a time-based continuum. Given that RePHS is taking place over five years and participants identified benefits of increased knowledge and skills related to research and practice as well the formulation of spin-off relationships leading to working together outside RePHS, this researcher hypothesizes that the long-term commitment by

both academics and decision-makers will result in greater capacity building than if RePHS was a short term venture.

The notion of individual capacity building as a benefit and result of collaborative endeavors between academia and decision-makers in public health policy is an important outcome supported by the findings from this study. A concept of interest that arose in the current study but had not been initially identified in the literature is explored in the next section – multidisciplinary capacity.

Multidisciplinary Capacity

This researcher found the identification of multidisciplinary capacity as a facilitator for collaborative success an interesting concept that emerged from the findings. The inclusion of multiple disciplines in a collaborative partnership was identified by both academics and decision-makers as important for ensuring multiple perspectives inform the research process to maximize the potential for yielding relevant results. Although not initially identified from the literature, upon reviewing it following data analysis, this concept does support other authors' findings (Baumbusch et al., 2008; McWilliam et al., 1997; Ross et al., 2003; Sibbald, 2010). This "panoramic disciplinary view", as described by an academic, is strengthened by the diverse experiences, knowledge, and skill sets that are brought to a collaboration through the inclusion of researchers from public health disciplines such as nursing, medicine, health promotion, health economics, policy consultation, public health planning, and business administration or management. These disciplines could be represented by either the academics or decision-makers, as supported by the characteristics of the participants in the current study. If teams are to bring

together multiple disciplines, strategies to support this including fostering a research environment that is respectful of the diversity and establishing roles for the various skill sets should be employed.

This discussion has highlighted how the study findings related to the IKT concepts of building and maintaining relationships, communication, multidirectional knowledge sharing, and capacity building are inextricably linked and support viewing the evolution of a collaborative partnership for PHSSR from a systems perspective. It also discussed a concept that was not initially identified from the literature, but emerged as an important finding: the potential for multidisciplinary capacity as a facilitator of collaborative success. At the outset of a collaborative endeavour it is vital for those involved to share a clear, common vision and have well-established goals to meet the vision. Articulating this vision and expectations for roles and contributions of academics and decision-makers involved in the project is an important starting point. In order to then build and support the relationships between the researchers, effective communication structures and processes need to be in place. Leaders of IKT projects need to embody the trust, respect, and flexibility that are important for establishing and maintaining relationships as well as ensuring engagement over the course of a long-term partnership. Supportive organizational structures, such as reliable, knowledgeable and accessible research staff and sufficient funding, contribute to the development of the research process as well as to the formation of a successful collaborative endeavour. Once a supportive and trusting environment is created, the relationships that comprise the partnership will evolve and the benefits of the collaboration can be realized. A collaborative effort exploring public

health practice and policy has the potential to build individual capacity, strengthen and expand relationships that bridge academia and public health practice, impact public health systems, services, and interventions and population health, while strengthening the Canadian PHSSR agenda.

Study Strengths and Limitations

Like all research, there were both strengths and limitations to the current study. One strength of this research lies within the quality of the study as supported by the rigour in study design and execution. Lincoln and Guba's (1985) standards for maintaining rigour in qualitative research, credibility, transferability, dependability, and confirmability, were considered throughout the research process. Credibility was ensured by personal journaling and member checking, while dependability was strengthened through the use of a semi-structured interview guide, creation of code definitions for inter-coder congruency, and maintenance of an audit trail for all study design and analysis decisions. This audit trail was established through memoing for all decisions regarding analysis and interpretation; it also provided support for the study's confirmability as a means of establishing clarity of the researcher's perspective. Transferability was assured by the researcher providing rich description of study context and participants so that the reader could decide about the appropriateness of the findings for their own setting. Consistent involvement of committee members in various roles throughout the study also supported rigour.

A second strength of this research lies in the interventional outcome of using interviews for data collection; interviews affect people (Patton, 2002). Although the goal of the interview is to gather data and not change the thoughts, feelings, or views of the interviewee, the experience of being guided through a "directed, reflective process affects the [person] being interviewed" (Patton, 2002, p. 405). In this study, the researcher acknowledges that asking the participants about their engagement in the RePHS project might have offered them the opportunity to re-engage or more deeply engage with, or conversely, disengage from the project. One participant indicated that the interview might in fact "kick-start or re-kick start [his/her] involvement in [the project]". Although neither the interviewer nor interviewee will know in advance whether the interview will be transformative, it is a factor encountered with using interviews as a data source (Patton, 2002). In the case of the current study, the researcher believes that the *interview as an intervention* was likely not a negative or traumatizing event for the participants and in fact had the potential to positively impact RePHS project engagement.

The researcher acknowledges that her current role as a research assistant with the RePHS program was both a strength and a limiting factor. The researcher's role as a research assistant increased familiarity with BC public health policy and practice, as well as the broad program of research from which the study participants were recruited. This provided a solid understanding of context and helped during analysis when trying to conceptualize a story of the evolution of the collaborative partnership being explored.

The researcher's RePHS research assistant role was a limiting factor in selection of the study sample. Ideally interviews would have taken place with participants in both

BC and ON to gain a broader understanding of experiences and allow for cross-province comparison. The results would then inform the entire research team's future progress. Since the researcher had been working closely with the RePHS ON team for over one year at the onset of the current study, the members of the team may have felt pressured to participate if recruited and may have felt unable to honestly express their experiences. In addition, the researcher's advisor is the academic lead for the ON team, also potentially influencing participation and responses to interview questions. The researcher had not developed relationships with the members of the RePHS BC team as program coordination in BC is led by the overall program coordinator, who is situated in BC. Given the demographics of the RePHS BC team and the similar demographics of the RePHS ON team with respect to roles within the program, decision-maker employers, and program logistics, e.g., geographical dispersion, it is anticipated the results are generally transferable between the provinces.

Using interviews as the sole mode of data collection limits data triangulation, which could have provided corroborating evidence to shed light on themes and perspectives (Creswell, 2007). To provide a credible rendition of participant responses, the researcher chose to stay close to the surface of the data. Sandelowski (2002) cautions that interviews have been precariously and erroneously used in qualitative studies. She proposes that qualitative researchers have gained a false sense of authenticity and security by taking interview data too much at face value and not recognizing interviews' socially and culturally constructed meanings (Sandelowski, 2002). Following this cautionary

guidance, the recommendations proposed by the researcher are thoughtfully considered and grounded in the data.

A final challenge and possibly a limitation of the current study is a result of the provincial political and local Health Authority contexts in BC. Although not formally investigated during the current study, it is hypothesized that RePHS BC team member engagement has been impacted by the time the political changes have taken to be fully realized and their subsequent impact on employment stability of those employed in the Health Authorities. It is believed that these political changes may also have affected participation in and responses to interview questions for the current study. Recruitment and interviewing took place between January and March of 2011, during the height of provincial restructuring. An additional factor resulting from shifts in the political landscape in BC is that the framework the RePHS team is studying has yet to be implemented. As previously mentioned, despite this factor, the RePHS team is still moving through the research process, including conducting data collection, analysis, and interpretation, as well as writing and presenting papers. If the researcher was to conduct this study again, a formal exploration of the impact of context on engagement in the collaboration would occur during participant interviews.

Recommendations for Practice and Future Research

Given these strengths and limitations, a number of a number of recommendations have been formulated for practice and research. These recommendations are grounded in the study's findings, staying true to outcomes resultant from qualitative descriptive methodology.

Recommendations for Practice

In the context of the current study, the researcher views implications of the results as recommendations for the practice of IKT with multidisciplinary and geographically dispersed teams exploring PHSSR. Strategies emerged from the research findings for those seeking to formulate and engage in collaborative endeavours bringing together academics and public health policy and decision-makers.

For success in collaborations between academics and decision-makers, strategies were formulated from the enablers for engagement as well as facilitators for collaborative success articulated by this study's participants. Collaboration needs:

- structures and processes in place to:
    - nurture relationship building and functioning, and
    - support communication;
- an environment that is open, respectful, and flexible;
- to value and respect for team members' perspectives, knowledge, and skills;
- early establishment and ongoing negotiation of clarity for roles and expectations;

- multidisciplinary capacity; and
- a shared common vision with common goals to achieve the vision.

These strategies are viewed as powerful key messages for the practice of PHSSR collaboration since they are based in the experiences of those participating in a long-term IKT venture in PHSSR. When conceptualizing a collaborative research project, it is important to establish structures and processes that will increase the potential for success and maximize potential benefits. Successful PHSSR collaboration programs have the potential to:

- build individual capacity for research, knowledge, and collaborative endeavours;
- strengthen and expand relationships between academic and public health practice and policy making;
- impact public health systems, policy, services, and interventions;
- improve population health; and
- strengthen the Canadian PHSSR agenda.

Academics and decision-makers embarking on a collaborative project need to ensure attention is paid early on to establishing a mutual vision and goals to achieve the vision. In building the research team, it is optimal to include the multiple disciplines involved in public health practice and policy and establish clarity in roles and expectations for the team members. Structures and processes for achieving this include allowing time for discussion and fostering flexibility with the evolution of the research project as well as the collaboration itself. Resources should be allocated to processes

such as regular team meetings and collaborative learning experiences, which optimally take place face-to-face. Ensuring team members are engaged and feel valued and respected is achieved through these regular interactions which should be open forums for debate, discussion, and consensus-building; establishing open lines of communication amongst team members aids these processes.

Support for the structures and processes encompassing the above suggested strategies come from strong leadership, knowledgeable research staff, and adequate funding. For those seeking or already leading a large, geographically dispersed collaborative PHHSR project, budgeting for formal and informal interactions and the time needed for moving through the research process with a large team is important. Embodying the respect, flexibility, and commitment to achieving the project vision and goals that are desired in the broader team will facilitate engagement. Hiring research staff who are organized, reliable, and accessible to the team will support participation and aid in navigating what will be a complex research process as numerous perspectives contribute to each step.

Those leading and participating in the collaboration are responsible for establishing and maintaining a supportive research environment in which mutual learning can take place and rich, relevant research outcomes can be achieved. Building the bridge between academia and public health policy through collaborative research can be challenging. The structural and procedural recommendations arising from the current study offer a starting point for embarking on such a journey.

Recommendations for Research

This study was conceptualized based on a gap in the literature regarding experiences of academic and public health decision-makers in collaborative partnerships and practical strategies for successfully engaging these partners in IKT. Throughout the research process, several ideas regarding future research were conceptualized.

The first of these is for implementation scientists to turn their focus from creating frameworks and models for IKT to evaluating these structures in different contexts so that they can be validated or discredited. Validation would aid those seeking to collaborate by providing frameworks upon which to base their ventures; discrediting would also aid in deciding whether or not to use certain structures or processes for guidance. The current study was based on concepts that emerged from previous literature, but would have been strengthened with grounding in a well-established theory, model, or framework. The simultaneous action of all dimensions within collaborative efforts makes understanding the process and establishing strategies for success challenging. Some authors argue that one model, theory, or framework is insufficient for guiding the practice of IKT given the multiple contextual influences on the process (Best et al., 2009; Estabrooks, Thompson, Lovely, & Hofmeyer, 2006; Herbert & Best, 2011; Lapaige, 2010; Lavis, 2006). Despite this notion, this researcher still proposes evaluation of the current models, theories, and frameworks, to establish or discredit their usefulness for practice. IKT is a relatively new approach to the movement of research findings into public health policy and practice and requires scrutiny, empirical qualitative and quantitative exploration, and further discourse on its structures, processes, and strategies for success.

A further suggestion to strengthen the theoretical basis for IKT would be for explorations of experiences in collaborative PHSSR research to include or be based in social and organizational psychology theory. There is a body of theoretical and empirical research in the fields of social and organizational psychology on intergroup dynamics which could be useful in theoretically characterizing engagement and relations between academics and decision-makers in IKT projects in PHSSR (Staggs, 2008).

Future research should also focus on assessment and measurement of collaborations or partnerships. This study qualitatively explored the notion of engaging research partners and facilitators for successful collaborations, but did not use indicators for measuring or assessing the partnership. Kothari, MacLean, Edwards, and Hobbs (in press) recently formulated indicators for partnerships that were devised from research exploring long-term partnerships between academia and government partners. Their suggested use for the indicators is to utilize them when forming a partnership to mutually establish and manage the collaboration goals or to evaluate the partnership. The indicators encompass numerous dimensions that are common to all partnerships, such as communication, collaboration, and dissemination of findings, as well as dimensions relevant for partnerships in the early and mature stages of evolution. These indicators need to be tested for validity and reliability, but offer a tool to be used in future research exploring structures and processes that lead to successful collaboration between academics and decision-makers in PHSSR.

The proposal for future research evaluating impact parallels a call for measuring the impact and outcomes of IKT processes, a common theme for research emerging from

KT literature; just because partnerships occur, it does not always mean that the resultant research will be used to inform policy or decision-making in public health (Innvaer, Vist, Trommald, & Oxman, 2002; Kothari et al., 2005; Lavis, 2006; Lavis, Ross, McLeod, & Gildiner, 2003). What is challenging in measuring impact and outcome of collaborative research is defining the measures to be evaluated; creating definitions for success, effectiveness, and outcomes is highly contextual and likely dependent on the nuances of individual collaborative partnerships. One area for research that could stem from the current study related to this concept is exploring whether intergroup relations and participant engagement impact project effectiveness, once a definition of effectiveness is established. Specifically in the case of RePHS project, the original Guiding Principles (Appendix A) could be utilized as a tool for measuring project success and effectiveness.

Knowledge Translation and Exchange

As this study was completed as part of the thesis requirement for a Master's of Science in Nursing degree, defense of this degree was completed by the researcher to a panel of experienced faculty members within McMaster University. This final thesis report is a comprehensive report of the study design and purpose, literature review, findings, discussion, and implications of the study. This approved thesis is housed in the Digital Commons electronic library system.

Given the purpose of this study, to illuminate strategies for successful integrated knowledge translation projects, the researcher acknowledged the vital importance of the

dissemination, translation, and exchange of the study findings. This research project included the following knowledge translation and exchange activities.

At the ground level of the knowledge translation pyramid is dissemination, which is the strategically planned, active, one-way transmission of knowledge or research, such as is done in scientific journals or at conferences (CIHR, 2010). The results were disseminated through presenting findings in the form of a poster at the McMaster Faculty of Health Sciences Graduate Research Plenary in May 2011 and at the Canadian Public Health Association conference in June 2011.

One step beyond dissemination, knowledge translation and exchange, puts knowledge into the hands of health system managers, practitioners, policy makers, and the public so that it can be turned into action (Graham & Tetroe, 2007; Straus, Tetroe & Graham, 2009a). Knowledge exchange involves mutual learning and promotes collaborative problem solving between researchers and decision-makers (CHSRF, n.d.). Findings were shared with the two Principal Investigators for RePHS as well as the entire research team via web and teleconferencing (for the BC team) and in a face-to-face meeting (for the ON team). Face-to-face interactions using audience-tailored messages are noted to be two of the most persuasive channels of communication in the research transfer literature (Lavis et al., 2003; Mitton et al., 2007). The researcher developed a fact sheet (Table 4) that was shared with the entire RePHS team, detailing the study results in a usable and applicable format tailored to both the academic and decision-maker researchers. To increase the uptake of the results, the written format used was kept to brief summary statements and straightforward, simple, and action-oriented messages

(Lavis et al., 2003). The web and teleconference with the BC team allowed for dissemination of research results and implications and provided an opportunity for the BC team to ask questions of the researcher. The face-to-face meeting with the ON RePHS team provided the opportunity for ON participants to hear about the study results, learn what strategies are being used by their BC counterparts, and ask the researcher questions related to both the results and implications for the RePHS program of research.

Table 4

Fact Sheet for Dissemination of Research Findings to RePHS Team

Facilitators for Partnership Engagement and Collaborative Success	Practical Strategies for Embarking on New Collaborative PHSSR Research Projects	Practical Strategies for the RePHS Team at the Current Time (Year 3 of 5)
Establish structures and processes to nurture relationship building and functioning.	Meet face-to-face at project outset and as often as logistics and resources allow. Allocate resources to collaborative learning experiences for the whole team. Schedule regular team meetings/interactions for formal and informal debate and discussions. Establish and maintain an environment where mutual respect is the norm. Leadership should embody characteristics desired in team, including respect, flexibility, and commitment to goals.	Plan face-to-face meeting at this point in project to maintain momentum, build synergy, and re-visit project goals and expectations. Meet face-to-face as often as possible over the life of the project. This can take place at conferences where RePHS partners are attending and/or presenting or for RePHS-specific events. Maintain regularly scheduled team meetings via teleconference.

Table 4 (*continued*)

Facilitators for Partnership Engagement and Collaborative Success	Practical Strategies for Embarking on New Collaborative PHSSR Research Projects	Practical Strategies for the RePHS Team at the Current Time (Year 3 of 5)
Establish effective communication strategies.	Multiple strategies may be needed to accommodate different needs of team members. Poll team members at outset and regularly throughout project to establish communication plan and evaluate effectiveness. Have regularly scheduled team meetings; use media such as web or teleconference if geographically dispersed. Have organized, reliable, accessible and knowledgeable research staff to maintain communication processes.	Continue with regularly scheduled team meetings. Maintain regular communication for updates, reminders, requests for feedback, etc. Create a generic project email for research staff to send all team communications, e.g., rephs@rephs.ca Evaluate effectiveness of SharePoint for communication; explore alternative options if necessary.
Foster an open, respectful, and flexible research environment.	Establish and maintain open lines of communication between all individuals involved in collaboration. Promote team members taking time to understand each other's worlds. Allow for flexibility in meetings for debate and discussion, and in the research process to accommodate for time needed for collaborative efforts and changes in public health context.	Continue to foster open lines of communication amongst all team members. Leadership should continue to embody trust and respect as exemplars of expected team attributes.

Table 4 (*continued*)

Facilitators for Partnership Engagement and Collaborative Success	Practical Strategies for Embarking on New Collaborative PHSSR Research Projects	Practical Strategies for the RePHS Team at the Current Time (Year 3 of 5)
Demonstrate value and respect for team members' knowledge and skills.	Listen to and incorporate voices of all participants in decisions. Research staff and leadership should be aware of and appropriately use skill sets of all partners. Inform decision-makers of opportunities external to project for participating in research.	Engage team members who have not been participating/contributing; check-in with these team members at times in research process when their skills could be utilized as a means of re-engaging them.
Establish clarity for roles of individuals and their organizations and subsequent expectations for contributions.	This should be done at the beginning of the project and then re-visited frequently throughout the research process. Roles should be dynamic, negotiable, and individually based in knowledge and skills.	Take time in upcoming team meetings to re-visit roles and expectations of team members; this should happen regularly through to the end of the project. Create and send out frequent research updates and any resultant changes in individual/organizational expectations.
Create a multidisciplinary team.	Include multiple disciplines representative of those in public health policy, practice, and research. Foster respect for the diversity of the team. Establish roles for the multiple disciplines, skill sets, and knowledge bases.	If team members leave, make attempt to replace with an individual who possesses skills, knowledge, and perspectives to complement remaining individuals in partnership.

Table 4 (*continued*)

Facilitators for Partnership Engagement and Collaborative Success	Practical Strategies for Embarking on New Collaborative PHSSR Research Projects	Practical Strategies for the RePHS Team at the Current Time (Year 3 of 5)
Establish a common vision with shared goals to achieve the vision.	Bring together partners who share common interests, visions, and goals for PHSSR. If common goals do not exist prior to project, mutually establish at project outset and re-visit frequently. Write down and broadly disseminate vision and goals for future reference; can be revised if needed.	Take time at this point in the project to re-iterate the vision that is driving the research, as well as goals for achieving the vision. Discuss if vision and goals need to be re-framed and establish new plan if vision/goals are adjusted. Write down and broadly disseminate current/revised vision and goals for future reference.

Concluding Statement

In closing, this project, utilizing a qualitative exploratory descriptive approach, provided the methodological foundation for exploring and describing the experiences of academic and decision-maker researchers engaging in an integrated knowledge translation research program in public health policy. A clear and thorough exploration of the literature established the rationale for the study and provides the reader with an introduction to the current state of integrated knowledge translation practice in light of the movement to build a stronger public health systems and services research agenda. Key structures and processes to support relationship building and maintenance and communication need to be created and managed for successful collaboration. Multidisciplinary collaborative efforts are strengthened when taking place in an open, supportive, and flexible research environment with clearly defined roles and expectations. And possibly most importantly, these partnerships need to be grounded in a common vision, with mutually established goals to achieve the vision in order to realize potential individual, team, and broad public health system and population health benefits. Through better understanding of this study's participants' experiences, knowledge has been gained and disseminated in a way to appropriately support future collaborative research programs and projects.

> "The problem is not that we lack understanding
> of what must be done for good collaboration;
> the problem is that we don't do it."
> (Herbert & Best, 2011)

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APPENDICES

Appendix A

CPHFRI Guiding Principles

The members of CPHFRI have collaborated since 2006 and have established a set of guiding principles for their research. These principles also outline a framework for collaborations among team members and are as follows:

- We commit to a collaborative, inclusive process, recognizing the contributions of each member. All members are respected, valued and treated equitably.
- We consider, value, and respect multiple research paradigms and methodologies.
- We strive to support the goals of all partners involved while simultaneously recognizing potential constraints.
- We strive to reach a consensus regarding research priorities, and projects endorsed by our team must fall under the team's agreed upon research priorities.
- We commit to ensuring that the research is relevant to our stakeholders and has the ability to influence decision-making in a timely manner.
- We honour transparency and declare conflicts of interest where appropriate.
- We support capacity building in partner organizations, and encourage active student participation in our research to enhance their learning.
- We strive to be a model for effectively linking policy, practice, and research.
- We commit to attend meetings regularly or to send a representative. If this is not possible, we agree to send our regrets to the chair and to review the minutes to follow up on decisions.

Note. Adapted from: "About," by Core Public Health Functions Research Initiative, 2009, retrieved from http://web.uvic.ca/~cphfri/about/index.htm#guiding

Appendix B

Letter from Dr. Marjorie MacDonald – Consent to Conduct Current Study

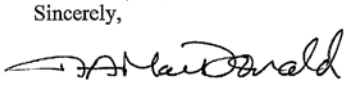
October 18, 2010

To whom it may concern,

This letter is to confirm my consent for Rebecca Spark, Masters of Science in Nursing student attending McMaster University, to complete the proposed study entitled '*An exploration of experiences of academics and decision-makers in a collaborative research program'* within my current program of research, *Public Health Services Renewal in British Columbia and Ontario (RePHS)*. Rebecca is completing this project under the advisement of the Ontario Academic Lead for RePHS, Dr. Ruta Valaitis.

As the Academic Lead for RePHS, I consent to Rebecca interviewing members of the RePHS team in British Columbia, once they have provided individual consent, regarding their experiences in our program. Her findings are important as they will be used to inform and guide the functioning of our team and help us to engage our partners as we move forward in our public health services program of research. I look forward to Rebecca expanding her scope of involvement with our program from Research Assistant with the Ontario team, to graduate student researcher with a focus on exploring the structures and processes of collaborative research within our BC team.

Sincerely,



Dr. Marjorie MacDonald, RN, BN, MSc, PhD
Associate Professor, School of Nursing, University of Victoria
CIHR/PHAC Applied Public Health Chair in Public Health Education and Population Intervention Research

Appendix C

Recruitment Email Sent to Potential Participants

Hello _____,

My name is Rebecca Spark and I am currently completing my Masters of Science in Nursing at McMaster University under the advisement of Dr. Ruta Valaitis. I am interesting in exploring the experiences of participants in a large integrated knowledge translation research endeavor.

You are being asked to participate in this study as a result of your involvement in the *Public Health Services Renewal in British Columbia and Ontario (RePHS)* project being led by Dr. Marjorie MacDonald and Dr. Trevor Hancock.

Participating in the study will involve being interviewed regarding your participation as either an academic or decision-making researcher with RePHS.

The purpose of this study is to explore and describe the experiences of academic and decision-maker researchers participating in a public health integrated knowledge translation and exchange program of research. In particular, this research seeks to identify structures and processes that impact positively and negatively on team members' participation / engagement in the collaborative research program. This will therefore inform strategies that can be used to support meaningful engagement in collaborative research in the future. It is anticipated that by examining the experiences of the researcher partners within both academia and decision-making, this research can contribute new knowledge about strategies to support collaborative health services research models which can subsequently strengthen the movement of evidence into public health services research.

I am attaching a consent form for the project which provides further details about what is entailed. At this time, it is only for information purposes but should you agree to participate, I will require a signed copy.

Please feel free to contact me at sparkre@mcmaster.ca or 905-525-9140 ext.21222 should you wish to discuss the project further.

Thank you so much and I look forward to hearing back from you!

Sincerely,

Rebecca Spark
Graduate Student

Appendix D

Participant Information and Consent Form

Participant Information and Consent Form

Principal Investigator, Department and Institution:
Rebecca Spark, Master's Student in the School of Nursing, McMaster University

Advisory Committee Members, Department and Institution
Donna Ciliska, School of Nursing, McMaster University
Linda O'Mara, School of Nursing, McMaster University
Ruta Valaitis, School of Nursing, McMaster University

Sponsor:
Canadian Institutes of Health Research

You are being invited to participate in a study exploring experiences of academics and decision-makers in an integrated knowledge translation program of research that is being conducted by Rebecca Spark (sparkre@mcmaster.ca or by phoning 905-525-9140 ext.21222).
Dr. Ruta Valaitis is Rebecca's supervisor and is the locally responsible investigator. You may contact her if you have further questions by emailing valaitis@mcmaster.ca or calling 905 525-9140 ext 22298.

This research is being funded by the Canadian Institutes of Health Research.

WHY IS THIS RESEARCH BEING DONE?

The purpose of this study is to explore and describe the experiences of academics and decision-makers participating in a public health integrated knowledge translation and exchange program of research. In particular, this research seeks to identify structures and processes that act as enablers or barriers for all partners on a research team as they engage in collaborative research. It is anticipated that by examining the experiences of the researcher partners within both academia and decision-making, this research can contribute new knowledge about strategies to support collaborative health services research models which can subsequently strengthen the movement of evidence into public health practice.

Research of this type is important because it aims to increase understanding of the experiences of those engaging in a large, multidisciplinary, multi-site, collaborative program of research. The results of this study will inform the program of research itself, as well as inform the currently developing Canadian field of Public Health Services Research (PHSR). Further to this, this study ultimately seeks to provide suggestions for engaging in integrated knowledge translation research programs and projects, which in turn supports the movement of research knowledge into public health policy and practice so that ultimately, the health of the population is improved.

You are being asked to participate in this study because of your involvement in the *Public Health Services Renewal in British Columbia and Ontario (RePHS)* program of research being led by Dr. Marjorie MacDonald and Dr. Trevor Hancock.

WHAT WILL MY RESPONSIBILITIES BE IF I TAKE PART IN THE STUDY?

If you agree to voluntarily participate in this research, your participation will include a one-on-one semi-structured telephone interview lasting approximately 90 minutes. This interview will be audio-recorded. Following the interview and once the primary researcher has reviewed the transcript, she may contact you for clarification of responses to interview questions if required.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

Participation in this study may cause some inconvenience to you as it will require some time commitment. However, the time you spend will be directly related to your participation in the RePHS project. There are no known or anticipated risks to you by participating in this research.

WHAT ARE THE POSSIBLE BENEFITS FOR ME AND/OR FOR SOCIETY?

The results of this research will provide information about experiences of researchers and decision-makers in the RePHS program of research. These results may be useful to inform the current researchers and decision-makers about ways to improve the team's overall effectiveness. It can also highlight strategies which can enable similar collaborative research teams in the future.

IF I DO NOT WANT TO TAKE PART IN THE STUDY, ARE THERE OTHER CHOICES?

Your participation in this research must be completely voluntary. If you do decide to participate, you may withdraw at any time without any consequences or any explanation. To make sure that you continue to consent to participate in this research, you will voluntarily choose to remain a part of the research project.

WHAT INFORMATION WILL BE KEPT PRIVATE?

All information shared with the principal investigator will be kept private and confidential. Transcripts of interviews will be shared with the principal investigator's thesis advisory committee.

You are expected to say only what you feel comfortable in communicating. For all data collection, your name and characteristics including the name of your employer, if present, will be removed or altered and contents of quotes used in the study write-up will not reveal individual identities. In other words, no individuals will be identified in any reports or papers emerging from the project.

It is also important to note that during an interview you will be asked to describe your role within the RePHS project. Depending on the nature of your position, it might be possible for research team members and those external to the research project (e.g., colleagues), to determine your identity. Every precaution will be taken to ensure that this is minimized. For example, no information will be attributed to you directly. Furthermore, members of the RePHS program of research team will not have direct access to the data. All data analysis will be conducted by the principal investigator and her supervisory committee.

It is anticipated that the results of this study will be shared with others in the following ways: directly to RePHS participants in British Columbia and Ontario and the principal investigators (Dr. Marjorie MacDonald and Dr. Trevor Hancock), through a scholarly journal publication, and presentations and/or posters at relevant conferences.

Data from this study will be secured for 5 years post publication in Rebecca Spark's office in a locked filing cabinet and/or on a password protected computer after which time it will be destroyed. Data collected during this study may be used for secondary analysis by a graduate student writing a thesis if written permission is obtained from the principal investigator and ethical approval has been granted.

WILL I BE PAID TO PARTICIPATE IN THIS STUDY?

There will be no compensation for your participation in the study.

WILL THERE BE ANY COSTS?

Your participation in this research project will involve your time.

IF I HAVE ANY QUESTIONS OR PROBLEMS, WHOM CAN I CALL?

If you have any questions about the research now or later, contact **Rebecca Spark** at (905) 525-9140 ex. 21222. Dr. Ruta Valaitis is Rebecca's supervisor and is the locally responsible investigator. You may contact her if you have further questions by emailing valaitis@mcmaster.ca or calling 905 525-9140 ext 22298.

If you have any questions regarding your rights as a research participant, you may contact the Office of the Chair of the Hamilton Health Sciences/Faculty of Health Sciences Research Ethics Board at 905-521-2100, ext. 42013.

Your signature below indicates that you understand the above conditions of participation in this study and that you have had the opportunity to have your questions answered by the researchers.

Name of Participant	*Signature*	*Date*
Name of Witness	*Signature*	*Date*
Name of Principal Investigator	*Signature*	*Date*

A copy of this consent will be left with you, and a copy will be taken by the researcher.

Appendix E

Demographic Questionnaire

1. On the RePHS research team, I am considered

a. A decision-maker researcher (primary work is in practice or policy)

b. An academic researcher (primary work is in academia)

2. At what jurisdictional level do you currently work?

__ National
__ Provincial
__ Regional (Regional Health Authority or LHIN)
__ Local (Municipal/ District Health Authority)
__ Other (please specify) _____

3. Which best describes your discipline? (Check one)

__ Business administrator/ Business manager
__ Community developer
__ Data analyst
__ Dentist
__ Dental hygienist
__ Dental assistant
__ Dietitian
__ Epidemiologist
__ Environmental health coordinator
__ Family home visitor
__ Health promoter
__ Health educator
__ Nutritionist
__ Dietician
__ Speech/language pathologist
__ Pharmacist
__ Psychologist
__ Physician
__ Program evaluator
__ Public health nurse
__ Public health inspector
__ Public health dentist

__ Librarian
__ Nurse practitioner
__ Registered nurse
__ Registered practical nurse
__ Toxicologist infection control practitioner
__ Other (please specify) _____

4. Which best describes your main job function? (Check one)
__ Executive officer
__ Medical Officer of Health/Associate Medical Officer of Health
__ Senior program management
__ Middle management
__ Direct service provision
__ Research /Program evaluation
__ Data analysis
__ Policy development
__ Education
__ Coordination
__ Other (please specify) _____

5. How many years have you been in the health care profession?
_____

6. How many years have you been in your current position?
_____

Appendix F

Interview Guide

1. What do you see as your role on the RePHS team?
2. Describe for me how you feel being an academic/decision-making researcher in a collaborative research program.
3. Why did you agree to participate in the RePHS collaborative research program?
4. What were your expectations/assumptions regarding collaborative research prior to entering RePHS?
5. In what ways do you feel you are contributing to this collaborative research program?
    a. Describe how satisfied you are about these contributions.
6. Describe for me what you perceive to be the benefits in this collaborative research program.
7. Describe any challenges have you encountered during your participation in RePHS. (Prompts- structures (Sharepoint; funding) and processes (communication processes, principles of engagement, decision-making processes)
    a. Have you or others helped you to overcome these challenges? If so, how? If they have not been overcome, how might these challenges be managed better?
8. Describe any enablers you have encountered to enhance your participation in RePHS. (Prompts- structures (Sharepoint; funding) and processes (communication processes, principles of engagement, decision-making processes)

9. Describe any strategies **you** have utilized to facilitate your participation/engagement in the program.
10. Describe any strategies **others have utilized** to facilitate your participation/ engagement in the program.
11. What would you like to see done differently in terms of engaging your or others in this collaborative program of research?
12. What do you perceive to be the most important facilitators of a successful collaborative program of research?
    a. How have they been validated or disproved?