Context-informed Population Health Knowledge Translation: A Case Study

by

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Abstract

Background

Population health evidence suggests a broad range of contexts for the use of knowledge. Researchers identify the need for new services, and they suggest ways to prevent exposure to known harm, often through public policy or structural changes. These suggestions are often beyond the funding and mandates of existing health service organizations. There is still limited guidance to inform knowledge translation when implementation requires collaboration between multiple institutions or where the use of knowledge calls for new resources or infrastructure.

Method

This research investigates context-informed knowledge translation to improve population health. It collects and analyzes interview data from experienced knowledge translation practitioners in a case study organization that seeks to promote universal programs and public policy to improve health at a population level. Knowledge translation is examined at two levels, first at an organizational level and then in two sub cases that represent divergent knowledge products and different contextual barriers and opportunities. Qualitative analysis is used to investigate the range of approaches used and the rationale for the use of specific approaches in different contexts.

Discussion

Findings suggest that there are identifiable links between the nature of contextual challenges and the approaches used in the case study. Challenges for knowledge translation can be conceptually divided into three categories: 1. Ensuring reach and understanding, 2. Ensuring capacity for implementation, and 3. Ensuring that those positioned to act
effectively on the knowledge are motivated to do so. Findings suggested that the categories of approach used by knowledge translation practitioners correspond with the nature of identified challenges: exchange and transfer of information to build awareness and understanding, processed focused approaches to build implementation capacity, and strategic approaches to persuade or motivate uptake.

Findings operationalize knowledge, context, and facilitation in ways that can be used in further study of conditions where knowledge translation may need to build capacity or motivation to advance the use of reliable knowledge. Practitioners can use the proposed categories to identify context specific challenges and can then draw from the hierarchically structured menu of approaches to build theories of change that can plausibly address them.
Lay Summary

This research focuses on context-informed knowledge translation to improve population health. It builds on theory to help knowledge translation practitioners recognize and respond to context specific challenges. It concludes that in circumstances where potential knowledge users have insufficient capacity or a lack of motivation to act, knowledge translation that is restricted to the transfer and exchange of information is unlikely to lead to action. Population health knowledge, with its attention to discriminations, inequities, and emerging threats, often calls for new infrastructure and resources not already in place. Barriers to action can be anticipated by analyzing features of context in relation to specific knowledge for translation. The study makes links between types of context-specific challenges that knowledge translation can face and approaches to address them. It presents a structured menu of approaches and outlines how each responds to the separate challenges of promoting understanding, capacity and/or motivation.
Preface

The research reported in this dissertation was conceived and designed by the PhD candidate and was not part of an existing program of research. It incorporates suggestions from the committee and supervisor in relation to methods and analysis. For example, the research supervisor suggested the use of template analysis. The PhD candidate conducted all components of the research personally. A research assistant was engaged in the qualitative analysis, to participate in coding discussions and to establish validity in coding by duplicating some coding. The research supervisor was also involved in coding decisions. The supervisor and members of the committee made important contributions through discussing ideas and providing feedback on submitted work.

The study was conducted under an UBC BREB ethics approval H17-01086. There have been no publications from this work to date.
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Chapter 1: Introduction

1.1 Overview

This research aims to make a contribution to context-informed knowledge translation in population health. It builds on emerging theory that suggests that context and knowledge may be operationalized and analyzed in practical ways to help knowledge translation practitioners to focus on approaches that recognize and respond to the opportunities and constraints offered by different knowledge translation circumstances. It does so in a case study that investigates how an experienced research organization selects strategies in the varied contexts where they work with different knowledge products to suggest or propose effective action to improve health.

The case study begins by reviewing a range of facilitation approaches available to knowledge translation practitioners. It then examines potentially important distinctions in knowledge and in context as a way of identifying or anticipating knowledge translation challenges. The research then investigates the extent to which knowledge translation in the case study applies approaches that respond to identifiable configurations of knowledge and context. The primary focus is on extending contextual considerations to encompass knowledge translation for population health: to include the use of evidence in decisions about public policy and resource allocation. The study investigates approaches that have been selected for use by experienced practitioners across a range of contexts: institutional contexts as well as broader intersectoral service contexts and policy development networks at multiple levels of governance.
1.2 Introduction

It is a powerful idea that reliable knowledge, effectively translated into action to improve health, can prevent considerable suffering and save many lives (Eyler & Brownson, 2016; Rushmer et al., 2019). The value of research is enhanced where it can make a demonstrable contribution to society. Despite this, strong evidence has often gone unused for years (Glasgow & Emmons, 2007). Early research on knowledge translation led to a proliferation of models and terminology - perhaps in the hope that one might eventually emerge as superior (Graham et al., 2006; McKibbon et al., 2010; Rubin et al., 2008). This dissertation moves away from the search for a single best practice model and aims to contribute to theory about how knowledge translation may be usefully informed by better understanding of contextual considerations.

Studies of knowledge translation have consistently shown that promoting action can require more than good information. Knowledge translation outcomes are variable and frequently disappointing (Grimshaw et al., 2012; Innvaer et al., 2002; LaRocca et al., 2012; Oliver, Lorenc, & Innvaer, 2014; Orton et al., 2011; Rupertsberg et al., 2014). Many factors influence the behavior of individuals and organizations and it is important to recognize that knowledge is only one of them. Behavior is influenced by valued incentives (Steurle & Jackson, 2016), by emotions (Slovic et al., 2004) time pressures (May, Johnson & Finch, 2016) social identity (Kahan et al., 2009; Latour, 2004) existing beliefs (Yeo et al., 2015) and levels of trust in science (National Academy of Science, 2017; Resnick, Sawyer, & Huddleston, 2015).

The idea that humans are primarily rational actors has been repeatedly called into question by researchers (Cairney, 2016; Latour & Woolgar, 1979; McCaughey & Bruning,
Haidt (2013) elaborates on how values, identity, cognitive habits and morals can operate at subconscious levels to drive behavior. In a groundbreaking article, Tversky and Kahneman (1974) inspired a new direction in research by providing evidence to support a view that people often act based on precognitive impulses or unconscious heuristics and that they construct rational explanations for their actions after their response is largely determined (Kahan et al., 2009; Kahan, 2015; Kahneman, 2003). It is clear that we are all susceptible to motivated reasoning or ill considered judgments. The apparently non-rational elements that drive behavior can appear as daunting barriers to rational application of knowledge.

While social and political influences on behavior can be viewed as irrational, they can also be examined as alternative or even competing rationalities in contexts where these influences may be identifiable in advance (Townley, 2002). Norms, values, existing practices, and ideologies that influence individuals or groups in specified social contexts can be discerned, anticipated or discovered (Beland, 2019; Haidt, 2013; May & Finch, 2009; Morgan-Trimmer, 2014; Parkhurst 2017; Scheufele, 2014). Where knowledge “fits” or where implications of knowledge align comfortably with the personal, social, and institutional influences on potential knowledge users, knowledge acceptance and uptake appears to be more likely (Festinger, 1957; Johnson & May, 2015; Kitson & Bisby, 2008).

Recognizing that there are social and political influences on knowledge use need not detract from the rationalist argument that working toward effective use of reliable knowledge is a worthwhile endeavor (Beland, 2019; Doane et al., 2015; Latour, 2008; Parkhurst, 2017). Awareness of diverse inputs does suggest that knowledge translation
should be planned with attention to the social and political forces that may influence uptake in specified contexts.

   Kitson Harvey and McCormack (1998) developed a theoretical model for knowledge translation based on recognition that different contexts present different barriers or opportunities to knowledge exchange and uptake. They identified three domains of knowledge translation: knowledge, context, and facilitation. Their insight continues to invite exploration of how facilitation might be designed to respond to identifiable challenges for specific knowledge products in specified contexts. This dissertation study takes up this challenge by examining context-contingent knowledge translation practices in a case study.

   In evidence-based practice, research is often designed for application in well-defined clinical settings (Estabrooks, 2009). In these circumstances, proposing practices that are beyond the implementation capacity of an organization can be seen as a failing on the part of those producing knowledge or by those proposing action based on knowledge that can be judged irrelevant to that organization’s purposes. However, opportunities for improving the health of populations are not restricted to refining the practices of existing health service organizations (WHO, 2019). Authors writing about population health point to a need for knowledge translation approaches that can promote evidence-informed action even where research informed action requires new thinking or extends beyond the capacity of existing organizations and structures (Armstrong et al., 2013; Kothari & Armstrong, 2011). This call has not yet been fully addressed in the knowledge translation literature.

   Population health recommendations are frequently public facing and policy is regularly promoted as an important lever of change (Greenhalgh & Russell, 2009; Greer et
In this document, policy refers to “a law, regulation, procedure, administrative action, incentive or voluntary practice of governments and other institutions” as defined by the CDC (2015). Policy is therefore not an intervention itself but directs resources and provides guidelines to constrain or enable intervention (de Leuw, Clavier & Breton, 2014).

An important finding in population health is that access to services, resources, or supports – as well as exposure to hazardous social and physical environments – are consistently associated with structural and socioeconomic factors. Some examples of targets for intervention beyond health services include housing, sanitation systems, health financing, or the systematic reduction of harmful exposures such as lead in paint or petrol, asbestos in buildings, or hazardous practices in transit or work environments. The WHO, reporting on the social determinants of health, notes that:

…maldistribution of health care – not delivering care to those who most need it – is one of the social determinants of health. But the high burden of illness responsible for appalling premature loss of life arises in large part because of the conditions in which people are born, grow, live, work, and age – conditions that together provide the freedom people need to live lives they value (CSDOH, 2008, p. 26).

Intervention to reduce the harms caused by social or structural determinants may inherently challenge existing institutions or status hierarchies and require new forms of cooperation, new institutions, or resource allocation at several levels of governance (CDC, 2010; El Jardali & Fadllallah, 2015; Raphael, 2009; 2012; Rudolph et al., 2013; WHO, 2019). Social arrangements that lead to inequities and predictable harms have evolved through human choices and they can be influenced through policy action (CSDOH, 2008; Eyler & Brownson, 2016). Action to address social determinants in ways that will prevent harm is a key recommendation of population health knowledge translation and one that is generally beyond the capacity of health service institutions alone (CSDOH, 2008).
A number of authors conclude that challenging status quo norms and structures is a necessary aspect of finding optimal application for the evidence about social determinants of health (Gagnon et al., 2018; Greer et al., 2017). However, building political will has been identified as a barrier to this type of action (CSDOH, 2008). Since political feasibility is a fundamental criterion in policy analysis, an absence of political will could be seen as an insurmountable barrier and a reason to avoid investing in knowledge translation. Proposals to use knowledge can be resisted by powerful actors who benefit from status quo arrangements (Weiss, 1979). Chriqui and Young (2016) note that without support from authoritative decision makers and legislators, proposals will not progress.

Reviewers note that knowledge translation for population health is frequently promoted but seldom reported as successful (Gaglio, Shoup & Glasgow, 2013; Orton et al., 2011; Rupertsberg et al., 2014). Knowledge of social determinants and social gradients has been noted to be effective in inspiring rhetoric but less effective at promoting meaningful action (Chriqui & Young, 2016; George et al., 2019). Phillips et al. (2016) conclude that despite lofty objectives,

… strategies that initially appeared to be addressing important social determinants of health, such as early childhood development and healthy settings, often resulted in narrow strategies that drifted back to focus on the individual (p.11).

It is therefore important to consider what can be done to promote evidence informed action where such action is not within the capacity of any single institution or system to implement (Béland & Katapally, 2018; Fafard & Hoffman, 2020). An important study by Ellen et al. (2018) showed that when explaining failures in knowledge translation for policy, researchers and policy makers had opposing explanations. Researchers referred to problems of communication and understanding while policy makers pointed to contextual
constraints that limited their capacity to implement recommendations. This finding suggests that researchers may be looking to effective communication of good information to advance action where the issues require greater attention to other context specific challenges. This dissertation explores the type of contextual factors referred to by policy makers in Ellen’s (2018) study and considers approaches that can be used by knowledge translation practitioners even where these factors present barriers or challenges.

The knowledge translation literature has provided little guidance to date about addressing implementation capacity in either policy or service provision. Similarly, social and political considerations have frequently been left out of prominent discussions about knowledge translation in health (Cairney & Oliver, 2017; Liverani, Hawkins & Parkhurst, 2013; Parkhurst, 2017; Weiss, 1979). While the literature provides limited guidance for addressing resistance that is based on factors other than the health value of knowledge, policy is recognized as an important lever for action and public or community preferences are discussed as an enabler of public policy (van de Goor et al., 2017). In relation to policy, Fafard and Hoffman (2020) conclude:

…future KT approaches in public health policy must better account for the complex political realities of policymaking, specifically they must account for including the importance of diffused decision making, the nature of institutional hierarchies and policy networks, and greater recognition of the various information inputs into policymaking” (p.2).

Taking steps to build public or political support for innovative action or to challenge the norms, mandates or priorities of potential knowledge users is potentially at odds with prominent recommendations from those knowledge translation authors who argue for the engagement of end users in knowledge production as a means to ensure alignment between proposed action and the existing priorities of organizations or policymakers (Haynes et al., 2011; Kitson, 2009; May, Johnson & Finch, 2016; Oliver Kothari & Mays, 2019).
Alignment with established leadership, institutional values, and existing practices are important predictors of knowledge uptake in organizations and in policy; information seen as irrelevant can be overlooked or ignored (Harvey and Kitson, 2016; May & Finch, 2009; Weiss & Bucuvalas, 1980).

The argument for producing knowledge that is usable within existing organizations and constraints has clear merit. In their review of knowledge translation case studies, Greenhalgh and Fahy, (2015) found that the pressure on researchers to demonstrate impact in the form of instrumental action was resulting in evidence that research was influencing practice, in part by promoting action that could be measured. Evans and Cvitanovic (2018) explicitly advise researchers to selectively promote the aspects of their research that will appeal to policy makers in order to make an impact. Rychetnik et al (2012) explicitly advise knowledge translation that encourages production of usable knowledge. While this advice may be well founded if the objective is to advance research careers or improve practices in existing organizations, it is important to remember that the ultimate objective is improved population health.

Boswell and Smith (2017) caution that if knowledge translation selectively prioritizes findings that are readily actionable as a way to promote and demonstrate instrumental use, the direction of causation may be inverted. Rather than research informing policy, research agendas can themselves be influenced toward producing findings that support the status quo or that are designed for priorities of existing service organizations in ways that lead to what Labonte (2014) refers to as a “fatal indifference” to fundamentally important public health evidence. This current study will investigate ways in which research findings about social determinants of health can be prioritized in
knowledge translation despite the challenges and the pressure to produce readily usable or feasibly actionable findings.

Until recently, the knowledge translation literature has largely avoided discussing the implicit politics of knowledge translation even when recognizing that some knowledge may be resisted, ignored, or rejected by individuals or institutions that benefit from existing systems or contexts that privilege some above others – those very contexts and environments that knowledge translation about social determinants of health might aim to modify as a health intervention (Weiss, 1991). De Leeuw, Clavier and Breton (2014) point out that integrating political science theory in knowledge translation initiatives may be one key to more effective knowledge mobilization.

Although using knowledge to build a case for specific action is sometimes seen as stepping beyond the bounds of objectivity, contestation and debate are expected practice in policy development (Head, 2008; Weiss, 1991). An important review by Contandriopoulos et al., (2010) led to a framework showing that argumentative approaches are more frequently evident where polarization is present and where researchers carry much of the burden of knowledge translation.

Theory from political science and evaluation offer opportunities to rethink and potentially to expand the contribution of knowledge translation toward improved population health. New examples of knowledge translation, informed by political theory, are becoming available as researchers investigate ways to mobilize controversial ideas that are backed by sound research (e.g. Kershaw, Swanson & Stucchi, 2017; Martin et al, 2013; Sohn, 2018). These studies attend to persuasion and motivation and recognize the value of organized networks, coalitions and public opinion as levers for action. They appear to show
some promise where information alone has not previously been enough to initiate meaningful action.

Researchers can aim to find areas of agreement in contested policy forums by changing the framing of problems (Koon, Hawkins, & Mayhew, 2016). Framing and agenda setting approaches are described and recognized by Bamgartner and Jones (2002) and by Kingdon (1995) as an accepted part of policy development. In a health example, Morgan et al. (2015) use an economic frame to promote policy supporting universal access to prescription drugs in Canada. Astute practitioners choose frames that minimize polarization and increase the prospect of values alignment between recommendations and the beliefs and priorities of potential users (Sohn, 2018).

Dialogue about potential actions, or about the value of evidence can be constrained - or opened up - at the problem definition stage by frames that make it harder or easier to find agreement or to enlist public and political support for action. Sohn (2018) describes first and second order stages in policy making. The first order raises the salience of an issue as a priority for action. Second order work aims to inform selection of an intervention. As she notes, the knowledge translation literature has focused almost exclusively on second order concerns. This dissertation examines diverse uses of knowledge, including focusing attention on issues and framing problems. Each step toward action may require separate components and warrant separate attention.

The smoking cessation literature provides a useful example that illustrates the importance of framing and the role of the wider public in supporting policy action. Tobacco companies successfully framed smoking as an expression of personal choice in early resistance to regulation (Kosir & Gutierrez, 2009). Under this frame, harm became the
responsibility of individual smokers. Policy debate was effectively constrained to information campaigns to educate smokers about the consequences of their actions or behavior change programs or strategies to help them to reduce or quit. Under this framing, harm became the responsibility of individual smokers. Public policy to regulate or limit smoking was challenged as an unacceptable infringement of individual freedoms (Kosir & Gutierrez, 2009). Only when a strategic campaign reframed the problem in terms of risk to non-smokers through passive smoking was the wider public engaged in support of regulatory action such as bans on smoking in public spaces (IOM, 2010; Eyler & Brownson, 2016; Kosir & Gutierrez, 2009).

This example shows value in attending to the potential for knowledge to have impact at the problem framing stages of policy development. It illustrates knowledge work in several contexts in a journey toward effective action to reduce smoking: direct communication with smokers, engagement with policy networks and (frequently neglected in the knowledge translation literature) reframing the issue in public dialogue and debate.

The current dissertation uses case study methods in a research collaborative that promotes action on the basis of population level evidence about child development. The study investigates how knowledge and context may be classified and analyzed across a wide range of potentially valuable uses so that potential barriers can be identified and addressed in knowledge translation.

1.3 Knowledge translation definition

Knowledge translation is a widely used “umbrella term” used here to refer to a full spectrum of strategies for promoting the use of knowledge to improve health. The Canadian Institute of Health Research (CIHR), 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” (2016). The definition explicitly includes an ethical aspect and specifies the overarching objective of improving health at a population level. It is broadly stated to include policy oriented knowledge synthesis, transfer, diffusion, dissemination, mobilization or utilization processes that can enable uses of evidence of different forms and at various stages of knowledge development and implementation.

1.4 Study setting

The Human Early Learning Partnership (HELP) was selected as the site for this case study. HELP promotes the use of single-study and synthesized knowledge products in a broad range of contexts. HELP knowledge translation recognizes that child development occurs in an ecosystem with multiple levels of influence and that each context provides different opportunities to intervene to improve child development (Bronfenbrenner, 1979). HELP consistently aims to use evidence to inform local service provision as well as to promote public policy action, based on evidence that shows strong associations between healthy development and modifiable social determinants that are beyond the capacity of existing service providers to change.

1.5 Knowledge gap

This study responds to a gap in the knowledge translation literature about how contextual understandings might inform knowledge translation for population health. There is little agreement about how population health contexts should be defined or analyzed (Shoveller et al., 2016). Specifically, very little research has addressed how analysis of contexts can inform knowledge translation once recommendations for action extend beyond
the capacity of single institutions. This gap appears to be particularly significant in relation to population health objectives such as challenging structural discrimination or addressing social determinates of poor health as a root causes of inequities (CDSOH, 2008).

Coordinated intersectoral action (between organizations) and vertical collaboration (between organizations and higher levels of governance) have each been recognized as important for public health (Lapaige, 2010; Pfadenhauer et al., 2017). These authors recognize the added contextual complexity that multi level work brings to knowledge translation, but the guidance they provide for practitioners is not yet clear. This dissertation examines a range of approaches that can be used across diverse contexts and at different levels of influence. It allows holistic investigation of how and why HELP employs different approaches to knowledge translation at different times, with different knowledge products, driven by different actors, and focused on different types of action.

Contandriopoulos et al. (2010) investigated context-informed knowledge translation for collective action. The current study aims to advance the framework that they developed through literature review. Their work explicitly recognizes the importance of interactions between specific knowledge and contexts for policy and population knowledge translation. Similarly, Damschroder et al. (2009) noted that, “for implementation research, 'context' is the set of circumstances or unique factors that surround a particular implementation effort” (p. 3). This definition contrasts with those that focus on context as setting (Shoveller et al., 2016). Recognizing interplay between specific types of “implementation effort” and context is a key point that appears to call for greater attention in predicting barriers to knowledge translation.
While knowledge translation models can be seen to compete with each other, they can all be examined for the range of approaches that they incorporate as component parts. Different models or configurations of approach may be more or less relevant in different circumstances. To the extent that this is true, understanding knowledge-context configurations could help practitioners anticipate challenges. These challenges could then be addressed by applying suitable approaches to facilitating knowledge translation.

1.6 Research questions:

This thesis is designed to examine the overarching question: How can understanding of knowledge-context configurations influence or inform which approaches may be required to promote action in population-health knowledge translation? The primary focus is knowledge translation for population health: knowledge work to influence service provision as well as knowledge work to promote public policy or collective action in settings beyond the scope of single institutions. Using a case study at HELP to examine context-informed knowledge translation, three case study research questions were designed to gather contributing information.

• Research question 1. What approaches to knowledge translation are used in the case study to promote evidence-informed action to improve the developmental health of children (at a population level)?

• Research question 2. What approaches to knowledge translation are observed in the different knowledge-context configurations HELP aims to influence and what is the rationale for using specific approaches?
• Research question 3. To what extent can the use of knowledge translation approaches at HELP be anticipated by considering generalizable descriptions of knowledge-context configurations?

The first research question documents and classifies the full range of approaches to knowledge translation that are evident at HELP. This provides a “menu” of conceptually distinct components available for facilitating knowledge translation. The second research question examines the extent to which different approaches are used in different circumstances. The rationale for using different approaches is examined by considering implicit and explicit theories of change. What are practitioners aiming to accomplish and how do they consider that the knowledge translation approaches they use will lead to action? The third research question tentatively tests theoretical propositions about context-informed knowledge translation by comparing two cases. The literature review (below) suggests that some of the approaches may inherently represent informed responses to specific knowledge-context configurations. It suggests that approaches may even have been developed to specifically address the type of challenges that different circumstances present. By making tentative predictions about how facilitation will differ between divergent cases, results from the third question will offer some evidence about the extent to which approaches are used in the case study in relation to the different circumstances (knowledge-context configurations) that the separate cases represent.

While it is important to avoid overgeneralization from a case study, answers to these three questions at the case study level provide empirical evidence to develop and test emerging theory about how contexts might be analyzed more broadly to guide the use of
conceptually distinct approaches as components of knowledge translation in different circumstances of population-health knowledge translation.
Chapter 2: Literature Review

2.1 Overview

As described in the introduction, the central objective of this study is to contribute to theory that can enhance knowledge translation effectiveness through context-informed choices about approaches (or blends of approaches) to promote evidence-informed action to improve population health. The review begins by presenting a historical perspective that recognizes important learning over recent decades. It outlines challenges that the field still faces in examining patterns of relationship between three domains that are recognized to interact in knowledge translation: knowledge, context, and facilitation (Kitson et al., 1998).

The premise under investigation is that analyzing knowledge and context might provide guidance about which approaches to facilitation have reasonable prospects of overcoming identifiable barriers in contexts of knowledge use (Nilsen, 2015). Of particular interest to population health knowledge translation, and to this study, is knowledge translation where coordinated intersectoral action is required or where research recommendations call for public policy in contexts beyond health services.

The review identifies a divergence between authors who focus on collaborative and interactive practices that inherently accept the constraints of specific contexts for use and others who contend that population health knowledge translation needs to engage with social and political processes, including organized resistance, if some forms of established knowledge are to be mobilized effectively. Accepting that population health knowledge translation aims at times for policy action, I include literature that calls for greater integration of policy theory.
After reviewing literature about knowledge translation, I then consider what has been written separately about the domains of knowledge, context, and facilitation (Kitson et al., 1998). Operationalization of these three domains is important to allow systematic examination of patterns among them. Recall that the intention of the study is not to suggest the superiority of one approach over others but rather to work toward filling a knowledge gap in terms of understanding the circumstances in which each approach or the models that employ them may be required or helpful to make effective action possible or more likely. I conclude the literature review by referring back to the research questions and outlining several theory-based propositions that specify how analyzing knowledge, context, and their interplay might inform population health knowledge translation.

2.2 Knowledge translation: A historical perspective

Understanding how knowledge can be mobilized in the service of socially defined goals (including health) has been a focus of philosophers and rhetoricians for millennia (Duffy, 2011). Empirical evidence, presented first in the form of stories and anecdotes, has been used to inform action for many centuries (Claridge & Fabian, 2005). In early variants of informed practice, a body of expertise was essentially learned or accumulated through experience and from acknowledged experts. By the late 1800s, scientific methods were becoming increasingly systematic and research was building a reputation for discovering and validating useful knowledge (Brunton, 1875; Smith, 1981).

A prominent milestone in moving toward the systematic application of science in the United States was the funding of agricultural research colleges specifically developed to provide a scientific foundation to agricultural practices (Duffy, 2011). The development of research as a problem-solving endeavor in agricultural was paralleled by reforms in
medical education at the turn of the twentieth century leading to the Flexner report of 1910 (Duffy, 2011). The Flexner report advocated a deliberate science-driven approach to medicine and medical education and aimed to institutionalize the biomedical model of health care (Barr, 2011).

Progress in both research and practice continued throughout the early 1900s with practitioners and researchers often working together in close communication to consider possible applications of both basic and applied research findings. The sharing of information – including some important accidental discoveries – was largely through networks of publication, conferences and direct communication.

2.2.1 Early recognition of the importance of social process

In one of the first theoretical investigations of how knowledge influenced action, Rogers (1963) documented how agricultural innovations were shared or adopted, and how some eventually became common practice (Rogers, 2003). Rogers’ description of the “diffusion of innovation” provided a basis for understanding how networks enabled the spread of ideas and led to widespread use of important discoveries and innovations. Individuals playing roles of early adopters and opinion leaders within social networks were shown to influence uptake and adaptation. In examining how new practices are taken up, existing social networks and processes often proved pivotal in ways described by Rogers, (2003). New ideas were often met with suspicion until adopted by influential network members (Rogers 2003; Greenhalgh et al., 2004). Diffusion of innovation theory is still widely used in relation to the dissemination and diffusion of ideas and practices (Denis & Lomas, 2003; Green et al., 2009; Greenhalgh et al., 2004; Ottoson, 2009).
2.2.2 Evidence-Based Medicine

The concept of “evidence-based medicine” as promoted by Guyatt in the 1990s brought the focus back from social processes to the nature of the evidence, specifically evidence about practices established as superior through experimentation (Guyatt & Cairns, 1992). The rapid and widespread adoption of evidence-based medicine in the medical literature marked the culmination of several decades of work and reforms in the Canadian Health system and in the McMaster University Medical School. This work sought to increase the use of public-health epidemiology and introduced a problem-based approach to learning that promoted the deliberate consideration of available evidence to solve problems and inform decisions (Zimmerman, 2013).

To illustrate the dominance of evidence-based medicine in early knowledge translation - and its emphasis on rigorous production of knowledge – a bibliographic review of citations in the field of knowledge utilization showed that the most heavily cited articles about evidence use, between 1995 and 2004 (very prominently those authored by David Sackett) promoted the use of research knowledge on the basis of its claims to being better and more reliable than other forms of knowledge (Scott, et al., 2010). The trend to prioritize research rigor as a key to knowledge translation continued despite a relative absence of empirical support demonstrating associations between the quality of research and its use (Estabrooks et al., 2008). Demonstrating the academic rigour of knowledge production has seldom proved enough to ensure real world uptake in decision-making (Grimshaw et al., 2012; LaRocca et al., 2012; Oliver et al., 2014; Weiss & Bucuvalas, 1980).
Despite protests from Sackett himself (1996) about the importance of clinical experience and judgment, evidence-based medicine seemed to imply that medicine should be driven by findings from experimental evidence and that factors associated with a single outcome should prevail in decision-making (e.g., Grimshaw et al., 2012). Systematic reviews tended to retain the same single outcome focus (Tricco et al., 2016). Feinstein and Horowitz (1997) wrote an early critique noting how randomized controlled trials could overlook influential individual and contextual variables. Schwandt (2009) went further to state that relevant social incentives and tensions were often systematically excluded from experimental conditions through selection or controls. By asserting that decisions should be based on scientifically produced and academically-sanctioned evidence, discussion of values, loyalties, competing priorities, and affective means of persuasion often remained absent or hidden (Greenhalgh & Wieringa, 2011).

2.2.3 Knowledge translation as a responsibility of researchers

With the rising prominence of the evidence-based-medicine movement, knowledge translation became recognized as a necessary extension to knowledge production (Estabrooks et al., 2008). Educating potential users to be discriminating about the quality of evidence was an important component of the move toward evidence-based medicine. With rigorous evidence framed as a key driver of uptake in knowledge translation, (CIHR 2008; Sackett, 1997) research institutions were eager to involve researchers in demonstrating the value of their work (Canadian Academy of Health Sciences, 2009; Estabrooks et al., 2008). While promoting the use of superior practices in healthcare is clearly a focus of knowledge translation, it is less clear that researchers are being invited to take responsibility for engaging in efforts to build healthier societies where that might involve challenging status
quoting structural and power arrangements. As discussed in the introduction, one concern driving this research is that the knowledge that population health research produces shows strong and consistent linkages between health problems and structural arrangements in society.

2.2.4 **Emphasis on dissemination or transfer**

The transfer or dissemination of quality knowledge is at the heart of knowledge translation. Knowledge can’t be used by those unaware of it (Haynes et al., 2018). Informing users is therefore a core component of knowledge translation. Ensuring that knowledge reaches users and is accessible – and demonstrating that its use can make a positive difference – is not simple and can present important ethical and pragmatic challenges for knowledge translation (Chambers Glasgow & Stange, 2013; Grimshaw et al., 2004; Innaer et al., 2002).

Despite the importance of sharing knowledge, reviewers of knowledge translation increasingly recognized that informing potential users of research findings, while important, was only part of the journey to action (Larocca et al., 2012; Mays, Pope & Popay, 2005; Oliver et al., 2014). An empirical investigation by Weiss and Bucuvalas (1980) showed that research evidence was more likely to be used by decision makers if it passed their subjective tests of truth and utility. Few users of evidence were judging the credibility of knowledge by its academic or methodological credentials. Rather, the extent to which new knowledge rang true with existing beliefs and seemed relevant to prioritized objectives was more influential.
2.2.5 Engagement and interactive knowledge translation

With criticism of linear or deficit models came greater promotion of two-way engagement and recognition of the important function of dialogical aspects of communication (Datta, 2012; Wynne, 2005). Co-production and the potential importance of interactive practices was recognized from early investigations of promoting the use of good evidence (Kitson, 1997; Lomas, 1993; Weiss, 1979). Engaging users in knowledge production was described as integrated knowledge translation in 2007 to separate knowledge translation that integrates users in the production of knowledge from knowledge translation that begins once research is complete (Graham & Tetroe, 2007). Interactive work is understood to enhance the capacity of communicators and their audiences to understand one another and to produce or refine knowledge to be more suitable for application in users’ specific contexts (Innvaer et al., 2002; Oliver et al., 2014).

Researchers and reviewers increasingly recognized the importance of context and the fit of knowledge with the objectives, leadership, norms and practices of the institutions where new practices could be taken up (Greenhalgh & Wieringa, 2011; Kitson & Bisby, 2008; May & Finch, 2009; Mitton et al., 2007). By promoting user participation, elements of context such as user priorities, values and capacities are built into knowledge products (Chambers Glasgow & Stange, 2013; Kitson, 2009).

2.2.6 Knowledge translation as two-way learning

Wandersman et al. (2016) suggests that knowledge translation could be more successful if it was redefined as a learning activity rather than a transfer activity. Even with something developed in a lab such as vaccination, a context-aware learning process is still needed to facilitate implementation in different settings (Horne et al., 2015).
Co-creating can begin at different stages in knowledge production and synthesis. In circumstances where there is little prospect of experimentally confirming “best” policy through research, taking action with incomplete knowledge and building knowledge through evaluation may present a viable evidence-informed alternative to inaction (Doganova, 2013; Donnelly et al., 2014). The integration of evaluation as a component of knowledge translation has had minimal attention and offers many opportunities for future study.

2.2.7 Alignment

Kitson Harvey and McCormack’s (1998) insight that knowledge translation occurs through effective interplay between three domains suggests that a key task in knowledge translation may be to find optimal alignment between them. Knowledge and context can each be more or less rigid. Knowledge can be produced or modified to fit contexts, contexts can be modified to increase receptivity to knowledge, and facilitation can take several forms that may be more or less appropriate to increase the prospect of uptake given consideration of the other two domains.

2.2.8 Producing and adapting knowledge to fit its context

The value of user engagement in shaping knowledge production is strongly emphasized in the knowledge translation literature (Bowen & Martens, 2005; Kitson & Bisby, 2008; Lapalge 2010; Tetroe and Graham, 2007; van de Ven & Johnson, 2006). Engagement can move upstream to invite involvement in determining research questions or can take place in the production or synthesis of actionable knowledge for a specified context (Denis & Lomas, 2003; Rycroft-Malone et al., 2016; Shine & Bartley, 2011). Where researchers and knowledge users are contextually embedded and working
collaboratively they are more likely to share understandings, agree on objectives, ask relevant questions, and produce usable knowledge (Bowen & Martens, 2005; Green, 2006; Kitson et al., 2013; Lavis et al., 2003; Lomas, 1993).

The literature strongly supports interactive processes of knowledge production and use; however, there is also some recognition that good results may be limited to circumstances where there is a predetermined user and where shared values create contexts amenable to collaboration in knowledge production, translation and use (Contandriopoulos et al., 2010; Donnelly et al, 2018; Gagliardi & Dobrow, 2016; Ginsberg et al., 2007; Kothari & Wathen, 2013). Engaging users in knowledge work relies on stable contexts that support interactive practices. Motivation to engage in the development of knowledge may be limited to knowledge that is compatible with the beliefs and values of participants and directed toward goals acceptable to existing (status-quo) structures and priorities (Boswell & Smith, 2017; Gagliardi et al., 2014; Johnson & May, 2015; May & Finch, 2009; Oliver et al., 2019).

2.2.9 Modifying context to increase receptivity and capacity for use

While the move in knowledge translation literature toward interactive and integrated approaches has focused attention on the potential for knowledge to be developed or modified to suit contexts for implementation (e.g. Kitson & Bisby 2008), evidence from evaluation shows that interactive engagement can also be transformative for the culture of organizations through what Patton (1998) referred to as process use. Participation in forming questions, collecting data, and interpreting findings can orient organizations more strongly around knowledge and increase their capacity for ongoing learning. The capacity of organisations to use knowledge is discussed in the knowledge translation literature as
receptivity or absorptive capacity (Harvey, Jas & Walshe, 2015). It refers primarily to how organizations communicate, understand, and integrate new knowledge (May & Finch, 2009) and how they monitor effects and learn from new experience (Harvey & Kitson, 2016).

While contexts may be analyzed for receptivity and their capacity to understand, and participate in knowledge production and sharing, contexts may also misalign with knowledge through a lack of capacity to act. Organizations or systems may have insufficient infrastructure, skills or resources for implementation (Carden, 2009; Dobrow et al., 2006; Ellen, 2018; Gagliardi & Dobrow, 2016). In these circumstances, improving the capacity to act may have implications beyond single organizations and may require engagement with the challenging prospect of appealing for additional resources or influencing the political will to act.

2.3 Context-informed knowledge translation

This review recognizes substantial progress over recent decades in integrating contextual considerations in the generation and use of sound knowledge, particularly through attending to user priorities and interactive work in relatively stable health service contexts (Jacobson Butterill & Goering, 2003; Squires et al., 2015). Researchers developing the PARiHS model have been studying contexts in health service settings for more than 20 years (Harvey & Kitson, 2016; Kitson et al., 1998; McCormack et al., 2002; Harvey & Kitson, 2015; Harvey Jas & Walsh, 2015; Rycroft-Malone, 2004). Their combined work outlines a number of features of organizational context that can facilitate the use of research evidence. May and Finch’s (2009) normalization process theory also recognizes key characteristics of organizational contexts that make uptake of research evidence more
likely. While the learning is valuable, the priorities of leaders in specific organizational contexts with their clearly defined mandates may not include the type of action suggested by prominent findings of population health research.

Davis et al., (2003) noted that few knowledge translation authors explicitly state the extent to which their models are designed for health service contexts or for public health promotion or policy applications. Fewer still have looked systematically at contexts to consider how knowledge translation in different levels of policy may differ from health information campaigns or the application of experimental findings in clinical settings (Fafard & Hoffman, 2020).

The dissemination and interactive models that are specifically designed for health services often appear to assume unstated conditions such as agreed objectives and stable and adequate funding and implementation capacity. In many clinical settings these assumptions may be justified. By contrast, public health action often calls for intersectoral or multi-level coordination that can disrupt existing structures or can be opposed by interest groups and stalled for decades (WHO, 2019).

The need to accommodate multiple perspectives can introduce uncertainty and disagreement about what will be considered as appropriate action (Armstrong et al., 2013; Glasgow et al., 2012; Grimshaw et al., 2012; Lomas, 2005; Prewitt et al., 2012). Rushmer et al. (2019) acknowledge the involvement of multiple stakeholders in population health knowledge translation. They suggest that given the complexity that multiple perspectives and priorities introduce, the best context-informed guidance could be in the form of heuristics or principles that are “contextually coloured in” in each case (Rushmer et al., 2019, p. 142).
Several authors with a policy focus have discussed identifiable challenges for knowledge translation and suggested principles to guide approaches. (Smith et al., 2014; Reed, 2014; 2016; Parkhurst, 2017). However, while identifying some important issues, these authors do not consider whether contextual conditions might either facilitate action or represent an obstacle to effective action depending on the knowledge. For example, when promoting a principle of representation and acknowledging all stakeholder positions, Reed (2014) points to the greater value of engagement with stakeholders who have more power to act as a facilitator of uptake. However, if the research challenges status quo arrangements, any analysis of power will need to consider alignment with the priorities of powerful stakeholders as either an obstacle or a facilitator of effective action.

The Context and Implementation of Complex Interventions (CICI) model (Pfadenhauer et al., 2017) has continued to develop from the work of Damschroeder (2009) and the PARiHS model to consider contexts in multi-institutional implementation settings. Their framework foregrounds the role of context, which it breaks down into seven domains that provide different lenses for considering barriers or facilitators to specific interventions. The Pfadenhauer et al., (2017) model explicitly recognizes that interventions compete for attention and resources with other interventions that are focused on quite different outcomes. This model therefore brings the idea of contestation into the realm of population health knowledge translation. While the Pfadenhauer et al., (2017) model provides useful insight about context, the model does not provide much guidance about how to use the contextual information if analysis suggests that contexts are not amenable to knowledge translation. The model appears to assume that once agents of implementation understand the challenges they will know how to work with them to increase implementation success.
Understanding resistance that is unrelated to the academic rigor of information or the potential societal value of proposed population health interventions appears to remain an important area for further inquiry. Public health knowledge translation may benefit from learning where to adopt a societal rather than an organizational perspective.

The potential to provide generalizable guidance for knowledge translation through systematic analysis of contexts across a range of institutional, intersectoral, and political spheres is clearly ambitious. However, if knowledge translation is to have optimal population health impact, it must be applicable in contexts beyond health care institutions and be capable of promoting action that may challenge status quo social arrangements where these are associated with poor population health (Armstrong et al., 2006; Hoffman et al., 2019; Masuda et al., 2014; Murphy & Fafard, 2012).

A framework provided by Contandriopoulos et al., (2010) provides a promising starting point. Building on the work of Weiss (1979) and making clear links between contexts and knowledge translation approaches, it suggests that in some circumstances, political use of knowledge may be a necessary component of knowledge translation.

Population health can be seen as inherently political because socioeconomic status has been so clearly established as a modifiable determinate of health. Population health research frequently challenges racism, gender discrimination, class divisions and other forms of stratification that support inequities (Embrett & Randall, 2014; Greer et al., 2017; Hoffman et al., 2019; Pearce, Wesselink & Colebatch, 2014). Within this awareness, practitioners can be seen as naïve for calling for policy to address social determinants without also showing a willingness to engage with understanding of how political factors
can prevent policy uptake or be influenced by powerful groups acting in their own interests (Gagnon et al., 2017).

While this thesis is not a political science thesis, it investigates how politicized contexts influence knowledge translation in an organization that openly aims to influence public policy as well as to inform practice at service provision. If approaches to knowledge translation are found useful to the extent that they address identifiable contextual barriers (including politicized resistance or contestation) improved understanding could contribute to more effective, context-informed, knowledge translation.

2.4 Knowledge translation challenges for policy applications

Researchers examining the limited success of knowledge translation to improve population health through public policy note that practitioners seldom engage sufficiently with the politicized context of public policy development (Bowen et al., 2009; Petticrew et al., 2004; Pielke, 2007; Cairney, 2016; Cairney & Oliver, 2017; Fafard & Hoffman, 2020). Trying to influence policy development without a solid appreciation of the processes and influences involved may be part of the explanation for low levels of success (Contandriopoulos et al., 2010; Nutley, Walter & Davies, 2007; Weiss, 1999; Wesselink & Hoppe, 2011,).

Rational-linear models of policy development have been heavily criticized as over simplistic (Lomas, 2005; Nutley, Walter & Davis, 2003; Weiss, 1980; 1982). Despite this criticism, different stages (even if overlapping and iterative) can be discerned in policy cycles. These include framing issues, defining problems, setting agendas, considering options, making decisions, promoting adoption, implementation, and evaluation. Each stage may be characterized by competition for attention and resources (Stone, 2012). Each stage
also presents different contexts in which to bring evidence into consideration (Crewe & Young, 2002; El Jardali & Fadlallah, 2015; Pittman, 2006). Different stages may also rely on knowledge of different types. Knowledge describing a problem is relevant in framing and raising the salience of problems while considering options to respond must look to evidence about the effectiveness of solutions (Sohn, 2018).

One frequent error, according to authors critical of current practices of knowledge translation for policy, is to assume that policy development restricts its focus to one problem at a time and considers decision-making as a single event rather than a (sometimes extended) dynamic process involving many disparate players and influences over time (Weiss 1980; 1982). In reality, there are many trade-offs and opportunity costs to be considered. De Leeuw, Clavier & Breton (2014) use the metaphor of juggling; policy makers need to keep many balls in the air at once.

Weiss, (1999) observed that the number of people and systems involved at different levels of seniority and bureaucracy often means that any “decision” is more like a sequential closing off of options and a drift toward solutions through hundreds or perhaps thousands of small decisions that tend to gravitate to familiar and existing practices as the policy development process moves along. Policy “accretes” gradually as ideas interact with institutions and interest groups; options get dropped from consideration along the way (Weiss, 1980; 1982). Policy development becomes a contest for attention and resources (Head, 2008; Weiss, 1991; 1999). Exploring how best to promote knowledge use in population health applications may benefit from greater attention to scholarship that investigates policy through a political science lens.
2.5 Policy theory

The potential contribution of policy theory is its explicit consideration of the politicized and diffuse aspects of policy development. Theories discussed in this section include multiple stream theory (Kingdon, 1995), punctuated equilibrium theory (Baumgartner & Jones, 2002), power elite theory (Domhoff, 1990), advocacy coalition theory (Sabatier, 1987; Sabatier & Wieble, 2007), social movements (Brown & Fee, 2014) and policy development described through the metaphor of juggling (de Leeuw, Clavier & Breton, 2014).

2.5.1 Multiple stream theory

In multiple stream theory as described by Kingdon (1995), significant policy development becomes possible when policy windows open through alignment between three “streams”: a problem stream, a policy stream, and a political stream. Kingdon’s influential model suggests that evidence and information influence the problem stream from the stage of agenda setting through engagement in identifying and framing problems in ways that attract attention and make a problem a policy priority. Evidence can influence the policy stream by suggesting potential avenues of intervention and providing useful input for prioritizing and selecting between them. Evidence can influence the political stream by changing public awareness and by strengthening political will through attracting support for action (Kingdon, 1995).

2.5.2 Punctuated equilibrium theory

Baumgartner and Jones (2002) developed their punctuated equilibrium theory based on institutional theory (e.g. DiMaggio & Powell, 1983). They noted that important change in institutions often comes in large leaps that occur when something (like a crisis or new
information) unsettles the equilibrium that characterizes large bureaucracies and their orientation to maintain the status quo. They recognize that despite the suddenness of changes, the groundwork for change is often established over a long period of time. Where the intent is transformational change, framing of issues is emphasized as a key to engaging others who can then influence the process and make an issue more salient and urgent.

As in Kingdon’s (1995) view, the importance of knowledge in Baumgartner and Jones (2002) model is in drawing people into the process, modifying the way a problem is seen and increasing support for action. Issues and potential solutions become salient to these new stakeholders through new understanding, media attention, and/or a more compelling frame. Change eventuates when existing ideas have gradually become accepted so that they can be selected and applied to a problem that is seen with a new lens or a deeper urgency. An example is the way that crises can inspire governments to look at what others are doing internationally (Dolowitz & Marsh, 2000). Where knowledge has entered common discourse or is in prominent use elsewhere, it becomes readily available in times of crisis or opportunity.

2.5.3 Power elite theory

Another contribution to understanding the policy making process comes from the recognition that power can be concentrated among a few people that have high influence. From this perspective, building relationships with powerful people and concentrating on persuading or informing them is a way to bring understanding of the power dimension into influencing the policy process (Domhoff, 1990).

Each of the theories described above recognize the role of power and the need for political support through allies or public pressure where the intent is transformational
change. Only power elite theory fails to emphasize the importance of pressure from publics or coalitions in supporting change. While public engagement may be a key component of making some public policy acceptable, it may not be a necessary component in all policy making. For example, Drummond (2014) suggests that stakeholders should carefully consider which issues warrant the type of focussed attention needed to generate public support.

2.5.4 Advocacy coalition framework

Wieble (2008) points out that policy networks are influenced by advocacy coalitions who form around shared beliefs and who compete for attention and resources (Jenkins Smith et al., 2014; Sabatier, 1987). The role of coalitions and advocacy as a means of building support for a position can appeal to public support or can directly target those with power to act. Recognizing and supporting issue-based or values-based coalitions becomes explicit in the advocacy coalition framework. Publics or stakeholders may be persuaded by evidence to recognize their allies and to form and maintain coalitions that exert pressure on policy networks and the political processes that support them (Oxman et al., 2009; Sabatier, 1987). Kershaw et al. (2017) describe a deliberate application of advocacy coalition theory in knowledge work to advance the use of evidence about social determinates of health.

The view that advocacy is an important part of improving conditions for marginalized populations is presented well by DeSantis (2010) who points out that powerful leaders often resist change through disallowing advocacy. They use the term “advocacy chill” to point out how advocacy is actively discouraged as a way of resisting change to the status quo.
2.5.5 Social movements

Also focusing on generating indirect support for public policy action is the concept of social movements in health (Brown & Fee, 2014). Action to reduce harms that are not an existing priority for those in status quo leadership roles is often led or driven by advocates or the people who are affected. Brown and Fee (2014) point to the health of children and the use of substances as two examples in urban health that illustrate how social pressure has been associated with progress toward better population health. It may be important to note that the political science literature differs markedly from the knowledge translation literature in its focus on values, alliances, power and advocacy as part of paving the pathway to promoting policies that research suggests will be valuable for population health (Baum et al., 2013).

2.6 Three separate domains: knowledge, context, and facilitation

To build on the insight that knowledge translation results from interaction between three domains of knowledge, context, and facilitation (Kitson et al., 1998) the following section reviews literature about each of these three domains.

2.6.1 Knowledge

Rushmer et al., (2019) claim that it is “crucial to consider what is being shared” (p.130). The idea that characteristics of knowledge might influence the likelihood of its use has received surprisingly little attention in the knowledge translation literature, perhaps because knowledge translation grew out of the positivist epistemologies of evidence-based medicine (Doane et al., 2015). Several characteristics of knowledge may be relevant to how it can be promoted in knowledge translation. LaPaige (2010) suggests categories of procedural, social, factual, contextual and pragmatic knowledge. Ward (2017) paraphrases
Aristotle’s distinctions as scientific knowledge, technical knowledge and practical wisdom. These categories suggest attention to who has been involved in producing the knowledge. Pragmatic knowledge inherently reflects the context of its production and suggests the role of hard won experience. In a chapter of Donaldson, Christie and Marks’ (2009) book about what counts as credible evidence, Schwandt (2009) concludes: “at minimum, an adequate theory of evidence includes analyses of several kinds—the character of evidence, the ethics of evidence, the contexts of the application of evidence, and the nature of rationality and argumentation (including the notion of an evidence “base” for decision making)” (p.199). His analyses recognize ethical and contextual elements, and the extent to which an evidence base that relies on synthesis must be constructed and promoted in social settings.

Knowledge quality is a primary concern for ethical and practical reasons. A number of authors make it clear that when discussing knowledge translation they are referring to knowledge about interventions produced through research (Graham et al., 2006; Grimshaw et al. 2012; Ottoson, 2009; Rychetnik et al., 2012). Controlled experiments and systematic reviews have been recommended as the most appropriate starting point for knowledge translation (Grimshaw et al., 2012).

2.6.1.1 Knowledge certainty

Despite being based on a premise that acting on the best evidence will lead to better outcomes, the knowledge translation literature has not spent a lot of time establishing that the promised results eventuate when knowledge is applied. Greenhalgh and Fahy (2015) note that the majority of knowledge translation studies they reviewed were content to report evidence-informed action without the extra step of demonstrating outcomes.
Oliver et al. (2014) list access to quality evidence as facilitator of knowledge translation in their review of facilitators and barriers to knowledge translation. However, their definition of quality mixes relevance, reliability and clarity under one heading. Their judgment of quality could therefore be based on perceptions of fit with context and relevance to existing goals as much as to academic rigor or internal validity. Academic research findings are one source of information among many and are reported to be used less in daily decision making than experience, expert advice, internal data and reports, and online information (Zardo & Collie, 2014) or below affordability, equity considerations, or the number judged likely to benefit in prioritizing resource allocation (Cromwell, Peacock & Mitton, 2015). Without dismissing the importance of sound knowledge, it appears that beyond generalized attitudes to valuing research (Mallidou et al., 2018) research quality may not be a strong factor for guiding how best to facilitate its uptake.

2.6.1.2 Knowledge synthesis

The way in which knowledge is synthesized may be informative when considering knowledge facilitation. Syntheses can be conducted by scientists, reviewers or by experts in the subject field (Haynes et al., 2011; Lederman, 2014). Synthesis can also engage practitioners, community members and potential users of the product of synthesis (Gagliardi, Kothari & Graham, 2017; Manson, 2016; Tricco, 2016).

As discussed earlier in the literature review, a reliable way of assuring that knowledge will fit in contexts of use is to involve users in the production and synthesis of the knowledge (Landry et al., 2006). By engaging potential users, knowledge is generated to incorporate the views, priorities, and knowledge of stakeholders who already understand the challenges and capacities in their own contexts (Chambers, Glasgow & Stange, 2013;
Kitson et al., 2013; Rycroft-Malone et al., 2016). Depending on who is involved, collaborative knowledge production inherently involves interactive approaches that may be used to facilitate its translation. Where syntheses in social settings incorporate diverse information from multiple sources, interactive knowledge exchange can also privilege or exclude different types of knowledge as part of ensuring a better fit. Where there is disagreement, powerful voices may dominate or disagreement and polarization may present a barrier to progress (Contandriopoulos et al., 2010). Where shared objectives and trusting relationships prevail, collaboration is more likely to be effective (Oliver et al., 2014).

2.6.1.3 Knowledge of problems or knowledge of solutions

This distinction between problem knowledge and solution knowledge parallels Sohn’s (2018) reference to first and second order stages in policy development. Research that clarifies a problem can draw attention to a risk or harm that was being ignored and be used to frame a problem and set a policy agenda. In contrast, when deciding how to respond, the objective can be to identify solutions that can be replicated with fidelity to established procedures (Chambers Glasgow & Stange, 2013). Solution knowledge must provide clear direction even where knowledge will be adapted for implementation in context.

2.6.1.4 Knowledge that challenges the status quo

Knowledge that challenges status quo structures or power relations has attracted specific attention in the literature (Contandriopoulos et al., 2010; Weiss, 1979). Where knowledge challenges status quo power arrangements or structures, it also challenges the benefits that powerful people enjoy; willingness to collaborate in its production and use should not be expected (Weiss, 1979). As summarized by Haynes et al., (2018):
…the sticking point appears to be the capacity of individuals and organisations to facilitate genuine collaboration (p.19).

One of the principle ways that knowledge can challenge status quo arrangements is by calling to reduce inequity and recommending allocation of resources toward problems that have not previously been prioritized (Hawe, 2015). As stated by Denis et al., (2002), “many of today’s innovations are not easily reduced to a decision within a physician’s office: They have broader organizational implications, sometimes requiring displacement of resources” (p.60). Because resources are finite, new expenditure generally requires raising revenue or cutting other services. Reallocation of resources challenges the status quo and implies losers as well as winners. If influential people perceive action to be against their own interests, even for the greater good of population health, collaborative approaches can stall.

2.6.2 Context

The idea that context is a core concept for knowledge translation has been prevalent from early writing about knowledge translation and use (Crewe & Young, 2003; Dobrow et al., 2004; Rogers, 1963; Jacobson et al., 2003; Kitson et al., 1998; Mitton et al., 2007; Rycroft Malone, 2004;). However, it is not always clear how context should be operationally defined (Squires et al., 2015). For example, context can be defined as “the environment or setting in which the proposed change is to be implemented” (Kitson et al., 1998, p. 150). May, Johnson, and Finch (2016) acknowledge the appeal of place-based definitions of context as the simplest way of establishing boundaries. However, definitions that describe contexts as a physical setting can overlook social and dynamic factors and miss the crucial point that contexts might change depending on the intervention (Jacobson et al., 2003; Pfadenhauer et al., 2017; Shoveller et al., 2016).
Kitson Harvey and McCormack point to interaction between knowledge, context, and facilitation and Pfadenhauer et al. (2017) note “boundaries between what constitutes the intervention, its implementation, and context are often blurred” (p.2). From the perspective of context-informed knowledge translation, “context for what?” is the defining question (see also Contandriopoulos et al., 2010; Damschroder et al., 2009; Frohlich et al., 2002).

Pfadenhauer et al. (2017) propose seven domains for analyzing context to identify barriers with a specific intervention in mind: geographical, epidemiological, socio-cultural, socio-economic, ethical, legal, and political. They treat “setting” as a separate aspect to context. Recognizing potential contextual barriers in specific settings is recognized as a useful starting point in planning to overcome them (Andermann et al., 2016; Dobrow et al., 2004; Glasgow et al., 2012; Jacobson et al., 2003; Kitson et al., 1998). Some examples of contextual features of settings that are recognized as generally harmful to prospects for implementation of recommendations are role instability, uncertainty, and resource limitations ( DAMSHROUDER ET AL., 2009; ESTABROOKS ET AL., 2009; SCOTT, ESTABROOKS & ALLEN, 2008). As a mirror to barriers, but contingent on which knowledge is promoted, leadership support for specific ideas or practices is recognized as a facilitator of uptake (Harvey et al., 2015; Rycroft-Malone, 2008) as is resource availability (Harvey, et al., 2015) and the presence of structures that can mandate or support change (DAMSHROEDER ET AL., 2009; DOBROW ET AL., 2004). A commitment to evidence-based practice is another organizational characteristic noted to be beneficial for knowledge translation (May Johnson & Finch, 2016; Rycroft-Malone 2008).
Availability of resources has been identified as an important dimension of receptivity (Cammer et al., 2014). Working within existing capacities and emphasizing alignment with contextual characteristics have been offered as useful direction for increasing knowledge uptake (Head, 2015). However, accepting contextual limitations may exclude the translation of much population health knowledge. For example, Carden (2009) discusses an absence of implementation capacity as an indicator that research needs to find solutions that are more feasible. This advice could be taken to suggest that population health interventions calling for action beyond existing organizations are of academic interest but not appropriate for knowledge translation.

2.6.2.1 Considering external influences

Glasgow and colleagues (2012) explored the influence of factors external to organizations. Their conceptualization of external contexts broadly parallels Bronfenbrenner’s (2005) description of ecological levels and it includes interpersonal, intrapersonal, organizational, policy, community economic and societal levels, reinforcing the view that both micro and macro perspectives may be required. Differentiating organizational from external contexts recognizes how external contexts may impact the feasibility of obtaining needed support or resources (Dobrow et al., 2004; 2006; Jacobson et al., 2003; Seaton et al., 2018).

The idea that considering different levels of context may be relevant to population health work is compatible with an expectation that multiple and diverse user groups are likely to have a stake in whether or how knowledge is used. Jacobson et al. (2003) focus on different user groups as part of defining contexts and they expands the focus of analysis to the history of user group stability and the various influences that affect them over time.
These issues point to the need for an operationalization of contexts that can encompass
dynamic issues, both in single organizations and in intersectoral or multi level systems.

2.6.2.2 Dimensions of context

Contandriopoulos et al. (2010) investigated context in relation to knowledge exchange for collective action. They reviewed articles about knowledge exchange using a systematic, double-sided snowball sampling technique following the references and citations in what they called seminal articles. Guided by Weiss’ (1979) meanings of research utilization, they analyzed how contexts were associated with different approaches to knowledge exchange and proposed a practical framework to help explain how different contextual features affected knowledge exchange. Their review restricted its focus to interventions that aimed to influence action at collective levels, rather than through the self-directed action of individuals.

Contandriopoulos et al. (2010) distilled their analysis of context into three broad dimensions: cost sharing, polarization, and social structuring. The social structuring dimension has much in common with conceptualizations of organizational context as setting by other authors (Jacobson et al., 2003; Glasgow et al., 2012; Harvey & Kitson, 2015) and it can be seen to include characteristics such as institutional channels for communication, social norms, trusting relationships, and leadership styles and priorities.

The category of cost sharing (Contandriopoulos et al., 2010) refers to any of the multiple ways that knowledge producers and users share investment in the production and exchange of knowledge for implementation. Users can invest in exchange through contributing financially, participating in the knowledge production itself, or participating in processes of sharing and promoting knowledge use. Cost sharing implies a form of
interactive engagement in which action plans and implementation strategies will incorporate input from both researchers and potential users. Contandriopoulos et al., (2010) note, “close collaboration between users and producers or intermediaries can exist only when a viable cost-sharing equilibrium is found” (p 464). Attention to who is driving the knowledge exchange parallels a distinction described by Lavis et al. (2006) as push, pull or exchange. A cost sharing equilibrium implies interactive use and represents a balance of input between researchers and users. An absence of cost sharing can suggest disagreement or indifference and mutual investment is therefore desirable and a sign of engagement and interest in the specific knowledge. Where potential users invest in knowledge exchange, their receptivity to the type of findings that inspired their investment is enhanced (Harvey et al., 2015). Aiming for a cost sharing equilibrium can also sensitize knowledge translation practitioners to contextual constraints and discourage them from ambitious targets (Wesselink & Hoppe, 2011).

The third dimension of context in the Contandriopoulos et al. (2010) framework is polarization. Weiss (1977) noted that knowledge can be inherently more or less disruptive to status quo structures and power relations. The link between polarization and resistance to knowledge that challenges status quo arrangements is straightforward. Contexts become polarized between those who promote and those who resist action. Polarized can fall along ideological lines or can arise when knowledge raises options for expenditure that provoke competition between factions for resources. Polarization is often an issue in relation to initiatives that aim to reduce inequities since, as Hawe (2015) states, “the capacity for an intervention to redistribute resources is its chief mechanism to address inequity” (p.310). Greater cost implies greater potential for resistance. The need for approaches that can be
used in polarized contexts seems especially relevant to population health due to the historical and ongoing struggles to attract and maintain funding (Frieden, 2014).

Contandriopoulos et al. (2010) conclude that “the crucial element in understanding or designing knowledge exchange interventions is not so much the level of polarization as the way in which the system is divided and polarized (p 462). The way that power is distributed becomes crucial. Polarization can be invisible where dominant groups control the agenda. Polarization becomes salient when factions or groups promote an idea effectively enough that it presents a credible challenge. Denis et al. (2011) note in their discussion of “escalating indecision” that different perspectives on a problem can establish stasis through a balance between competing factions who keep an issue on the table even where there is little prospect of collaborative resolution. Until a new idea gains sufficient support to overcome this stable state of inaction, the status quo prevails.

2.6.3 Facilitation

Harvey and Kitson (2016) consider facilitation to be the domain most in the control of knowledge translation practitioners: “facilitation is the construct that activates implementation through assessing and responding to characteristics of the innovation and the recipients (both as individuals and in teams) within their contextual setting” (p.4). Facilitation should recognize potential challenges and respond by helping knowledge to fit the context of its intended use (Glasgow et al., 2012). In order to develop theory about how facilitation might be intentionally adapted to increase prospects for uptake, it is necessary to establish that different facilitation options are available and to understand how different options might help address particular contextual challenges.
In 1979, Carol Weiss proposed a relatively comprehensive description of seven ways that knowledge can be used. It continues to be influential more than 40 years later. Three of the forms, a knowledge driven model, a problem solving model, and an interactive model correspond to widely discussed approaches in knowledge translation.

Weiss’ (1979) “knowledge-driven” model comes out of the idea that basic science produces knowledge through curiosity driven research. Knowledge-driven models achieve translation or action when users happen upon an application or when researchers promote their findings to those motivated and positioned to enact them. Conversely, Weiss’ (1979) problem-solving model relies on the identification of a problem as a starting point. Research findings are either produced or located to respond to the problem. These two models incorporate separate “producer push” or “user pull” linear/rational pathways to instrumental use (CIHR, 2012; Lavis et al., 2003).

A third interactive model (Weiss, 1979) broadly parallels the concept of exchange (Lavis et al., 2006) or integrated knowledge translation (CIHR, 2012). Interactive approaches to knowledge translation continue to attract research attention and support the value of collaboration when users can be motivated to engage with knowledge production and exchange.

The political model (Weiss, 1979) departs from the dominant knowledge translation literature and is applied when research is used to argue for a position that may align with existing user objectives, values or agendas. Knowledge “becomes ammunition for the side that finds its conclusions congenial and supportive” (p. 429). Weiss (1979; 1991; 1999) recognizes that while this type of use can be an important factor in determining action, it calls for ethical responsibility around openness and integrity.
Many evidence-informed proposals have been made for saving public money by devoting more resources to population-level interventions such as integrating care and taking policy action to prevent exposures that lead to poor health. In 2013, leading health experts came together in Canada to discuss why so little progress had been made on these fronts. Attendees largely agreed, “the path of health policy reform is clear, but politics impedes progress” (Drummond 2014 p. 57). Drummond concluded that those who want to see progress need to address “the lack of political will and political inertia and the absence of public involvement in the conversation” (p. 58) He added that “politicians lack the will to take on health reform because they are afraid the public won’t back them” (p.58). This type of statement supports engagement in what Weiss (1979) called political uses. It resonates with theories of how knowledge and ideas influence policy development where political uses are openly discussed (Baumgarten & Jones, 2002; Brown & Fee, 2014; de Leeuw, Clavier & Breton, 2014; Jenkins-Smith et al., 2014; Kingdon, 1995; Sabatier, 1987).

Tactical use is a variant of political use. It is perhaps better seen as a form of non-use. Claims that research is not yet conclusive allow decision makers to appear concerned while avoiding action. Uncertainty or inconsistencies can be used in polarized contexts as a rationale for postponing action (for example, tobacco companies, sugar producers, and fossil fuel companies benefit in the short term from casting doubt on evidence about harms that result from their work).

Weiss (1979) also identified what she called enlightenment use; when ideas become accepted as common knowledge among groups, networks, or publics, they influence how problems are understood and limit the range of solutions that can be seen as plausible.
Study of the potential value of enlightenment use in policy networks has been re-invigorated by a number of case studies and research syntheses where it is often referred to as conceptual use (Court & Young, 2003; Head 2015; Hyde et al., 2016). While establishing that conceptual use leads to action on the ground is challenging, case study investigations suggest it is an important component of policy development (Carden, 2009).

Following Weiss’ (1979) influential work, Patton proposed process use as a type of use she had not included. Patton (1998) noted that research or evidence can change the way things are done as opposed to what is done. By engaging in processes of producing, refining, and sharing knowledge, skills of organization members and the capacity of organizations or systems can be enhanced.

2.6.4 Combining approaches in knowledge translation

The types of research use described above are not necessarily discrete from one another in practice nor do Weiss or other authors claim that they must be used in isolation. Knowledge can travel on many pathways and it is possible for more than one form of use to be promoted in knowledge translation initiatives (Bowen & Zwi, 2005). The important point to make in this review is that each of the models or types of use engages with contexts and potential users in different ways. The intent of this research is to establish a range of approaches and examine the conditions in which each can contribute.

2.6.5 Knowledge gap

This review confirms a knowledge gap in understanding how contexts for population health knowledge translation, particularly those beyond single health service organizations, might be analyzed to provide useful guidance about facilitating knowledge translation. Despite the proliferation of articles recommending models and practices, the
fact that many reports of knowledge translation do not describe the nature of the knowledge they are built around nor the contextual attributes they work in may help explain why evidence of knowledge translation success remains elusive (Edwards, Zweigenthal & Oliver, 2019).

It is not yet clear the extent to which knowledge about structural and environmental factors that support inequities in society may need to be treated differently from knowledge that is designed to improve effectiveness or efficiency in existing organizations. While it is relatively easy to identify polarization as a feature in policy development or priority setting contexts (Head, 2008; Mitton & Donaldson, 2004; Weiss, 1991), the knowledge translation literature has not yet fully engaged with the contested aspect of these forums. Also frequently overlooked in the knowledge translation literature is the contribution that can be made by intentional use of knowledge to change understandings and discourses as opposed to focusing on instrumental action.

The research questions that emerge from the literature review and are stated on pages 12 and 13 all focus on context-informed knowledge translation. They seek to improve how the domains of knowledge, context, and facilitation can be operationalized (Kitson et al., 1998) and to recognize how analysis of these domains might help practitioners anticipate challenges and make context-informed choices when developing theories of change to address the challenges they identify. This research considers a broad range of contexts for knowledge translation and accepts that a journey to improve population health may require new resource allocation, new infrastructure, and public policy as necessary components (Edwards & Di Ruggiero, 2011).
Based on the research presented above, and guided by Contandriopoulos et al. (2010) as a theoretical foundation, the following tentative claims are made about how knowledge translation in the case study should reflect links between specific approaches and identifiable knowledge-context configurations.

- Diffusion approaches are expected to be more evident where networks or systems have stable and cohesive structures.

- Where knowledge outlines a problem more than guiding a solution, the use of interactive practices and synthesis are expected to ensure that interventions incorporate the contextual knowledge, values, and priorities of potential users.

- Where there is polarization and powerful interests or factions do not support action suggested by evidence, instrumental and interactive uses will not prove productive and practitioners will use political or argumentative approaches.
Chapter 3: Research Methodology

This chapter describes methodological decisions that shaped the study and outlines assumptions being made, the subjective position of the author, and the rationale for the study design. Ethical issues and details of study procedure are described in a separate method chapter.

3.1 Objectives

The current study aims to contribute to theory that can guide knowledge translation by investigating how characteristics of knowledge products interact with specific characteristics of context to influence the use of different approaches to knowledge translation. This is addressed by uncovering what experienced practitioners in a case study know or have learned as they plan and apply their implicit or explicit theories and use knowledge to affect change in different circumstances. The case study is conducted with an established interdisciplinary research partnership (Human Early Learning Partnership, HELP) that specializes in promoting population health action informed by the evidence they produce.

3.2 Overview

Having described the research questions in the introduction (p 14), I reflect briefly on what I bring to the study in terms of my subjective position and my orientation to the philosophical and epistemological issues of the study. I then present a rationale for selecting case study method and describe how the case study is carried out at two levels to incorporate a nested comparative case study element.

In keeping with Yin’s (2014) recommendation to include both method and source triangulation, this study brings several data sources and several methodological orientations
to bear on each of the research questions. Knowledge translation messages in publications and reports were analyzed using an automated and replicable search strategy to incorporate a quantitative element to help understand emphasis and the nature of actions that the knowledge translation aimed to achieve. Qualitative analysis of interview data was used to explore the range of knowledge translation approaches used and the thinking behind where and why these different approaches are used. The use of template analysis (King, 2012) was used to establish criteria for analyzing the domains of knowledge and context and describing the range of knowledge translation approaches (facilitation). The decision to use template analysis was central to ensuring that data were being used to build on existing knowledge.

3.2.1 **Personal position and what I bring to the study**

My choice to study the translation and mobilization of knowledge through a PhD dissertation reflects personal interest as well as recognition of the potential value of the research area and identifiable gaps in knowledge established by previous research.

My particular interest in the challenges associated with mobilizing knowledge about the social gradient in health grew out of my professional experience as a psychologist where I became persuaded that many of the mental health problems that I encountered could have be prevented by intervention to improve environmental conditions in early childhood development.

I recognized that despite the growing evidence base and general awareness of the importance of the early years, there had been little success in using evidence to address the systematic nature of the problem at its causes. I came to my current study with some firm opinions. I report this here in recognition that, despite being backed by research, my
conviction could introduce potential for bias in relation to how I might seek or privilege evidence that supports my opinion or orientations.

I have undertaken this dissertation committed to monitoring myself, tracking my subjective position and documenting my reflections in the iterative process of engaging with the case study and with data collection and analysis. I am aware that my values orientation makes me see evidence about a social gradient as a problem to be solved as well as a reality to be accepted. I have continued to invite challenges from my committee in relation to any bias that may compromise the research.

3.2.2 Philosophical and epistemological stance

The overall philosophical stance that I adopt in this study is realist (Bhaskar, 2013; Pawson, 2006). From this position, and compatible with my personal orientation, I assume that social and physical realities exist independent of subjective perceptions about them. However, the underlying reality can only be seen through socially influenced perspectives and a realist orientation recognizes that what is reported to be true or to be effective may be context bound. While I adopt realism to explain my ontological position, I have not chosen to be strictly guided by methods of realist inquiry (Pawson, 2006; Wong, 2013). For methodological guidance I have relied largely on Yin (2014) who has provided well-established methodological guidance and has been particularly helpful for framing the comparative case component of the study.

The essential realist question in relation to intervention evidence asks what mechanism, in what context, produces what outcomes or “what works for whom in what context” (Pawson, 2006; Wong, 2013). My question about the extent to which facilitation approaches can be informed by understandings of context is less focused on establishing a
direct causal chain than formal realist inquiry would be but it is compatible with a realist orientation. It is also compatible with an epistemological view that context-specific realities can be revealed to some extent through the experience-based perceptions of informants and through codified texts and artifacts produced and referred to by relevant actors as discussed by Bhaskar (2013), White (1980) or Sayer (2000). In reviewing implications of methods that apply a realist stance, Wynne and Williams (2012) conclude: “We have identified five core methodological principles drawn from the ontological and epistemological assumptions of the philosophy of critical realism. We have also established the case study as the primary research design in this paradigm” (p 803). They cite Yin as an authority on case study research.

In the current study, the phenomenon of interest is knowledge translation, the discernable events are the specific approaches used, and the study examines the factors that lead practitioners to use specific approaches in the different circumstances they work in.

A realist orientation has been widely used in previous case study research. Case studies can accommodate both critical and interpretive elements and attend to theory and context (Crowe et al., 2011). Case study method is well suited for investigation of complex phenomena in specific settings (Crowe et al., 2011; Stake, 1995; Yin, 2014). Dobson (2001) notes that a critical realist orientation is especially appropriate to exploring the context-specific use of theory where power is a consideration, as it is in this study. Creswell (2003) described research from a “post positive” stance as “the process of making claims and then refining or abandoning them for other claims more strongly warranted.” (p.7). This is an apt description of the design in this study.
Shearn et al. (2017) discuss realist assumptions as appropriate with “messy” or complex interventions, highlighting the importance of examining internalized theory in understanding how decisions are made and how action takes place. This advice supports inquiry into practitioner theories of change. In the present study, qualitative methods are used to “elicit what people [participants] know, think, or feel” about their practices of knowledge translation (Patton, 2002, p. 145). A key aim is to reveal and understand how decisions about what is needed to advance the use of knowledge are informed in relation to identifiable knowledge-context configurations. Participants’ subjective reports of their observations and experience are relevant data in the pursuit of knowledge about how decisions are actually made in specific settings (Wong et al., 2013).

3.2.3 Research design

Case study methods are suitable for investigating phenomena in depth and for answering questions about how or why things are done (Stake, 1995; Yin, 2014). The present study aims to uncover practitioner knowledge and make explicit the understandings that underpin choices made in knowledge translation planning and execution. The research design applies case study at two levels as part of achieving the type of methodological triangulation that Yin (2014) describes as a key strength of case study. At an overview level, the design looks at knowledge translation, the phenomenon of interest, from an overview perspective of the case study organization HELP. Nested within the larger case study, a comparative case element (Yin 2014) examines two narrower cases of the same phenomenon (knowledge translation) to test theory-informed expectations that approaches chosen will address identifiable challenges represented by knowledge-context configurations.
3.2.4 Suitability of case study

A case study approach allows a systematic and disciplined consideration of systems at multiple levels of interaction, and includes layers of perceptions and motivation (Crowe et al., 2011). Yin (2014) emphasizes the value of triangulation in case study research and the design allows access to relevant data from different methodological approaches and multiple sources that include a corpus of published articles, reports, and media articles, as well as interviews with experienced practitioners in diverse roles, a focus group, and publicly available web resources. While the design relies most heavily on data from interviews with experienced informants in different roles, document analysis and a focus group contribute to understanding and help to validate findings.

Each data source contributes to describing knowledge translation in the case study and to an understanding of how approaches are influenced, shaped, or constrained by the nature of the knowledge and elements of context. While examining the effectiveness of specific knowledge translation practices is not the primary focus of this study, retrospective access to data over time could allow consideration of the accuracy of coherent narratives that claim success or failure and as a further layer of validation (Befani & Mayne, 2014).

3.2.4.1 Defining cases

Yin (2014) defines a case study as “an empirical inquiry that investigates a contemporary phenomenon (context-informed knowledge translation) in depth and within its real-world context” (p. 16). HELP provides the real world context for the investigation. The case study involves examining the use of processes that may be used independently, synergistically, or sequentially to mobilize evidence-informed action. The extent to which
different approaches reflect and respond to understandings of how knowledge-context configurations represent different types of challenges is of primary interest.

3.2.5 **Data sources**

The research relies primarily on qualitative data from informants who have personal experience as producers, intermediaries, or users of the knowledge being translated or exchanged at HELP. Participants provide data about how, in the course of their work, they assess knowledge and knowledge translation opportunities and make decisions about how to proceed. The study deliberately recruits people who are positioned to apply evidence to their practice or policy to access a user perspective on how the process of knowledge translation works. It is important to note that while the acts of producing knowledge through research, exchanging or disseminating knowledge, and the use of knowledge can be discussed separately, it is not always possible to classify participants in this study as being either producers, intermediaries or users of knowledge. The interactive processes encouraged by the case study organization means that many participants have been engaged throughout the processes of generating, sharing and using new knowledge.

3.2.6 **Generalizability of findings**

Yin (2014) describes the importance of specifying from the outset how findings might provide generalizable new knowledge when undertaking case study. He discusses how his case study methodological recommendations are suited to producing holistic and rich description of a case as well as what he calls analytically generalizable knowledge (at the level of theory or identifying patterns). As Yin explains, a case, or even several cases, can rarely be assumed to represent a wider population of cases in a statistical sense, since
the case itself is the unit of analysis – with little access to information about the inherent variability of wider/diverse contexts or effects.

Despite these clear limitations, Yin (2014) insists that designing case studies with an objective of contributing to generalizable knowledge is both reasonable and achievable. In contrast with the probabilistic estimations of statistical methods that have their own limitations, qualitative data and analytical generalizability are oriented to making or supporting claims that lead to tentative prediction, guidelines, or principles.

In this study, I examine context-informed knowledge translation at an organizational level and through examining the extent to which theory-driven predictions hold in two comparative “sub” cases. The research questions focus on operationalizing generalizable ways of classifying knowledge and context and examining the extent to which these analytic classifications and similarly generalizable categories of approaches could be seen as meaningfully related to each other. The ultimate goal is to contribute to theory about context-informed knowledge translation at the level of principles or heuristics intended to be applicable in similar cases of knowledge translation. For example, the current study predicts that efforts to intervene on social determinants of health at the policy level will be likely to surface polarized views of how best to proceed. Powell (2014) notes that an equity agenda needs to overcome forces that prefer to maintain the status quo. In these circumstances, progress may need to rely on approaches that are strategically designed with a willingness to engage in argument or persuasion and that recognize policy development concepts that are discussed in policy theory.

The first case study research question (p14) is answered by drawing from categories described in the literature and modifying them through inductive analysis of interview data
to provide a menu of knowledge translation approaches evident in the organizational setting. Template analysis of qualitative interview data collected from participants in HELP knowledge translation is used for this purpose. The procedure is described below (p 83).

The second research question uses an inductive form of constant comparison (Glaser, 1965) to examine patterns of interplay between the three domains of knowledge, context, and the approach used to facilitate knowledge translation. It also inquires directly into the thinking of practitioners through inductive analysis of theories of change. The third research question includes a comparative element within the larger case and provides an explicit test of theory-based claims that identifiable patterns of relationships will be evident among the three domains of knowledge, context, and facilitation. The methodological and procedural detail of case selection, data collection and analysis are provided in the methods chapter that follows.

The two purposes, to provide an overview description of knowledge translation and practitioner rationale in the case study (questions 1 and 2) and a theory-building component (questions 2 and 3) reflect a distinction that Stake (1995) makes between intrinsic and instrumental case study (see Table 1). At the descriptive level the case study can be described as intrinsic case study (Stake, 1995). An intrinsic case study selects and aims to learn from a case that is informative in its own right in relation to the research questions. The second element of the study considers the extent to which generalizable categories of approaches (described in response to the first research question) are linked with (generalizable) knowledge-context configurations. By comparing findings with theory-informed expectations in the comparative component, generalizable propositions can be supported, refuted, or modifications to theory can be suggested.
Table 1 Incorporation of intrinsic and instrumental approaches

<table>
<thead>
<tr>
<th>Stake’s distinctions within case study</th>
<th>Type of case study</th>
<th>Phenomenon of interest</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intrinsic case study (Stake, 1995)</td>
<td>The spectrum and sequence of activities and approaches that are used at HELP and their objectives</td>
<td>To learn about a phenomenon from an illustrative case</td>
</tr>
<tr>
<td></td>
<td>Instrumental approach (Stake, 1995)</td>
<td>Implied and explicit linkages between characteristics of knowledge, contexts and approaches used</td>
<td>To develop generalizable theory or knowledge</td>
</tr>
</tbody>
</table>

Two comparative cases that adopt the instrumental aspect were selected to differ from one another on the basis of the knowledge products being translated and the implied contexts for their use: research and data related to the Early Development Instrument (EDI) in one case and the Middle years Development Instrument (MDI) in the other. The EDI was developed by Janus and Offord, (2000; 2007) to monitor early child development while the MDI (Schonert-Reichl et al, 2013) was developed to monitor developmental well being and the environmental influences that affect children in grades four to seven. Detail of the case selection procedure and descriptions of how the cases were expected to differ are provided in the method chapter.

The comparative cases are situated within the same research organization and focus on the same geographical region in order to more effectively explore the extent to which the different knowledge products and different dimensions of the context (the features used for case selection) result in differing emphasis on knowledge translation approaches (facilitation). This strategy, described by Seawright and Gerring (2008) for comparative qualitative case study work, mitigates against introducing differentiation between cases on variables that are not the focus of the investigation. It aims for maximum similarity between cases except on variables that can be described as explanatory or independent (variables used for purposive case selection). By ensuring that contextual variables are...
similar across cases, such as the organisational values of the case study organization, or elements related to world events, or the geographical regions where knowledge translation takes part, the focus of differentiation can be directed more directly onto the variables of primary interest (i.e. knowledge attributes and contextual domains). Differences observed between approaches in the separate cases can then be more readily attributed to differences in the influence of attributes of the knowledge and context (of particular interest) that were manipulated through selection. The plausibility that observed differences might be caused by un-investigated variables is reduced.

As discussed earlier, qualitative case study methods are limited in their capacity to draw firm conclusions about contribution or causation. However, the reports from participants provide some experience-based evidence. At the heart of conducting and reporting case study research is the recognition that multiple pieces of evidence, perhaps weak if viewed in isolation, can be combined to provide credible support for attributions about relationships between variables (Yin, 2014).

3.2.7 Analysis: Choosing template analysis

The analysis plan for the case study data was an important methodological decision. The majority of data collected are qualitative in nature. A primary task of qualitative analysis is to reduce a large amount of data, unworkable in its raw state, into a summary that comprehensively and transparently reports and describes how the data answer the research questions (Miles, Huberman & Saldana, 2014).

I chose template analysis because it is well suited for organizing and summarizing large amounts of qualitative data and for theory development where constructs have been suggested but are not yet firmly defined (King 2012; McCluskey et al., 2011). Template
analysis is distinguished from matrix or framework analysis, which tends to be more strongly committed to a specific framework that does not change during the coding procedure (Gale et al., 2013; Ritchie & Spencer, 1994). Where theory is still developing, coding into predetermined and firm categories is difficult to justify. However, it is not realistic to start without acknowledging work that has already been done. Templates can start with *apriori* ideas about what types of data or categorizations are of interest. In this study, an *apriori* template was derived from existing literature and emerging theory about contextual influences on knowledge exchange. Literature was reviewed for each of Kitson Harvey and McCormack’s (1998) three domains: (knowledge, context, and facilitation) to suggest theme headings founded in previous research.

Adding and modifying theme categories was done using inductive coding where the literature-derived categories did not accurately represent the data. The development of themes represents practices in grounded theory (Corbin & Strauss, 2008) or interpretive phenomenological analysis (IPA) (Smith, Flowers & Larkin, 2009). New themes can emerge and themes continue to be re-arranged and re-named to encompass the data throughout the analysis. Coding in this dissertation started with a template that was designed to develop and shed light on existing theoretical propositions rather than to emerge solely from the “ground” of the data. In this way, existing knowledge and theory were the starting point. The degree to which the template was modified to represent the data collected suggests refinements to the theory.

Template analysis is described by King to include both deductive and inductive elements (King, 2012). Researchers using template analysis must be willing to let go of proposed headings or even the structure of an existing framework where necessary, to
explore and code emerging themes and relationships that are true to the data. In this study, specific questions of interest were identified and the protocols for the interviews were finalized before interviews were conducted. This is another contrast with grounded theory where data collection procedures and questions can be repeatedly modified to explore new themes in response to emerging findings.

King (2019) notes that analysts considering template comparisons can be tempted to use quantitative elements in describing comparisons as is done with framework and matrix analysis approaches (Miles, Huberman & Saldana, 2014; Ritchie & Spencer, 1994). I chose not to emphasize counts in relation to interview and focus group data. These data were collected using semi-structured guides where counts can be as strongly related to the nature of questioning and the enthusiasm of the participants as to the frequency of practices (King, 2012; Saldana, 2016). As long as the numerical aspect is not overemphasized, counts of themes provide a form of supplementary analysis that is not inconsistent with the template analysis approach (King 2012). Heavily populated themes are likely to represent important thinking.

Through analysis, templates become increasingly accurate summaries of the data they represent. A first template is constructed to provide a theoretically oriented summary of knowledge translation approaches used with HELP. In the comparative cases, separate templates for each sub-case provide summaries of data that are compared to address the third theoretically informed research question. The template comparison is intended to produce contrasts that can reflect on existing research and provide empirical evidence to contribute knowledge about context-informed knowledge translation.
3.2.8 Summary

Key points in designing methodology include the selection of case study as a way of examining knowledge translation approaches in the case study and examining implicit practitioner theory or rationales for choosing different approaches in different situations. The comparative case study component examines the same phenomenon of context-informed knowledge translation from a perspective that tests a proposal that links between generalizable categories can be anticipated in the three domains. A realist orientation was selected as appropriate to the case study. This orientation aligns well with the epistemological orientation and with the choice to prioritize interview data and use template analysis. The decision to use multiple data sources and different methods of analysis was made in recognition that in the absence of large-scale experimental evidence, triangulation makes an important contribution to establishing validity in the study. The intent is ultimately to contribute to guidance for planning knowledge translation and to build generalizable knowledge about the phenomenon of context-informed knowledge translation.
Chapter 4: Method

This chapter outlines the methods used to address the research questions presented in the introduction (p. 14). It describes study procedures and the sequence of their use in case selection, data collection and analysis. It begins with an overview of the research design, describing how the organizational setting was chosen and how the cases being investigated were selected and defined to meet the objectives of the study. It explains the method and rationale for selecting the specific characteristics of knowledge and context that were used to differentiate the comparative subcases.

Data collection procedures are outlined for each data source in turn. The analysis methods are separately described with reference to how each method draws from various data sources to answer the research questions. Analysis of interview and focus group data are described together since the same method of template analysis (King 2012) is used with both. The chapter finishes by describing ethical considerations and a review of the procedures used to establish rigor.

4.1 Research design

The rationale for choosing case study was described in the methodology chapter. In this section, I explain how elements of the nested case study design relate to the research questions and the objectives of the study. The subcases are nested within a larger case study to allow two levels of analysis in relation to the primary objective of the study: both levels aim to uncover what experienced practitioners know implicitly or explicitly about context-informed knowledge translation and what informs their choices as they plan and apply their theories of how to use knowledge to affect change.
The design was developed to test theory-based claims by comparing divergent subcases with a specific aim of building on a framework described by Contandriopoulos et al. (2010). This theory-testing component aims to contribute to generalizable knowledge intended to be useful to guide practice. To examine relationships between domains of knowledge translation it was first necessary to establish meaningful and generalizable ways of operationalizing each of the three domains being considered. In this study I refer to “knowledge-context configurations” to emphasize the key point that contexts for knowledge translation and characteristics of knowledge must be analyzed in relation to each other. The first and second research questions are a necessary part of setting up the comparative case study element. These questions also offer an opportunity to examine context-informed knowledge translation in their own right through direct inquiry into how practitioners think and talk about approaches, and how knowledge and context are discussed in relation to the knowledge translation work at HELP.

In gathering and analyzing data about the range of knowledge translation approaches used across HELP knowledge translation work (research question 1) it was possible to consider how well the characterizations of knowledge, context, and facilitation represented by case study data corresponded with how these constructs have been framed and used in the literature. In investigating the circumstances in which different approaches are used in HELP knowledge translation (research question 2) the study took the opportunity to inquire into practitioner theories of change and the thinking behind the use of specific approaches. The first and second research questions therefore perform a double function. They build understanding of available approaches and the circumstances in which
they are used while also firming up operationalization of constructs (knowledge-context and approaches) for the third research question.

By combining methods to examine the influence of context on knowledge translation practice it becomes possible to consider the extent to which context contingent knowledge translation in the case study might be constrained by contextual factors as well being strategized through intentional and conscious planning.

In the overall case study, documents published on the HELP website or provided by the HELP librarian to represent HELP’s work were collected and analyzed systematically to collect and quantify a sample of prominent messages. This preliminary analysis (described separately below) showed that published HELP knowledge translation focused on several key messages across multiple diverse contexts for translation. By examining key messages from publications, reports, and media articles this research aimed to get a sense of the objectives of knowledge translation in the case study: what actions did their research suggest would be effective and who were the intended actors?

The descriptive, overview component of the study also used interview data. While interview participants were purposively selected to provide information about subcases, all participants were asked to reflect on knowledge translation at HELP more generally and about their thoughts on context and how they believed effective knowledge translation worked. Reports about knowledge translation at HELP from this overview perspective were analyzed inductively to complement the more explicitly theory-oriented comparative-case element.

Yin’s (2014) assertion that case study can be used to contribute to generalizable knowledge at the level of principles was the foundation for the use of the comparative
element in this design. As Yin (2014) explains, the study of multiple cases can be used to provide evidence that phenomenon are repeated in diverse settings as a way of supporting the generalizability of theory. Multiple cases can also be used to demonstrate the nature of differences between cases. This study uses the overall case study to provide a rich description of context-informed knowledge translation in an example that must be combined with data from other cases to support or challenge generalizable theory. It uses the second approach to explicitly test the degree to which theory at a level that Yin (2014) calls analytic generalizability is supported by data in the case comparison.

The comparative cases were selected to achieve specified differences between the cases on the knowledge-context configurations of interest. The rationale for this is explained in the methodology chapter (p. 58). In order to consider characteristics of knowledge, context, and approaches to knowledge translation (facilitation) as variables in this way it was necessary to operationalize each. Despite a depth in literature on each of these domains, there is not a comprehensive list of available approaches or wide agreement about which characteristics of knowledge and context should be salient when planning knowledge translation. For that reason, (and as discussed in the methodology chapter) template analysis was used to consider each domain separately.

In answering the first research question, analysis of interview data at the overall case level establishes a comprehensive template of approaches evident in HELP data. The classification system established to classify approaches is then used to address the second research question that examines which knowledge-context characteristics are present when these approaches are evident.
4.2 Distinctions used in classifying cases and *apriori* templates

Before discussing case selection and specifically the selection of cases for the comparative component of the study, it is necessary to discuss the distinctions that were used (first tentatively and then with the support of data) to operationalize knowledge and context to underpin discussion of generalizable theory in context-informed knowledge translation. Because the operationalization of knowledge and context are a necessary component of the study, template analysis was used to consider how data reflected on the characteristics that were discussed in the literature to narrow the focus to those reported as salient in the data. To avoid distracting the reader with detail of this component of the study, information relating to the operationalization of knowledge and context is presented separately in Appendix A. Overall, the categories for distinctions discussed in the literature review were also observed in the data.

4.2.1 Knowledge

To operationalize knowledge and context, the distinctions retained after analysis as meaningful to context-informed knowledge translation in the case study are presented in Table 2 below. The matrix presentation shows how analysis on both dimensions can be used to describe knowledge-context configurations. Each intersection in Table 2 represents perspectives from context and knowledge perspectives as a way to highlight challenges. For example, if determining solutions requires synthesis of information from several sources, challenges will differ according to the nature of connections between the sources, their willingness to invest in the synthesis and the levels of polarization present. Considering all cells paints a rich picture of knowledge-context configurations and suggests which challenges will require most attention.
Table 2 Configurations defined by dimensions of knowledge and context.

<table>
<thead>
<tr>
<th>Knowledge dimensions</th>
<th>Context dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality reliability</td>
<td>Social structuring</td>
</tr>
<tr>
<td>Type of synthesis required</td>
<td></td>
</tr>
<tr>
<td>Problem vs solution knowledge</td>
<td></td>
</tr>
<tr>
<td>Alignment or challenge to status quo power structures norms and mandates</td>
<td></td>
</tr>
</tbody>
</table>

4.3 Case descriptions

This section describes each of the three cases of context contingent knowledge translation examined in this study. The first case can be defined as knowledge translation at the level of the organization (HELP). The two comparative subcases focus on specific knowledge in divergent contexts and are used to test theory-informed claims that specific approaches used in the subcases will reflect identifiable challenges related to knowledge context configurations.

4.3.1 Knowledge translation at HELP

HELP was selected purposively as a case study site for its capacity to offer informative or exemplary data and insights into the complexity of planning effective knowledge translation (Patton 2015; Stake, 1995; Yin, 2014). HELP as an organization has dedicated itself for two decades to promoting action on the basis of the evidence they produce and share. Their strategic plan (2019 -2025) states: “We are dedicated to improving the health and well-being of children through interdisciplinary research and mobilizing knowledge” (HELP, 2019, p.4).

HELP has extensive experience with knowledge translation and claims some important success in influencing policy and practice at several levels of service provision.
and governance. HELP’s knowledge translation practices are not assumed to be representative of other organizations but it is expected that some of the theory, principles or heuristics that they describe or enact may provide valuable generalizable guidance to others facing similar challenges and opportunities.

4.3.2 Cases for comparative case study

The two comparative cases were defined to explore predictions that arose from a review of the literature (see p. 47). The comparative case analysis is focused on the third research question that tests the extent to which the use of specific approaches can be anticipated by examining knowledge-context configurations. Decisions about case selection were made in consultation with HELP leadership. The chosen cases were the knowledge translation associated with the Early Development Instrument (EDI) and with the Middle years Development Instrument (MDI). Each represents opportunities for using data and knowledge to support interventions at different levels, and through different organizations at discrete life stages.

Determining that the EDI and the MDI represent different characteristics of knowledge and context was based on three inputs. The first was the preliminary document analysis of HELP documents. The second was a series of meetings with HELP leadership in which case options were discussed and noted differences supported by HELP leaders. The third was my own professional experience of working in the early childhood sector and with schools. The design of the study allowed data to substantiate expected differences through the analysis. Differences between the cases and the attributes of each that are reported in this method chapter were determined prior to analysis of the interview and focus group data.
Both of the comparative knowledge translation cases are focused on knowledge work affecting the Port Alberni region, extending to the west coast of Vancouver Island. HELP leadership reported effective knowledge translation work in that region with both cases. The MDI case is mapped to the school district level (School District 70) while the EDI is mapped to a health region that substantially overlaps.

The contexts are initially differentiated by the age of children. Potential action to improve EDI scores focuses on influencing developmental environments and services for children before they are six years old. MDI work primarily aims to impact the healthy development of children in grades four to seven when children are between nine and thirteen years old and attending school. Intervention options for each include collaborative action with partners and policy interventions that influence funding or accountability to regional and provincial levels. Table 3 illustrates the distinctions that were expected to lead to differences between the cases in terms of approaches emphasized in knowledge translation.
<table>
<thead>
<tr>
<th>Domain</th>
<th>Relevant distinctions</th>
<th>EDI characteristics</th>
<th>MDI characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>Knowledge of problem situation vs. knowledge of solutions</td>
<td>Describes a problem of unnecessary developmental vulnerability in children when measured in kindergarten. Recommended solutions are not actionable by any single service organization</td>
<td>Describes a problem in terms of student well being and the protective factors (assets) they may or may not access. Suggests actionable strategies for strengthening protective factors in schools and through partnerships with schools.</td>
</tr>
<tr>
<td>Nature of syntheses with other evidence including the preferences of stakeholders</td>
<td>Determining effective action in different contexts requires syntheses of multiple research and stakeholder inputs, often through participatory processes.</td>
<td>The MDI was constructed based on evidence synthesized by experts. Evidence showing decrements in protective factors can be used directly by individual knowledge users.</td>
<td></td>
</tr>
<tr>
<td>Alignment vs. challenge to status quo practices and power structures</td>
<td>Accessing significant funding for new initiatives services or policies challenges status quo arrangements</td>
<td>Promotion of social emotional education and enhancing protective factors in schools does not appear to challenge existing structures or power arrangements</td>
<td></td>
</tr>
<tr>
<td>Context</td>
<td>Polarization</td>
<td>Disagreement about policy and service priorities. Disagreement about the role of the state in providing support to families</td>
<td>Wide agreement that universal activity to promote the healthy development of students is appropriate in the school system.</td>
</tr>
<tr>
<td>Social structuring</td>
<td>Coordination of multiple organizations and departments is challenged by instability and competition for resources. Family contexts are not readily accessible</td>
<td></td>
<td>Schools are stable, relatively well-funded organizations with similar features across districts and considerable capacity for communication, intervention, and for leading partnerships with others.</td>
</tr>
<tr>
<td>Cost sharing (mutuality of investment between researchers and users)</td>
<td>Three ministries share costs of supporting the research. Data are collected in schools while intervention to impact early year development must occur prior to school attendance</td>
<td>Schools bear the costs of data collection and schools are well positioned to design, coordinate and implement interventions that can contribute to achievement of their mandates.</td>
<td></td>
</tr>
</tbody>
</table>

While the cases are presented as discrete, overarching determinants continue to influence children’s development across each of these age ranges and some overlap.
between EDI knowledge work and MDI knowledge work is inevitable. EDI coverage is essentially universal in BC, and MDI work follows it in terms of the life course stage of children’s development that it seeks to modify.

Separate EDI and MDI teams at HELP develop dedicated knowledge translation tools for their circumstances. Attention to the EDI and the MDI as cases therefore provides a focus that is meaningful to HELP. The support of HELP leadership was essential for encouraging participation in data collection. The rationale for expecting that different approaches to facilitation would be applied in these different configurations of knowledge and context was discussed in the literature review and presented on p. 47 and 48.

4.4 Data collection

Data collection is presented under separate headings for each data source in turn:

• A corpus of documents assembled to represent key messages and the body of knowledge that underpins HELP knowledge translation
• Interviews with participants in HELP knowledge translation
• A focus group
• Published information accessed for triangulation or validation.

A later section discusses analyses relevant to each data source. Table 4 presents an overview of the sequence in which data were collected for analysis in the study.
<table>
<thead>
<tr>
<th>Data source (and purpose)</th>
<th>Activity</th>
<th>Process detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corpus of reports, published articles and media reports (Preliminary document analysis)</td>
<td>Assemble a corpus of documentation representing the work of HELP and affiliates for preliminary analysis</td>
<td>Using website publication lists and materials sourced with the assistance of the HELP librarian.</td>
</tr>
<tr>
<td>Interviews</td>
<td>Select cases (EDI and MDI)</td>
<td>In consultation with published documents and HELP leadership</td>
</tr>
<tr>
<td>(Gather data about HELP knowledge translation overall and specific information about EDI and MDI cases)</td>
<td>Identify and recruit participants</td>
<td>Snowball approach, email invitation</td>
</tr>
<tr>
<td>Conduct and record one-on-one interviews</td>
<td>In person or by telephone</td>
<td></td>
</tr>
<tr>
<td>Transcribe data and check for accuracy and quality assurance</td>
<td>Type from audio</td>
<td></td>
</tr>
<tr>
<td>Load data into NVivo for analysis</td>
<td>Random selection and check of segments of transcripts for accuracy</td>
<td></td>
</tr>
<tr>
<td>Analyze interview data into separate templates for each case</td>
<td>Read all transcripts</td>
<td></td>
</tr>
<tr>
<td>Comparative analysis of cases</td>
<td>Code subset of transcripts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Modify overall template as necessary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Document rationale for changes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Review coding with supervisor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conduct double coding with research assistant</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Review template modification with committee</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Code remainder of transcripts with modifications recorded and reviewed as required</td>
<td></td>
</tr>
<tr>
<td>Focus group (Validation and elaboration)</td>
<td>Conduct focus group to check interpretation and collect additional data</td>
<td>Separate the analysis by case to examine how the separate templates develop and are populated</td>
</tr>
<tr>
<td>Corpus and web resources (Revisiting data and explicit searches for validation or elaboration)</td>
<td>Triangulation with documents and focus group data in relation to conclusions or questions that arise in the analysis.</td>
<td>Reconsider naming of headings and distinctions within themes once templates are separated.</td>
</tr>
<tr>
<td></td>
<td>Invite participants to comment on results and interpretation</td>
<td>Examine differences in approach between the two templates and the relationship between differences and attributes of knowledge and context</td>
</tr>
<tr>
<td></td>
<td>Present a summary of findings to an audience of interview participants and HELP personnel for feedback</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Review corpus and interview data in relation to any questions raised in the initial analysis.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Offer a presentation (summary and interpretation of results) to HELP personnel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Code focus group data and review for relevance (to challenge or confirm findings or themes)</td>
<td></td>
</tr>
</tbody>
</table>
4.4.1 Data sources: documents

As a preliminary step in planning the selection of cases and informing the analysis, published documents produced by HELP, or hosted on the HELP organization website, were reviewed to identify documented knowledge translation approaches, processes and messages. Journals, reports, media and website articles published between 2000 and 2015 were assembled into a searchable corpus (with the aid of the HELP librarian). The corpus includes 158 academic articles, 85 published reports and 625 media articles assembled as a record of HELP’s research and knowledge translation work. Documents produced since 2015 were not included in the corpus analysis but were reviewed as they were published and considered as evidence to support or disconfirm findings (validation).

4.4.2 Data sources: Informant Interviews

Informant interviews were the primary source of data for template analysis. Semi-structured interviews of approximately one hour in length were used to gather data about perceptions and insights in relation to the knowledge translation at HELP overall and within each case. Individual interviews examined knowledge translation processes and the rationale for choices from the perspectives of researchers, HELP staff, and members of communities, services, policy networks, and the institutions that work with and use HELP information and research.

Interviews collected information for all three questions using interview guides (Appendix B). Participants were asked about approaches that were used (research question 1). They were asked about the thinking behind knowledge translation at HELP overall and how the use of approaches might be influenced by perceived opportunities or constraints in contexts of exchange and use (research question 2), and they were asked directed questions
about the specific cases being investigated in the comparative case study (research question 3). The participants are described in the section below that outlines the recruitment procedure and in a table in Appendix E.

4.4.3 **Sampling (interviews)**

The sampling strategy was purposive (Patton, 2015). It reached out to informants who could speak from personal experience with planning or participating in knowledge translation at HELP. The sampling can also be called theoretical (Corbin & Strauss, 2008) since participants were selected for their capacity to provide information relevant to the research questions.

Identification of informants started with a list of HELP personnel provided by HELP leadership and the list was extended using a version of snowball or chain-referral sampling (Penrod et al., 2003). This technique is suitable where a sampling frame is not available and informants have privileged information about whom they worked with, how, and to what effect. This information would be difficult to access by other means. By asking each informant to refer others who could add useful information, data collection extends from informants identified as central to knowledge translation at HELP through a network of connections to identify the people involved in planning or executing knowledge translation as intermediaries or participating in the process as knowledge users.

Interviews with 29 participants were conducted in total. The number of interviews was determined by the number of participants identified in knowledge exchange in each case in the Port Alberni Region and by theoretical saturation in relation to the themes that emerged from the different perspectives of informants (in relation to both the EDI and the MDI) (Patton, 2015). Ten to fifteen interviews providing data for each case was expected to
lead to saturation in relation to the theoretical and strategic elements of the knowledge translation planning and execution that are of interest in this study. The diversity of forums in which the EDI information had been promoted for use appeared to be more diverse than in the MDI case and most MDI respondents also had experience with EDI knowledge work although the converse was not always true. In each case, data collection continued until no new theoretically relevant information was forthcoming.

4.4.4 Recruitment procedure (interviews)

The first participants (n = 15) were identified in consultation with HELP leadership. The criteria for inclusion were familiarity or experience with knowledge translation at HELP overall and/or specific experience with using EDI or the MDI data and related information to influence child development outcomes in the Port Alberni area. Nominated participants were invited to participate via email. A recruitment letter (Appendix C) was sent to the invited participants. Those who indicated willingness to participate were invited to schedule an interview or to indicate a time and place that could work for them. Participants were provided with information about the study and asked to provide informed consent in writing prior to participating (Appendix D).

At the close of each interview, informants were asked to identify others who would have a valid perspective on relevant knowledge translation work at HELP. Participants who suggested contacts were asked to forward an email invitation to the contact to see if they were willing to participate (Appendix C). People who responded with willingness were provided with further information and a consent form. If they chose to participate (which all who responded chose to do) an interview was scheduled. Where possible, interviews were conducted in person at UBC or at a place convenient to participants. Where
informants preferred to be interviewed by telephone, phone interviews were used. Fourteen interview participants were identified and added to the sample through network contacts of initial participants. In keeping with the ethics approval, all participants were asked if they wanted to review transcripts to reconsider anything they may wish to restate or withdraw. Two participants requested transcripts for review.

Twenty-nine interviews were conducted in total. Participants generally prioritized a focus on either the EDI or the MDI case although many had experience with both. Several participants made comparisons between the cases and referred to each at different times within one interview. Of the 29 interviews, 20 discussed MDI knowledge translation at some point (in ways that were relevant to the research and therefore coded) while 27 contributed data about knowledge translation of the EDI and related research. A table describing participant’s roles in knowledge translation and which cases they reported on is included in Appendix E to illustrate the range of roles that were represented and how several individuals played more than one role and reported on more than one of the cases.

Data for the comparative element of the case study was isolated for analysis based on specific references made by participants. It was important in coding to be clear about which case was being discussed at each point.

4.4.5 Interview procedure

Interviews followed a semi-structured format and used interview guides (Appendix B). Questions invited discussion of what had been done to advance knowledge use and inquired about implicit or explicit theories of change that informed knowledge translation work. The ways that information flowed through communication mediums and networks, the nature of barriers to specific channels or approaches, and the rationale for selecting
strategies in relation to EDI or MDI knowledge work were all of interest. Participants were also asked to reflect on approaches that may have been considered or tried and rejected.

Interview guides followed a sequence that moved from the general to the specific, seeking reports about what was done and the rationale or thinking behind it. The intention in data collection was to gather data about knowledge translation at HELP to be able to compare the reported practices (through the analysis) with what might be anticipated based on the propositions made based on the literature review and the Contandriopoulos et al. (2010) framework.

While the guide provided a structure and ensured coverage of key points related to the research questions, the interviews followed the flow of the conversation and asked for elaboration using prompts to examine issues in more depth where informants told stories or reported their experiences and reflections. Guides were used flexibly to accommodate those whose role was research oriented and those closer to the “user” end of that continuum.

Flexibility was important to elicit and elaborate on strategies or information that the initial *apriori* template may not have captured. The interviews were intended to feel more like a conversation than the structured delivery of a series of questions (King, 2012).

**4.4.6 Data collection: Focus group**

A single focus group was conducted after the interviews were completed and an initial analysis of interview data had been conducted. The primary purpose for using a focus group was to gather participant expressions of agreement or disagreement with a data-informed summary from preliminary analysis of the various ways that evidence was used to promote action, at HELP in general and in the specific contexts of EDI and MDI related knowledge translation. The summary of tentative findings was given as a
presentation (Appendix J) and the extent to which the summary resonated with participants provided one layer of validation for the interpretation of interview data. The focus group was also a forum for hearing additional perspectives and considering what might have been missed through interviews.

Focus groups are appropriate when the intention is to explore the range of opinions or perspectives within a group that shares an interest in a specific topic or question (Stewart, Shamdasani & Rock, 2007). Agreement among participants can be interpreted as an indication of the extent to which thinking about theories of change or facilitation has been discussed, shared, and become common knowledge among the participants. Divergent views and strong or controversial opinions were welcomed to provide the richness that is sought – to explore the nature of controversies among the group and provide information about whether differences in facilitation preferences are related to differing opinions and priorities within the group or to differences in context and knowledge as theory might predict.

In forming focus groups, it is important that the diversity in a group does not lead to defensiveness and that the session is established as a safe place to share diverse ideas (Stewart et al., 2007). Preliminary analysis had revealed that different strategies and processes would be understood and valued differently by different focus group members. A professional facilitator was used to manage potential conflict and keep the conversation relevant to the research questions.

The overall compatibility and collegiality of relations among HELP informants was expected to make the focus group setting a safe space for the expression of multiple and diverse views and support suitable expression and elaboration of diverse opinions.
Stewart et al. (2007) note that open discussion in group settings can stimulate different associations for different members and efficiently provide quite a thorough exploration of ideas through contributions from members to demonstrate which ideas are broadly accepted, which are contested, or under which circumstances they may be deemed relevant. Each additional perspective can build on what has been said before to represent both a nuanced and a shared understanding.

### 4.4.6.1 Sampling and recruitment (focus group)

All interview participants were invited to attend the focus group via individualized email invitations. Eight of the 29 interview participants attended. At the request of organizational leadership, the presentation that summarized the data collected was also made available to all members and close affiliates of the organization.

The presentation of tentative findings was separated from the focus group data collection. At the request of HELP leadership, and after consultation with the dissertation committee, the invitation to participate in the focus group was extended to those who attended the presentation on the condition that they were willing to provide consent for their input to be used as data. The invitation to participate was made via an in-house email list. The total number of focus group participants was fourteen. The larger group offered the potential to access new perspectives and opinions from other informants and to challenge or support a view that data saturation had been reached.

### 4.4.6.2 Focus group procedure

The focus group procedure used a guide that involved two related parts, a presentation and a guided discussion (Appendices I & J). The presentation of initial findings was used as stimulus and a starting point for the focus group discussion. The presentation
summarized preliminary findings using network maps, diagrams, and quotes to display what had been recorded in relation to each of the comparative cases. Examples of text excerpts were provided to represent theme headings. The presentation emphasized areas of similarity between MDI and EDI templates as well as areas of divergence. Tentative suggestions about why differences were apparent were put forward for discussion.

Following the presentation, the professional facilitator, who was hired for the event, checked that all participants had read and signed consent forms and then conducted a guided discussion of summary points in relation to each case. She invited participants to reflect on the extent to which the noted differences were plausible and to discuss interpretations put forward by the researcher. The facilitator invited input on each major point and sought elaboration where participants suggested alternate understandings. The discussion was recorded. Notes were taken by the researcher and by the PhD supervisor who attended as an observer.

4.5 Analysis

Data were analyzed using three different methods. Each is described in turn. The first method was used with corpus data. In preliminary work, the assembled corpus was analyzed using NVivo software (2012) in a systematic and replicable method based on recognized linguistic features (through queries) to assemble a summary of prominent recommendations and knowledge translation messages. A description of the corpus analysis procedure is presented in Appendix F.

A second method, template analysis, was used with NVivo (2012) to develop and confirm the categorizations that were used throughout. Template analysis was used with both interview and focus group data to develop a comprehensive summary of knowledge
translation at HELP. The template represents a hierarchical classification system of all approaches that were evident at HELP as a response to the first research question. Template analysis was also used to confirm which characteristics of knowledge and context appeared to be relevant in HELP data.

Templates developed through comparative analysis were used to summarize the data from the separate subcases in separate templates that allowed a meaningful comparison. This comparison was the focus of the third research question. Because template analysis was conducted with interview and with focus group data, reference to both of these sources is included in the explanation of how template analysis was conducted.

A third method relied on inductive axial coding by the researcher and a research assistant. It analyzed text from all sources to review relationships between the coded themes. Axial coding looked for relationships between the theme headings in different domains. For example, a single statement could reference both context and facilitation in ways that suggested a correspondence between them. Similarly, inductive open coding sought to gather explanations for relationships between aspects of the three domains (without using *apriori* headings). This method examined the stated and implied rationale offered for using different approaches by examining theories or micro theories that were explained by informants or revealed through textual analysis. The inductive and axial aspects of the study were primarily focused on the second research question at the level of the organization overall and relevant to the overarching question about context-informed knowledge translation by inference. All three methods contribute to the examination of context contingent knowledge translation.
4.5.1 Template Analysis (used with interview and focus group data)

Template analysis was chosen as a flexible approach to thematic coding. An overview and rationale was provided in the methodology chapter. The initial *apriori* template of approaches was constructed using categories and distinctions gleaned from the existing literature, aiming to be comprehensive of ways that knowledge and evidence can be translated into action.

Template analysis structures the data into a hierarchical classification system using themes and sub themes or parent and child nodes. The hierarchical template structures illustrate how themes cluster and where some themes can be seen as distinctions within higher order themes that encompass them. Each point of data is considered in relation to how it fits with predetermined and emerging categories. Analysis uses a constant comparison approach comparing text to be coded with other text and headings to determine which properties or dimensions are similar or different (as described by Boeije, 2002, and Corbin & Strauss, 2008).

The coding began deductively, gathering text segments under pre-determined, theoretically informed theme headings when possible. Where themes of interest could not find a suitable place in the initial template, new themes were added or modified. The modifications represented by the new template therefore extend or challenge existing theory as represented by the apriori template on the basis of insights from the data.

4.5.1.1 Coding procedure

Following a series of five steps outlined by King (2012), coding began by reading through all interview transcripts to build familiarity with the data. The second step was a preliminary coding of several transcripts, in this case four: two from each case. These data
were coded to examine how they could (or could not) be indexed to themes representative of the broad dimensions of Weiss’ or Patton’s types of use (Crewe & Young, 2003; Patton 1998; Weiss, 1979) or to possible extensions of interactive approaches related to the role of learning/co-production in knowledge translation (Kitson et al., 2013; Van de Ven, 2006). Where *apriori* theme headings in the template appeared unsuitable King (2012) the headings were renamed or additional theme categories developed and added so that the template became an increasingly accurate representation of the data. Modifying theme headings was done in a process of reflection and consultation with a research assistant and the research supervisor.

The third step (also done in consultation with a research assistant and the research supervisor) was to assemble themes in clusters to consider how themes might be arranged in an optimal hierarchical structure. In the fourth step, the hierarchical nature of the template was modified. In the fifth step, the remainder of the data were coded to the template with iterative modifications performed as required until at the final step, a coherent template was available that represented all of the coded text. The template developed to summarize the full range of approaches used at HELP was used as the *apriori* template for the analysis of the subcases. In the comparative analysis, the templates diverged from the parent template as themes were populated or modified by data from each case.

Text was coded verbatim to templates that were organized in a hierarchical structure under theme headings and node classifications that (in all cases) aimed to retain a level of generality that could accommodate all subordinate codes. With template analysis (King, 2012) there is an expectation that where data are richest these may be represented by a
greater number of distinctions within the high level, \textit{apriori} dimensions suggested by the theoretical framework. Coding might therefore produce multiple levels of distinction within a hierarchical structure as elaboration under the established high-level theme headings without challenging the template. However, it is central to template analysis to hold themes loosely and attend to patterns in the data in the form of recurring themes that may suggest modifications to either the form or the substance of even the highest level of coding themes and the nature of assumed relationships and hierarchies (Brooks et al., 2015).

Consultation was important because there is always potential for researchers to be more open to information that supports their pre-existing views. Input from others who may have less investment in the study findings can be helpful (Cresswell & Miller, 2000; Sandana, 2013). Both the initial deductive coding to relatively firm themes and the more inductive examination of distinctions within themes relied on researcher judgment in interpretation. As a precaution against subjective bias, a research assistant was engaged to perform double coding of text classification and to participate in discussions about coding and distinctions within the initial high order themes that were retained. The use of collaborative processes in coding is recommended (Saldana, 2016) and was found to be valuable for presenting additional perspectives and for clarifying decision criteria for coding. The procedure used to train and utilize a research assistant to establish validity of the coding procedure is described in more detail in a separate section on demonstrating research rigor. In qualitative coding, the value of rigorous and systematic procedures is difficult to overstate (Patton, 2015; Saldana, 2016; Tong, Sainsbury, & Craig, 2017).
Documenting the rational for coding decisions (in consultation with a research assistant and committee members) as the coding progressed was important to allow changes in the template to be tracked. Without a clear theoretical focus, multiple available lenses and perspectives were possible. It was important to remain focused on the research questions and at the same time to consider various interpretations of the data.

The tentative structure for the initial template was established prior to data collection and used as a starting point in the first step of coding a subset of data (Table 5).

**Table 5 Apriori template for knowledge translation approaches (facilitation)**

<table>
<thead>
<tr>
<th>Initial apriori template for knowledge translation approach (facilitation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrumental</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Indirect</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Development of this *apriori* template through template analysis used data gathered about the totality of HELP knowledge translation to provide a list that represented the range of approaches used in practice (research question 1). Information suggesting that the approaches may be also be understood from their descriptions to be responses to characteristics of knowledge and context is relevant to research question 2.

**4.6 Using template analysis for case comparison**

Template analysis procedures are well articulated and the approach has been recommended as especially appropriate for case comparisons (Patton, 2015). The template that was initially developed as an overall summary of approaches used at HELP was modified for each case separately to represent data in each case as accurately as possible.
Coding data representing the separate cases produced two discrete templates that can be compared to illustrate their commonalities and differences (Patton, 2015).

The primary outcome of interest in the case comparison was the facilitation or approach used. As discussed earlier, case selection purposively differentiated the subcases on the basis of features of the context and knowledge in advance of collecting interview data. Coding of interview data in the knowledge and context domains was therefore largely conducted to establish the validity of the assumptions that guided subcase selection. Because the subcases were selected to differ in knowledge-context configurations, differentiation between the templates that summarize approaches in the separate subcases can be interpreted as evidence that differences in approaches reflect differences in characteristics of knowledge and context that were achieved through case selection.

4.7 Axial coding to identify links between domains

In order to get enough information to recognize patterns of association, coding segments were expanded around messages that were identified in the corpus and in interview data until text segments were large enough to include information that might clarify how the message, the target audience, the implied approach and detail about the context were related. Patterns were discerned by examining how text segments shed light on implicit theories or made explicit reference to an approach and to characteristics of the knowledge or context together.

4.8 Inductive coding of theories of change

Interview participants were asked how they thought that knowledge translation worked, what contributed to effectiveness and what had to be included. Responses that suggested an explicit or implicit theory of change were coded using thematic analysis to
develop a relatively parsimonious number of themes that captured the variations expressed in the data. The objective of examining theories of change was to go further into the rationale for using specific approaches in an expectation that theories of change would help to explain links between the approaches used and knowledge-context configurations that suggested specific challenges or opportunities in the context of exchange or intended use.

4.9 Rigor and validation

Qualitative research involves considerable interpretation and judgment. It is important to demonstrate systematic approaches and be clear about the role of subjective judgment in the research process (Patton 2015; Saldana, 2016). As the potential value of qualitative research has become more widely accepted, checklists have been developed to help researchers demonstrate that techniques are being used appropriately to overcome the inherent challenges of qualitative research and the reliance on the judgment, skill and trustworthiness of the researcher (Krefting, 1991; Tong et al., 2007). Discussions of rigor generally recognize the benefits of specific practices such as the establishment of relationships prior to commencement of the study, prolonged contact with cases in a case study, careful attention to purposive sampling, and careful recording of procedures for data collection and analysis such as double coding and deliberation with research colleagues.

However, there is also recognition that a holistic appraisal of how the design incorporates features of good qualitative research is more important than conceptions that might judge the quality of the research based on the use of specific techniques (Barbour, 2001; Patton, 2018). A number of guides for assessing qualitative research quality direct attention to how the researcher clarifies the aims of the research; justifies the selection of methods; connects the inquiry with existing knowledge; and provides detail about how the
sampling and recruitment were done, how data was collected recorded and analyzed and how tensions between subjectivity and reflexivity were addressed. Demonstrating how various elements of the study fit together lets readers make a reasonable judgment about the rigor and reliability of findings and their interpretation (Easterby-Smith, Golden-Biddle & Locke, 2008; Harrison et al., 2017; Tong et al., 2007; Yin 2014). In describing methodological choices and documenting procedures, I have aimed to demonstrate the consideration that has gone into these major points. Several techniques that are recommended for improving rigor are described below.

Perhaps the most important of these is the use of triangulation: using data from several sources and methods in relation to the same research question (Cresswell & Miller, 2000; Krefting, 1991; Yin, 2014). Data are drawn from publications and media of different forms and from interview participants with differing perspectives about the processes used.

Data were recorded and are presented verbatim to reduce the possibility of changing the meaning through imperfect recall or paraphrasing. Participants and the committee were invited to check the accuracy of transcriptions. Direct quotes are used in reporting to allow readers to engage with the interpretation and to participate in verifying validity as they view the data themselves and consider the interpretations presented (Yin, 2014).

Participants were invited to review their own transcripts and those that choose to do so were asked for their feedback (Krefting, 1991). In another form of participant checking (Tong et al., 2007) a focus group (described above) provided a further review of data collection and interpretation by asking participants for comments and feedback on a summary presentation of the interview data. Their comments and elaborations were audio-recorded, transcribed and used as cross validation of interview data and as additional data.
Since a primary aim of the analysis was to represent the views, behavior and experience of organization members in the context of theory, their endorsement, contradiction or elaboration of the representation and its interpretation is an important form of triangulation.

To enhance the validity and rigor of coding practices, a research assistant was engaged to participate in coding and developing the templates. Double coding was conducted throughout the analysis to ensure fidelity with process and to ensure accuracy and consistency with coding. Consultation with the research assistant was also important to ensure that different interpretations and alternative coding decisions were duly considered and taken up where appropriate.

4.9.1 Training of a research assistant

The research assistant was recruited and trained in the coding procedure after several transcripts had been coded and minor refinements made. Training started with reading of an assembled list of articles and documents that provided theoretical background to the development of the relatively hard, *apriori* theme headings. The research assistant was introduced to the *apriori* template and a coding guidebook with definitions for each of the initial themes. The next step in training was for both the researcher and the research assistant to independently code one of the transcripts and then to review the coding and discuss areas of agreement and tension. While this was part of the training for validation purposes, it was also part of the analysis. In the process of discussing coding, theme headings were revised, theme definitions were refined, and coding was adjusted to reflect agreement in coding decisions. The training and consultation continued, transcript by transcript, with further modifications to the theme headings and definitions. This iterative process continued with weekly consultation from Sept 2018 until April 2019 by which time
15 transcripts had been independently coded and discussed for agreement by the researcher and the research assistant.

A coding guidebook was developed and refined iteratively and in collaboration with the research assistant to create clear definitions of the high level themes. Multiple versions were retained to provide evidence of how the development occurred. Increasingly clear coding definitions allowed the coding to be systematic and replicable. Agreement on coding can be seen as adding a level of objectivity and transparency to the process. Double coding provided a forum to raise different perspectives and to consider which distinctions were relevant and to ensure consistency between coders. Statistical inter-rater reliability tests were not used since the coding process of template analysis is an evolving one. Disagreements and different perspectives were explored and resolved to ensure that by the end of the coding, there was a consistent rationale for decisions and the coding was consistent with the theme definitions. After the double coding had been completed, a meeting between the supervisor, research assistant and researcher discussed the challenges and development of the templates. The research assistant and the researcher each reported that they had come to shared understandings about the main coding decision points and challenges.

4.10 Ethical considerations

The study was conducted under UBC BREB ethics approval H17-01086. The following key points are included below.

4.10.1 Data security

All data collected from individuals was de-identified and stored on a password-protected file in encrypted form on a secure file-sharing platform at UBC. While working
with data, all devices that store or manipulate files or data were encrypted and password protected.

4.10.2 Informed consent

With the exception of publicly available data, all data from interviews or focus groups were obtained after participants had provided informed consent by reading and signing a form that outlined the procedure for data collection, transcription and how the data would be used (Appendix D).

4.10.3 Confidentiality

Data from interviews and focus groups was considered to be confidential. Personally identifying information was withheld in referring to interview participants or people named in the interviews. In line with the purposes of the study, participants were invited to indicate if they preferred that any part of their interview be withheld from use in quotes or disclosed to others. Three participants asked that segments of their interview not be quoted or shared which indicates some sensitivity around how some ideas about knowledge translation are shared.

4.10.4 Organizational risk

Organizational risk was also considered since there may be consequences attached to how the organization or individuals are perceived by different stakeholders. This risk was managed by presenting the quotes as ideas being discussed and considered rather than as the position of any individuals or HELP.

4.10.5 Recruitment and sampling (Ethics)

In recruiting participants who were not part of the organization (HELP), it was important to avoid being intrusive. Where a participant at HELP believed that someone in
a different organization would be able to offer useful information, they sent a brief overview of the research in an email, asking the potential participant if they might be willing to participate in the study. If they expressed willingness or interest, an invitation was sent to them directly, outlining the purpose of the study, providing an information and consent form, and offering scheduling options.
Chapter 5: Results

This chapter presents data to answer the overarching question of how knowledge-context configurations influence or inform which approaches may be required to promote program or policy action in different circumstances of population-health knowledge translation. The results are structured around three case study questions. The first outlines a range of approaches that can be used. The second explores the circumstances in which the identified approaches are used and finally, the third provides a test of theory. In combination, the three case study questions gather evidence about how different approaches are used to respond to different circumstances in HELP knowledge translation. The results are interpreted to tentatively infer that the patterns of context contingent knowledge translation observed in the case study and reported here represent principles that may well apply more broadly in knowledge translation for population health.

5.1 Results responding to research question 1

Research question 1: What approaches to knowledge translation are used in the case study to promote evidence-informed action to improve the developmental health of children (at a population level)?

This section presents a summary of approaches that are evident at HELP. The template in Table 6 below brings together approaches previously reported in separate knowledge translation, evaluation, and political science literatures and, with modifications suggested by the case study data, arranges them in a hierarchically structured classification system. The template of approach headings represents a comprehensive range of approaches evident across the many diverse contexts where HELP promotes evidence informed action. Appendix G describes the process by which the apriori template (Table 5 on p.85) was modified through analysis to the one presented in Table 6 below. The three columns represent three levels of hierarchy. High-level headings in the left column are
inclusive of variations and distinctions coded in the same colour text as sub-themes at lower levels in columns to the right. Explanation of the themes and data that illustrate their use follow.

**Table 6 Template of facilitation approaches evident in HELP data**

<table>
<thead>
<tr>
<th>Approach heading</th>
<th>Second level Variations</th>
<th>Lower level distinctions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange or transfer</td>
<td>Research driven</td>
<td>Instrumental (dissemination, diffusion)</td>
</tr>
<tr>
<td></td>
<td>Interactive</td>
<td>Conceptual (dissemination, diffusion)</td>
</tr>
<tr>
<td></td>
<td>User driven</td>
<td>Direction for action incorporates input from researchers and users</td>
</tr>
<tr>
<td></td>
<td></td>
<td>User designs/selected knowledge to advance existing objectives</td>
</tr>
<tr>
<td>Process focus</td>
<td>Capacity building (skills, knowledge, resources)</td>
<td>Organizational/institutional</td>
</tr>
<tr>
<td></td>
<td>Collaborative planning</td>
<td>Intersectoral</td>
</tr>
<tr>
<td></td>
<td>Collective focus</td>
<td></td>
</tr>
<tr>
<td>Strategic focus</td>
<td>Insider persuasion</td>
<td>Equity/justice focus</td>
</tr>
<tr>
<td></td>
<td>Strategic framing</td>
<td>Economic framing</td>
</tr>
<tr>
<td></td>
<td>Third party strategies</td>
<td>Authority of science</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Advocacy coalitions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Support/pressure from publics</td>
</tr>
</tbody>
</table>

5.1.1 HELP knowledge translation approaches

The high-level category named “exchange or transfer” focuses on one-way or two-way exchange of information. Approaches in this category prioritize communication and making knowledge available and accessible. Approaches in the process focused category aim to increase the capacity of systems, networks, organizations, or coalitions to support and deliver effective intervention. At HELP process focused work can extend to building systems and networks for coordination and collaboration where none has previously existed. The strategic focus category of approaches engages with the values and influences that persuade or motivate potential actors to change the incentives or accountabilities that
may support or initiate action. All three categories are well represented in the data. While the categories are conceptually distinct, they do not represent complete models but rather are components of knowledge translation that may be selected or combined in more or less complex theories of change or models to guide facilitation of knowledge translation.

5.1.2 Data illustrating theme headings

The following section presents data representative of the three major theme headings: 1. Exchange or transfer approaches, 2. Process focused approaches, 3. Strategic focused approaches. Summary tables provide sample quotations to demonstrate the use of each approach at HELP. Headings are explained with reflection on their similarity with categories in published literature.

5.1.3 Exchange or Transfer Approaches

Exchange or transfer approaches were expected to be a necessary component of promoting evidence-informed action and these approaches were strongly evident in the data. These approaches are well researched in the knowledge translation literature so it is not a surprise that in documenting different forms of exchange or transfer, the case study data largely fit predetermined categories.

Approaches under this heading centre on communication. They ensure that potential users become aware of problems that are within their power to solve or that potential knowledge users gain greater understanding about interventions that can improve the situation. Communication can be one way, two way, or iterative and it is the information itself that is expected to direct action and lead to change.

Data representing exchange or transfer are presented below under the more specific, second level headings of researcher driven, interactive, and user driven. These distinctions
parallel Lavis et al.’s (2003) push, pull, and exchange or Weiss’ (1979) research driven, interactive, and problem driven categories. These categorizations can also be seen to reflect different cost sharing arrangements (Contandriopoulos et al., 2010) since the discriminating factor is the role of those with a stake in the knowledge and who drive the knowledge production and exchange.

Within the different categories of research driven, user driven and interactive approaches, some further distinctions are included as meaningful. Dissemination is differentiated from diffusion and instrumental and conceptual approaches are also coded separately.

5.1.3.1 Research driven Exchange or transfer

At HELP, knowledge products range from data summaries to complex syntheses of evidence. HELP is very active in research driven transfer and exchange of data and ideas. Getting information into the hands of potential users requires reaching and informing a range of audiences using publications, presentations, reports, newsletters, events, established networks of relationships, websites, and social media. Information and ideas are disseminated by researchers and also diffused through existing systems and networks.

HELP knowledge translation emphasizes data that reveal problems with the state of developmental well being of children in BC. These data are presented alongside information about localized socio-economic conditions and the availability of local services and supports (assets). Information about assets and discrepancies suggests evidence-informed ideas, such as the importance of protective factors and providing stimulating, safe, and healthy environments for children in critical developmental periods.
Headings of dissemination and diffusion were distinguished in coding by considering whether messages were voluntarily shared among potential users and intermediaries or were delivered directly by HELP personnel through personal communication, websites, publications, reports, social media, or events. Text was coded as diffusion where it was clear that the spread of information was expanded through the networks of intermediaries or users. Diffusion is an important component of extending the reach of HELP data and ideas. While diffusion is encouraged for sharing innovative solutions (instrumental uses) both dissemination and diffusion are also used to share evidence with conceptual intent: to “get them to understand”, see things in a different light or challenge thinking and assumptions and inspire innovation. Conceptual approaches can act as the foundation for other forms of knowledge translation such as interactive production of solution knowledge or it can engage stakeholders in process focus and strategic focus approaches (described in following sections). Knowledge in the form of ideas and problem descriptions becomes a catalyst to motivate and inspire people from multiple institutions and levels of governance to come together in interactive deliberation, collaborative practice, or even political action.

Table 7 below presents quotes that illustrate levels of distinction within the exchange or transfer category. The approximate number of instances coded is included to provide information about the richness of the data under each of these headings.
Table 7 Sample text: research driven exchange or transfer approaches.

<table>
<thead>
<tr>
<th>Approach heading and variation</th>
<th>Lower level distinctions</th>
<th>Sample quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange or transfer (Research driven)</td>
<td>Dissemination for conceptual use (more than 150 instances coded)</td>
<td>...the very first thing that we... that you have to do is... you have to help them understand what is going on so a knowledge change ...getting them to really understand (EDI 3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The profound new insights into the importance of the early years call for a change in the policy core beliefs of key actors in society, inside and outside of government. (Hertzman &amp; Siddiqi, 2013, p. 314).</td>
</tr>
<tr>
<td></td>
<td>Diffusion for conceptual use (more than 50 instances coded)</td>
<td>if you look on the field guide we’ve really tried to focus on creating tools that help people to feel confident sharing data... to understand the data ....to be able to share it ...there’s agendas there’s presentations, there’s presentation tips there’s data slides for pretty much -everything ...(MDI 2)</td>
</tr>
<tr>
<td></td>
<td>Dissemination for instrumental use Less than 50 instances coded)</td>
<td>We were always reluctant to provide very much direct advice to community members in terms of what they should do locally.... we didn’t really feel we had enough information about effective interventions to be really prescriptive around that (negative example: EDI 5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>...it was really important to have quality, affordable childcare to support children’s healthy development.... ...and so that for him... that was a natural policy recommendation coming out of the EDI research (Positive example EDI 12)</td>
</tr>
</tbody>
</table>

5.1.3.2 Interactive exchange or transfer

Alongside presenting research evidence, participants emphasized that HELP maintains a commitment to recognizing practitioner expertise and the value of contextual information as central to effective local planning. In the HELP template, interactive use was coded when user knowledge was combined with research information to determine how to act. This operationalization of interactive use is consistent with Weiss’ (1979) definition of interactive use and it parallels how blending practitioner and research knowledge is discussed in Integrated KT (Kitson & Bisby, 2008; Kothari & Wathen, 2013). It differs in emphasis from how interactive processes might be defined in participatory
evaluation (Cousins & Chouinard, 2012) or participatory action research (Chevalier & Buckles, 2013) where there is a stronger emphasis on the nature of interpersonal involvement.

Interactive exchange or transfer approaches are widely used at HELP. Sample quotes from interview data in Table 8 represent over 150 coded instances of the use of interactive processes for finding contextually relevant solutions. As can be seen from the first quote in Table 8, even within the exchange or transfer category there can be a progression of approaches. Dissemination of data with conceptual rather than instrumental intent is a “starting point” to inspire participation in interactive exchange among stakeholders once they “pick up their pieces” and contribute their local knowledge to finding instrumental solutions.

**Table 8 Sample text: interactive exchange or transfer approaches.**

<table>
<thead>
<tr>
<th>Approach heading and variation</th>
<th>Sample quotes (More than 150 instances coded)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interactive (blending research information with local expertise and contextual knowledge)</td>
<td><em>Hertzman said his data is a starting point, and it's up to stakeholders to apply local knowledge to devise a plan for change, and be ready to use it when funding comes through. ...&quot;None of this matters if we don't do anything. Part of it is everybody picking up their pieces and thinking how they can do it differently.&quot;</em> (2004 HELP Media. Peace Arch News Oct 1, 2004)</td>
</tr>
<tr>
<td></td>
<td><em>we are not ...what's the word prescriptively ... or it's not about telling people what to do. We're not expert in those communities. We are sort of a larger organization that has research skills and following these trends and creating something that is consistent and objective from year-to-year but we are not in these communities we don't know what the context variables are we don't know who the people are that are making these things happen</em> (MDI 3)</td>
</tr>
</tbody>
</table>

5.1.3.3 User driven exchange or transfer

The user driven category is drawn directly from the literature (Landry, Amara & Lamari, 2001; Lavis, et al., 2003; Lomas, 2000; Weiss, 1979). It was demonstrated by data that shows users were sometimes invited to be in the driver’s seat of HELP knowledge
production and exchange. The category of user driven was coded where it was evident that users were actively involved in directing production, selection or use of evidence for their established purposes (Table 9).

Participants reported a perception that user driven aspects in translation promote use. However, data also support the concern that letting user’s drive the production of solution knowledge may mean that rigorous research takes a back seat to other factors in determining what action to take. User driven themes were coded when users were involved in integrating their priorities into production and/or synthesis of knowledge to inform or justify their actions.

**Table 9 Sample text: user driven exchange or transfer approaches.**

<table>
<thead>
<tr>
<th>Approach heading and variations</th>
<th>Sample quotes (more than 50 instances coded)</th>
</tr>
</thead>
</table>
| User driven (involvement supports use) | ...the other thing that’s absolutely critical is this external perspective on why we do what we do...um... so... being deeply connected to... caring about what knowledge users need ...want ...and how they deal with what you’re giving them... (EDI 4)  
...they were the ones who helped put it together and you know, that takes a lot longer, but it was the idea that they helped create it so the data were relevant for them (MDI 4) |
| User driven (action not supported by the research) | ...they don’t know concretely what to do ... and that’s why they resort to ... oh somebody wrote a book and so they do a lunch program ... (MDI7)  
I sometimes think[Name’s] head is spinning in his last place of rest when he sees some of the boneheaded things that’ve basically been done .... ....I think we’re a little bit afraid to look back ...and look a little bit hard... because it might force us to make some societal changes... which we’ve got to do at some point if we’re ever going to fully capitalize on the great work that the unit is doing...(EDI 17) |

**5.1.4 Process use.**

Data and evidence are used at HELP to bring people and organizations together around an issue or problem. Process-focused approaches are a prominent feature of HELP knowledge translation. In contrast with approaches that aim to ensure relevance by shaping
knowledge to users perceived needs, process-focused approaches aim to change the context of exchange and use to make effective use more possible. With process-focused approaches, data and ideas are communicated (exchange or transfer) but the intent is to engage people and resources in interactive exchange (exchange or transfer) to determine what action they may take collaboratively and how they can best use available resources to do so. The idea that optimum responses might depend on improving the capacity of institutions or systems is found in the evaluation literature. Engaging in evaluation process can lead to enhanced organizational capacity and this has been described as “process use” (Patton, 1998; Patton 2007; Preskill & Boyle, 2008; Preskill & Caracelli, 1997). Patton’s (1998; 2007) discussions of process use tend to focus on single organizations, much as capacity building in the knowledge translation literature often refers to the capacity of organizations to understand and communicate knowledge (Hawkes et al, 2016). In analyzing HELP data, the definition of process use was expanded through data analysis to include building the capacity for collaborative and coordinated implementation more generally. Data show that a perceived lack of implementation capacity is the primary driver of much of the process use reported.

HELP participants seek to promote collaborative planning and resource sharing across organizations as a necessary condition for effective action: horizontally between potential partners in service provision and vertically between levels of governance. The quotes in Table 10 below make it clear that process use is considered by HELP participants to be an important step in moving toward action.
### Table 10 Sample text: Process-focused approaches.

<table>
<thead>
<tr>
<th>Approach heading and variations</th>
<th>Sample Quotes (More than 200 instances coded)</th>
</tr>
</thead>
</table>
| Process focus (Capacity Building, skills knowledge resources) | [He] was thinking broadly about using this information for the purposes of getting everyone together...(EDI 1)  
...needing the community involvement ...and multiple players... was really important for ah because as you... as you know ...with any kind of knowledge... people take it up differently and see it differently and so they needed to come together on how they were going to move forward (EDI 3) |
| Process focus (Collaborative planning) | ... his purpose of going out and talking EDI scores, was to try to connect people in the community with different perspectives together... if they weren’t already thinking that way... so I think it was kind of an encouragement to think in an integrated way about all of the things which children and their families need as a necessary condition of being able to act (EDI 1)  
... they knew how they were doing in each wave. So I think like... it was being used at the tables to guide their planning (EDI 6) |
| Process focus (Increased collective focus) | He got all the medical health officers ... and then again ...these were kindred spirits in terms of population health ...but he got us excited about it. (EDI 17)  
What I can do is convene dialogs ...I can bring together people ... I can encourage people to work with others ...whose views are different ...and to try to find common ground ...and I can use the evidence base to bring profile to issues... so it’s a different approach ...it’s a different platform ...it’s also less about actually doing the concrete work ...and it’s more about symbolic ... it’s more about the symbolic support for ... this is something that’s important ... that needs to be addressed (EDI 18) |

#### 5.1.5 Strategic focused approaches

Text coded under the heading “strategic focus” makes reference to strategies for increasing support, motivation or incentive to act. Second level headings include insider persuasion, strategic framing, and third party approaches. Strategies can be relationship oriented, can involve the use of evidence in argument, or can use careful framing of issues to highlight or emphasize areas of agreement and make the knowledge appear more compelling and compatible with the values of intended users. Strategic approaches can also look to motivate potential users through appeals to structures of accountability such as stated commitments, rights frameworks, the authority of science, or through building
support or pressure through third parties. Like process-focused approaches, strategic approaches frequently aim to change the context of service provision or policy making so that new opportunities for action become available or possible.

Second level categories are differentiated based on whether persuasion or incentives require the engagement of people or supports beyond the intended end users of knowledge. The category insider persuasion at HELP refers to direct interaction between researchers and those believed to have power to act. It reflects the view of Haynes et al. (2011) that trusted researchers (rather than their research) can be influential in high level discussions. Insider persuasion shares information using exchange or transfer but it adds a strategic element in that its effect relies on relationships and trust that extend beyond the issue under discussion. Trust is built over time so that the researcher becomes a credible adviser who is sought out for input. Credibility is increased through a perception that the researcher is an ally. The sense of shared purpose can be deliberately enhanced through attention to framing so that the value of knowledge is enhanced through emphasizing any available alignment with user values. Data from interviews report that insider persuasion has been influential at HELP. Knowledge translation participants recognize value in establishing trusting relationships with service providers and decision makers.

While it is possible to bring confrontational ideas forward through insider persuasion, participants recognize that confronting people stresses relationships. Dialogic approaches are preferred and confrontation is done reluctantly by HELP knowledge workers.

*I ... would take meetings ... to some degree ... to say ... wait a sec ... you know... that research...is really raising questions about your public policy priorities...*(EDI 2)
Third party strategies provide an option where HELP wishes to avoid direct confrontation or where policy makers will not act without further incentives or support. Third party strategies look to publics, coalitions or constituencies to support or put pressure on decision makers to “make courageous decisions” (EDI 2).

*If you want more resources or more priority given to certain things then you have to scrape for it ...you have to fight for it... because otherwise somebody ...that’s part of human nature ... you have to socially negotiate that space... and there are competing interests ... and if you want your interest to come to fruition ... then you have to be strategic to get it through.* (EDI 7)

Where pressure or confrontation is deemed necessary, HELP practitioners can engage collaboratively with third parties who then exert pressure, or advocate with an intention to change the incentives that influence decision makers. Mechanisms for applying pressure include civic or political action such as petitions or democratic participation. Table 11 presents quotes that illustrate the use of strategic approaches.

<table>
<thead>
<tr>
<th>Approach heading and variations</th>
<th>Sample quotes (More than 100 instances coded)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic focus (Insider persuasion)</td>
<td>...knowledge translation in the world of politics is the marathon not the sprint. And so you’re kind of tilling the ground ....and you’re partly tilling your credibility.... regardless of who’s in office ....and partly you’re trying to till your credibility with leaders in all parts of the partisan world.... (EDI 2)</td>
</tr>
<tr>
<td></td>
<td>[Name] and [Name] and others now continue to really nurture those political relationships.... I mean we had endless meetings with ministers and MLA’s and the politicians particularly at the provincial governments.... to try to get them on side with some of these ideas....(EDI 5)</td>
</tr>
</tbody>
</table>
Approach heading and variations | Sample quotes
---|---
Strategic focus (framing) | National and international fiscal and monetary institutions need to recognize that spending on early child development is an investment and incorporate it into policy accordingly. (HELP brief: Ten Facts, 2006)

politicians would say ... "It would be wonderful but we can’t afford it" and I would say generally, people ....that’s what the general population would think ... and so I think it was important to help them understand.... to marshal those arguments that demonstrate that ...in fact there would be relatively short term .... positive budget balance.... upon implementation ....(EDI 18)

Strategic focus (Third party approaches) | we needed to kind of shift a bit of this social discourse... we needed... we needed there to be a social understanding ...across the province, and within government ... And we were trying to ... we were trying to push kind of a social movement ....and you know... [name] was being interviewed quite a bit ....we were trying to get our word beyond our communities and academia...

(EDI 3)

the mechanism that we have is if the majority is convinced by a certain argument and puts their foot down things will happen. ... ... if we live in a democratic society or if you believe in democratic processes ... especially if you’re saying it’s not happening through the few that hold power... then what do we have going? We have evidence and good arguments to convince people...(MDI 7)

5.1.6 Summary

Data in the tables above provide examples to illustrate a wide range of approaches in HELP knowledge translation. The overall template presents the range of approaches evident in the data arranged under the three overarching headings that are described separately: Exchange or transfer approaches, process-focused approaches, and strategic focused approaches.

To summarize data about exchange or transfer approaches, HELP engages potential knowledge users in exchange or transfer throughout knowledge production and translation to inform them and raise awareness. HELP is active in research-driven dissemination and diffusion of data, ideas, and specific policy messages. HELP researchers appear to
generally prefer interactive approaches that integrate research with local knowledge rather than use prescriptive or directive approaches. Data also show that HELP participants welcome user involvement from early stages in the production and synthesis of knowledge. Conceptual use – initially described by Weiss, (1979) as enlightenment use – is discussed as a key objective of much of HELP s research driven knowledge work. HELP knowledge translation identifies problems through data and highlights research suggesting new directions for responding.

To summarize data about process focus approaches, this component builds on exchange or transfer by using the knowledge to bring people together. It recruits available resources, focuses attention, and aims to improve collaborative capacity – either within or across organizational settings. Bringing people together around knowledge can also be used to organize influence through third party strategic approaches.

Summarizing strategic approaches, the overall category aims to influence motivation to act. Insider persuasion can be used directly with decision makers or influential leaders with consideration of their personal values and allegiances and consideration of framings that may increase motivation to act. Third party strategies contrast with insider approaches in that they work through others who are persuaded by the knowledge of its importance and who may leverage the motivation of the potential users who have the power to push through decisions between competing options, resource allocation, or policy proposals. Figure 1 below illustrates how different approaches can direct their focus more toward modifying knowledge to align with context or to modifying contexts to be more receptive to knowledge. The three shapes represent: 1. General approaches that are frequently reported in the data. 2. Knowledge centred exchange and
transfer that modify or select knowledge to fit an existing context for use. 3. Context centred exchange, process, and strategic approaches that aim to modify the context for implementation to make exchange and implementation more possible or likely.

**Figure 1 Three emphases in enhancing alignment between knowledge and context**

The template of approaches reported and explained above in Table 6 (p. 96) serves as a necessary list so that the circumstances in which these different approaches are used can be investigated. A careful reading of the quotes presented above shows that the rationale for approaches is sometimes implied or explained within the quotes that are presented to illustrate their use. The following section develops this concept and examines implicit links between approaches and knowledge-context configurations. It also includes explicit explanations of how circumstances for knowledge translation are related to the choice of approaches.
5.2 Results responding to research question 2

What approaches to knowledge translation are observed in the different knowledge-context configurations that HELP aims to influence and what is the rationale for using specific approaches?

Results pertaining to the second research question are based on inductive investigation of interview data that allowed me to examine links between knowledge, context, and approaches to facilitation of knowledge translation at HELP. This second question is closely related to the overarching question about how knowledge-context configurations might be analyzed to informed knowledge translation. Identifying patterns in a case study contributes empirical evidence suggestive of principles or heuristics that may be useful when planning knowledge translation for population health.

The operationalization of knowledge and context was necessary to allow systematic investigation of patterns between domains of knowledge, context, and facilitation. Data from interviews were analyzed to refine which categories of knowledge and context were salient in the analysis of patterns that identify challenges to be addressed by choosing appropriate approaches. Results supporting the operationalizing of these constructs are included in Appendix H.

The question of when, where, and why approaches are used is addressed in two ways. The first is by examining quotes that reveal implicit links between the three domains of knowledge, context, and facilitation. The second is by inquiring into theories of change to understand the rationale for using specific approaches in the case study organization. Six theories (or micro theories) were revealed through inductive analysis. They are presented in this section with attention to the circumstances (knowledge-context configurations) in which they are used and how each incorporates identifiable approaches.
The following headings represent characteristics of knowledge and context (from previous literature) that were determined through data analysis be relevant to identifying challenges and opportunities in knowledge translation circumstances (see Appendix H).

Knowledge

- The degree to which the knowledge products are about clarifying problems or describing solutions
- The degree of alignment or misalignment with existing or status quo practices, norms, and power structures
- As a sub category of alignment, the extent of new investment and/or infrastructure required to use the knowledge
- The extent to which knowledge of effective interventions is established as generalizable and replicable or if it must be synthesized with other localized information to guide or direct action

Context

- Social structuring: characteristics of structure such as institutional communication channels, social norms, trust in relationships, and leadership styles and priorities.
- Cost sharing: levels of mutual investment in the multiple ways that knowledge producers and users can contribute to the production and exchange of knowledge.
- Polarization: the nature of division between groups or factions in relation to an issue or proposed action.

5.2.1 Demonstrated links between approaches and knowledge-context configurations

Data suggest that references to approaches reveal awareness of challenges that are identifiable by considering knowledge-context configurations. The following tables present quotes suggesting how the use of the approaches is related to perceptions about characteristics of knowledge and/or context.

5.2.1.1 Exchange or transfer and knowledge-context configurations

Exchange or transfer approaches were widely used across contexts. Recall that exchange or transfer approaches remain important when using process focused and strategic approaches. The distinction between problem and solution knowledge shows that
problem knowledge is used widely at HELP to direct attention and resources to a problem. An examination of the quotes in Table 12 below shows a connection between knowledge of a problem (“what’s happening”) and conceptual intent (changing understanding and consideration of priorities). By contrast, making specific requests is done alongside recognition or emphasis of alignment between recommendations and values and capacities in contexts for application. The quote about social emotional programs emphasizes how the benefits of these programs align with the educational outcomes on which schools focus.

**Table 12 Exchange or transfer approaches and knowledge-context configurations.**

<table>
<thead>
<tr>
<th>Knowledge translation approach</th>
<th>Knowledge-context configuration/s associated with approach</th>
<th>Sample quote from interview data</th>
<th>Quote from corpus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange or transfer (Research driven toward conceptual use)</td>
<td>Knowledge of problem, ideas, data</td>
<td>...in order to shift any kind of understanding ...thinking... which then translates into potential policy...you have to be able to show people what’s happening... (EDI 3)</td>
<td></td>
</tr>
<tr>
<td>Exchange or transfer toward instrumental use</td>
<td>Knowledge that aligns with priorities as and current practice</td>
<td>...alignment with policy, like in the curriculum, is really critical. Because it really... from a practical ...we come at it from a practical, a very practical perspective on the data collection, districts won’t participate unless they see alignment with what they’re already doing. (MDI 1)</td>
<td>In fact, school- and classroom-based interventions targeted at improving social and emotional learning (SEL) have been identified as a fundamental and effective way to cultivate social and emotional skills, well-being, and ultimately to improve academic achievement in childhood and adolescence (Oberle et al., 2014)</td>
</tr>
</tbody>
</table>

5.2.1.2 **Process focused and knowledge-context configurations**

Process-focused approaches are shown in the quotes below to be a first step on a pathway to action that must first build the capacity of a system or organization to receive
and use the knowledge effectively. The first quote in Table 13 below suggests that process-focused approaches are used where systems do not yet exist. Just as exchange or transfer suggest that providing new information is what is needed, process-focused approaches aim to build capacity to receive and implement evidence-informed action. In cases where capacity is lacking, process-focused approaches are seen as a useful and perhaps necessary component of knowledge translation.

**Table 13 Process-focused approaches and knowledge-context configurations.**

<table>
<thead>
<tr>
<th>Knowledge translation approach</th>
<th>Knowledge/context configurations associated with approach</th>
<th>Sample quote from interview data</th>
<th>Quote from corpus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process focused</td>
<td>Lack of capacity or collective focus is seen as a barrier to appropriate action</td>
<td>&quot;...in an early child development world... because it is not a system at all... in our theory of change... the first step really.... And it’s not entirely sequential because there will be pieces of it along the way... but will be to build that collective capacity (EDI 5) You have to be more systemic... because kids are in so many places... touched by so many organizations... um...... that that simply offering a new program is ineffective (EDI 4)&quot;</td>
<td>&quot;we have no mechanisms to make sure that early child development does not 'fall through the cracks' as an inter-sectoral issue that belongs to everyone and no-one at the same time (Hertzman et al., 2003, p. 35)&quot;</td>
</tr>
</tbody>
</table>

5.2.1.3 Strategic focused approaches and knowledge-context configurations

The use of strategic approaches (third party approaches in the quotes below) is linked to a perception that leverage or incentives are needed to advance prospects for knowledge use. Quotes in Table 14 show that advocacy and public opinion are sometimes considered important parts of overcoming resistance or inertia that is perceived as likely to stand in the way of action to improve population health. The idea that evidence-informed action can be blocked by the “few that hold power” suggests a connection between strategic
approaches and knowledge expected to be resisted by powerful interests (in polarized context) or that aims to challenge status quo social arrangements by advocating for support for “disadvantaged children”. The use of strategic approaches is most evident in appeals for policy and resource allocation at high levels of governance where recommendations have large cost implications and competition for limited resources (polarization) can be expected.

**Table 14 Strategic focused approaches and knowledge-context configurations.**

<table>
<thead>
<tr>
<th>Knowledge translation approach</th>
<th>Knowledge-context characteristics associated with approach</th>
<th>Sample quote from interview data</th>
<th>Quote from corpus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic focus</td>
<td>Solution knowledge Challenges status quo Polarization High resource implications High level policy contexts</td>
<td>...the mechanism that we have is if the majority is convinced by a certain argument and puts their foot down things will happen. ... ... if we live in a democratic society or if you believe in democratic processes ... especially if you’re saying it’s not happening through the few that hold power...(EDI 7)</td>
<td>...it confirmed that work was needed to increase public awareness about local socio-economic conditions and how they were negatively affecting children in the community. The network encouraged people to advocate for policy changes to best support socio-economically disadvantaged children and families. (Schroeder et al, 2009, p. 45)</td>
</tr>
</tbody>
</table>

The use of strategic approaches to knowledge translation is approached cautiously at HELP. Interview participants did not universally endorse these approaches. The overt use of third party approaches was described by some as in tension with the role of a research organization and reported most openly by intermediaries who are operating “at arm’s length” from HELP. The quote above suggesting that HELP encourages networks of service providers to “advocate for policy changes to support socially disadvantaged children” represents an approach rarely openly referenced by HELP personnel.
5.2.1.4 Summary

The extent to which different categories of approach are used in response to what knowledge translation practitioners perceive to be needed is highly relevant to the aim of understanding context-informed knowledge translation. Several issues appear especially salient in determining which approach is used: alignment with priorities and mandates, polarization among potential users, lack of implementation capacity, and recognition of where the knowledge challenges powerful opposition or the status quo. Data suggest that practitioners are recognizing these features as instructive when planning knowledge translation.

It is important to recognize that the list of approaches being discussed is necessarily reductionist in order to investigate knowledge translation in its component parts. In practice, multiple approaches appear to be used in different combinations. Reducing knowledge translation to components allows finer-grained consideration of how approaches are used, together, iteratively, or sequentially. The examination of practitioner theories of change sheds further light on rationales for different approaches, and on the circumstances of their use.

5.2.2 Theories of change

Interview data and documents were examined for evidence of how participants in HELP knowledge translation think and speak about knowledge translation and how their implicit and explicit theories or micro theories of change suggest associations between knowledge-context configurations and the knowledge translation approach used. Six themes were assembled through inductive analysis to represent prominent theories or micro theories of change.
Some of the theories emphasize single approaches. More complex theories suggest a need to integrate several of the identified approaches. I continue to emphasize approaches in this discussion of theories of change since, being grounded in the literature, the approach headings can be expected to be more generalizable than theories derived inductively from data in a single case study. The theories reported here represent the thinking of researchers, intermediaries, and knowledge users who play different roles in knowledge translation. Each theory is presented in turn with sample quotes and reflection about how it applies the approaches from the template.

5.2.3 Examining theories (or micro theories) of change

At HELP, there is no single overarching practitioner theory about how knowledge translation should proceed. This on its own suggests that more than one theory might be needed to address the various challenges and different circumstances that knowledge translation can face. Data show that theories are frequently combined sequentially or applied simultaneously. Multiple approaches promote action at more than one level of practice or governance and across multiple institutions. Hertzman, in a Governor General Lecture (2011), provides an explicit example of a multi component theory of change when he spelled out his thinking about how recommendation for a system of universal services to enrich childhood developmental environments needed to address a series of knowledge translation challenges sequentially to build the type of horizontal and vertical collaboration and high level funding support he saw as needed to implement such a proposal. His description of the proposed progression required is paraphrased here with commentary suggesting how it represents the use of different approaches for different circumstances. Hertzman (2011) cites political scientists Peter Hall and Paul Sabatier to suggests that
knowledge must first be used to change public discourse (dissemination for conceptual use) in ways that eventually challenge core beliefs about the state’s role in child care (framing of the problem) to change the political climate for action (affecting alliances through process focused work to support a third party strategic approach that will appeal for funding).

Hertzman (2011) describes how bringing existing organizations together to work on the problem in horizontal collaboration (process use) is intended to result in better vertical collaboration (broader process use) and increase pressure (third party strategic use) on governments to provide the funding required to enact the type of support he sees as needed. In Hertzman’s (2011) explanation, an appeal for new infrastructure and high-level resource allocation represents one intended action that is only a single step along a path toward establishing the universal system that the evidence suggests would be effective in BC. The sequenced series of objectives incorporates all three of the high level categories: exchange or transfer, process focused and strategic focused approaches. This example is intended to provide a big picture window into what I will call practitioner theories of change. They can be quite complex, as the one described above, or like approaches, more limited in scope and represent a micro theory which represents only part of a longer pathway to use.

A pathway or a theory of change perspective considers how the various targets of influence (for example, specific individuals, communities, institutions, publics, or networks), and the knowledge itself (the problems it highlights and the evidence-informed action it supports) can reveal challenges related to knowledge-context configurations. The presentation of theories below attends to the data that suggest that these micro theories are used in identifiable circumstances to address identifiable types of challenges.
5.2.4 Six theories or micro theories of change

The six theories of change are presented here in Table 15. With the exception of the first, which is stated as a principle, the others provide clear direction. They signify thinking by participants about how knowledge translation objectives can be advanced. Each is elaborated below with sample quotes and analysis of how they relate to the approaches described earlier.

**Table 15 Six theories of change**

<table>
<thead>
<tr>
<th>Theory number and description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No data no problem no action</td>
</tr>
<tr>
<td>2</td>
<td>Provide actionable evidence</td>
</tr>
<tr>
<td>3</td>
<td>Work interactively with users</td>
</tr>
<tr>
<td>4</td>
<td>Unite service providers and build a stronger system of services</td>
</tr>
<tr>
<td>5</td>
<td>Build trusting relationships (across all approaches including public dissemination of data)</td>
</tr>
<tr>
<td>6</td>
<td>Organize support (or pressure) to motivate action</td>
</tr>
</tbody>
</table>

The six headings encompass all of the theories coded inductively from interview data.

### 5.2.4.1 Theory of change 1: No data no problem no action

This theory of change is clearly described in interviews and in publications. It was reported as initially aiming to support the objective of establishing monitoring systems for child development. The implication is that data was intended to clarify the problem and, through demonstrating unacceptable situations, to motivate action. See Table 16.

**Table 16 Sample text: No data no problem no action**

<table>
<thead>
<tr>
<th>Sample quotes representing theory</th>
<th>Characteristics of knowledge</th>
<th>Characteristics of context</th>
<th>Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data no problem no action (EDI 2; EDI 3; EDI 7) the very first thing that we... that you have to do is... you have to help them understand what is going on... so a knowledge change ...getting them to really understand (EDI 3).</td>
<td>Knowledge as data about a problem</td>
<td>Expects action to result from awareness Suggests implicit assumptions (that may be incorrect) about the priorities, motivation and capacities of potential users.</td>
<td>Exchange or transfer Conceptual intent Dissemination Diffusion</td>
</tr>
</tbody>
</table>
This theory is an exchange or transfer theory that appears to carry an assumption that if potential users really understand a problem and it’s causes, they will take appropriate action. Data from interviews and document analysis make it clear that this was a prominent theory in early HELP knowledge translation: “we just …sort of implicitly…. just thought that if you put the data out there …and once that didn’t succeed…” (EDI 2).

While this theory of change may not have inspired resource allocation or public policy as practitioners hoped, the theory appears to have been influential in some contexts. Janet Mort (2004) documented hundreds of innovations or interventions inspired by HELP data. Workers in schools and childcare organizations were strongly motivated to do something about the state of child development in BC demonstrated by HELP data. Mort’s (2004) report shows that service providers acted by doing what made sense to them within the capacities of their organizational settings.

It is important to note that despite demonstrations of local action, indicators of child development began to show a trend toward greater vulnerability. It may be important to note that while HELP was clear about policy recommendations, they did not provide clear direction about what would work in local contexts but were willing to trust that action inspired through better understanding of the problem could be useful.

I think it’s critically important to take that approach... that HELP identifies where possible vulnerabilities exist but they do not tell people what to do... and I think that’s really important because context is everything…(MDI 6)

In terms of the approaches reported earlier, the theory “no data no problem no action” sits initially under the exchange or transfer heading. It aims for conceptual use since the knowledge is intended to change understanding. Making data available uses publicly accessible websites and reports relevant across multiple contexts. Interview data show that whether this theory can be expected to lead to instrumental action depends on two main
contextual factors. The first is that those receiving the information find the problem compelling enough to warrant action (knowledge aligns with values, mandates and priorities). The second is that motivated users will act within the limits of their capacity, in terms of time, skills and resources. It became apparent to many practitioners that simply providing data, while it inspired local effort, was not motivating the type of high-level action that the research was most clearly calling for. Despite the recognition that this theory has often been insufficient on its own, this theory has not been abandoned. It generates discussion and can attract attention, and change understandings to set a foundation for more complex approaches.

5.2.4.2 Theory of change 2: Provide actionable evidence

This theory uses exchange or transfer approaches to promote instrumental use of evidence designed to be “actionable” within the targeted context of exchange and use. Knowledge products are considered to be actionable when they motivate and guide feasible action in a specific context (see Table 17). Informants expressed a preference for actionable evidence as a useful facilitator of knowledge translation (in comparison with information about a problem that service providers had little capacity to solve).

Table 17 Sample text: Provide actionable evidence

<table>
<thead>
<tr>
<th>Sample quotes</th>
<th>Knowledge</th>
<th>Context</th>
<th>Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>...it does provide... information that’s directly malleable and actionable... unlike the EDI... so it’s got information about connectedness to adults... and assets that you can actively go out and start changing... and those are changeable in schools... and they’re changeable in communities...(EDI 4)</td>
<td>Solution knowledge that directs action Alignment</td>
<td>Knowledge aligns with norms practices capacity and mandates (leadership) in a specified institutional context</td>
<td>Dissemination Diffusion Interactive exchange</td>
</tr>
<tr>
<td>Sample quotes (continued)</td>
<td>Knowledge</td>
<td>Context</td>
<td>Approach</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td><em>We’re profiling seasoned MDI-users and asking them to share their experience with you.</em> (HELP n.d.)</td>
<td>Synthesis of data and local knowledge to determine action Alignment</td>
<td>Interactive processes assure that innovations have alignment with established organization and its norms capacity and mandates</td>
<td>Exchange or transfer Targeted work to engage with opinion leaders (diffusion)</td>
</tr>
<tr>
<td><em>….we’re trying to identify leaders in schools and school districts and communities who are heavily involved in the MDI and… so… with the… with the intention that they share stories and progress</em> (MDI 1)</td>
<td>Solution knowledge Expert synthesis</td>
<td>Alignment is a central challenge Resource implications or ideological contestation can preclude agreement</td>
<td>Dissemination</td>
</tr>
<tr>
<td><em>…if you’re talking to the federal government you would not have these circle of sit down for half a day to hash out what the issues are…. I think it requires a much … much more direct messaging… more of that prescriptive … here’s a policy brief, here’s three important points…</em> (MDI 3)</td>
<td>Solution knowledge Expert synthesis</td>
<td>Alignment is a central challenge Resource implications or ideological contestation can preclude agreement</td>
<td>Dissemination</td>
</tr>
<tr>
<td><em>…the messaging was more specific … very much so around what policy was required to make a difference… I guess that was really about… the approach of proportionate universality. We need to have universal services with specialized services for families who were marginalized. We needed to have civil society or health promotion type activities. Like a whole range of things. Which is not something that they really wanted to hear because that was way too hard.</em> (EDI 5)</td>
<td>Solution knowledge Expert synthesis</td>
<td>Alignment is a central challenge Resource implications or ideological contestation can preclude agreement</td>
<td>Dissemination</td>
</tr>
</tbody>
</table>

The promotion of actionable evidence at HELP explicitly aims to encourage diffusion of innovative solutions found by network members to be actionable and valuable for advancing their objectives. Contextual awareness is highly relevant to this theory because the type of action and the engagement in exchange are both limited by knowledge-
context configurations. Knowledge is only actionable where there is capacity and motivation to act. An interview participant stated openly “districts won’t participate unless they see alignment with what they’re already doing…” (MDI 1).

To promote alignment, actionable knowledge can be developed through interactive processes to ensure the fit between innovations and contexts for their use. The quotes above show that diffusion is actively promoted in education settings through processes of interactive exchange and coproduction. The idea of sharing “across and in similar jurisdictions” relies on existing channels of communication and implies generalizability on the basis of contextual similarity.

The promotion of actionable evidence using exchange or transfer strategies assumes voluntary uptake. Two quotes above refer to policy recommendations. The first of these notes that interactive strategies are not considered appropriate in these contexts due to time pressures on policy actors. Policy briefs and recommendations represent expert syntheses that are presented by HELP as actionable within policy networks. However, recommendations for new resource allocation and public policy are not necessarily perceived as actionable by policy makers.

...it actually became extraordinarily difficult for government to deal with... because the data and the information almost gets tainted by the prescription of ...you know we couldn’t do exactly what was being asked. (EDI 15)

What users see as actionable is dependent on alignment with existing values, practices, norms, mandates, and capacity. Recognizing that knowledge is be more likely to be used when it is valued by users shapes a lot of HELP’s knowledge translation:

...absolutely critical is this external perspective on why we do what we do...un... so... being deeply connected to... caring about what knowledge users need ...want ...and how they deal with what you’re giving them... and adapting consistently to be able to better serve what they need... (EDI 4)
Where users value knowledge, or shape solutions themselves through participating in production and exchange, much of the work of ensuring capacity and motivation is already done.

### 5.2.4.3 Theory of change 3: Work interactively to inspire and design interventions.

This theory can stand-alone and it represents a pathway to producing and sharing the type of knowledge that will be actionable as described above. It is almost synonymous with the interactive approach to exchange or transfer described in the knowledge translation literature and in the HELP template. It represents a willingness to share costs (work time and investment) of production and exchange. Informants are explicit about how this approach is associated with collaborative synthesis or collaborative production of solution knowledge in specific contexts of use as a way of ensuring relevance (see Table 18).

#### Table 18 Sample text: Work interactively to inspire and design interventions

<table>
<thead>
<tr>
<th>Sample quotes</th>
<th>Knowledge</th>
<th>Context</th>
<th>Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>...the more you involve all the voices ...and the more you ensure that the decisions that are made are the decisions that are made by the group ...(MDI 6)</td>
<td>Dissemination of data about a problem Collective synthesis or coproduction to produce knowledge of a solution Knowledge that aligns with context</td>
<td>Established network or organizational context for exchange and use Agreement about objectives</td>
<td>Exchange or transfer Dissemination Interactive exchange</td>
</tr>
<tr>
<td>“We’re not here to be adversarial” ... we’re really here to support you in partnership because we know that you also want better outcomes for kids and so let’s figure out together how to make that happen...(EDI 5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>if we develop really good high-quality information and if we engage with people so that we learn something from them about the context that we don’t know and we share with them what we’ve got.... That from that will emerge understanding about next steps (EDI 4)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The locally embedded aspect of determining and enacting solutions applies in situations where potential users are willing and able to engage in processes of synthesizing
and mobilizing knowledge to achieve objectives that are valued by all stakeholders who participate in interactive processes (cost sharing).

...building on the expertise of the various communities is so important ... they know what their needs are ... they know what the issues are... they know what’s working really well they know where their challenges are ...and I just don’t think that anyone can be dictating what any community does ...it needs to come from them ...they need to own it ...they need to be the leaders ...and it needs to be co-designed by them and HELP really took that approach.(MDI 6)

Use of this theory is strongly evident in HELP’s knowledge work with service delivery personnel in schools and community tables. Where research produces knowledge collaboratively to help existing organizations (such as schools or health services) do what they do more effectively, participants suggest that uptake is likely even if the action taken is constrained by the bounds of organizational capacities. Whether the resulting action is effective is a separate question that is not answered here or by the research that inspired the action. Where research points to a need for high-level policy action or new infrastructure, or if stakeholders are competing among themselves for funding, the data report less success with collaboratively producing actionable interventions that are readily taken up.

The quotes below show how capacity limitations can constrain action to small local innovations even where universal responses are indicated. While participants are not suggesting that parent baby yoga or healthy baby fairs are not worthwhile, it appeared from their tone that they were unconvinced that these activities will contribute to improved population health in the way that larger and more universal responses might.

so if social and emotional development is highlighted as something that’s important then ... they would do things to try and promote... say parent well-being, parenting, as well ...highlighting let’s see... programming I guess is one logical thing that they would do... is maybe think about... maybe we need to have more parent baby yoga... (EDI 6)

you know they would do healthy baby fairs and things like that... so there’s a number of things that I would call small-scale steps that were taken across the province... but nothing, no real action on quality universal childcare. But
what happened to the EDI over that decade or 15 years? It didn’t change. If anything, the vulnerability level got worse over time. (EDI 12)

Disappointing results from user driven local program responses have fueled something of an internal debate at HELP about whether more energy needs to be focused on determinants through strategic high-level policy work. Some interview participants recognize limitations in prioritizing work with those who lack the capacity for the type of action the research suggests.

You can you can see all the ways that they’re coming together and volunteering...I mean they might get the libraries involved...and who’s doing parks and rec...and they’re all...but at the end of the day none of them raise revenue...really in any substantial way... and so all of their complexity may be distracting from the complexity involved in shaping the systems provincially and federally. (EDI 2)

In contrast, another participant remains convinced of the value of local responses and makes a pragmatic choice to focus on local action with a hope that it may eventually be supported by high-level action.

So obviously you have to think at some point about the relationship between communities and governments and policy makers right but it got too complicated too quickly. So right now we’re all imagining ourselves as living in this little glass dome that’s going to be our system for now because it’s all we can take on (EDI 5).

5.2.4.4 Theory of change 4: Use evidence to unite service providers and build a stronger system of services

This theory of change refers to an aspect of knowledge translation that aims to make effective action possible by changing the context itself: working to make systems more capable and effective through changing how they work and what they do. This approach represents an important move away from letting knowledge production be constrained to responding to the needs and objectives of existing organizations. It uses exchange or transfer of ideas, but with a new intent. Knowledge of a problem is used to rally
stakeholders to work collaboratively and find new ways to do things. It represents one of the key thrusts of process-focused approaches described earlier in the HELP template.

...increasingly, I think if we come from a place where we start with what institutional boundaries exist...and with what people can and can’t do... again we lose the power of more systemic change.  (EDI 4)

This theory emerged early in HELP's knowledge translation work. It recognized challenges inherent with a fragmented early childhood sector for service delivery. It represents a proactive approach that recognizes potential benefits that could be realized through a more coordinated and efficient response that engages the resources of multiple organizations and the major BC departments of education, child and family development, and health. It uses knowledge of a problem to bring people and organizations together and invites them into processes of interactive exchange to determine what to do and how to engage all available resources in collaborative work. The knowledge and the context for its delivery can therefore be developed simultaneously. This theory responds to a perception that effective service delivery requires an enhanced capacity to respond (see Table 19).
<table>
<thead>
<tr>
<th>Sample quotes</th>
<th>Knowledge</th>
<th>Context</th>
<th>Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>I mean the theory of change was really about mobilizing the power of the collective... so really thinking about ...not only that we would be inspiring the awareness an individuals to do something different ...but that we would be inspiring shared awareness together... I mean there was a real recognition from the beginning that in order to impact children’s development... that happens in a whole bunch of domains... and so you wouldn’t just want to work with public health or you would want to just work with the education system or whichever... right?... that was very fundamental (EDI 5)</em></td>
<td>Problem knowledge for attention and engagement Collective synthesis to determine action</td>
<td>Intersectoral contexts Capacity is constrained by fragmentation duplication or lack of focus and coordination</td>
<td>Process focus Build collective focus Recruit organizations and potential contributors into collaborative practice</td>
</tr>
<tr>
<td><em>HELP raised the profile of the importance of community voice ...and not just community voice ...but actual decision-making ... strategic decision-making and thinking more systemically versus thinking only about your own either school or school district... thinking systemically ...how do we work together to move this forward ...for all of us... in the community no matter what your role is. (MDI 6)</em></td>
<td>Problem knowledge for attention and engagement Collective synthesis to determine action Process knowledge</td>
<td>Organizational context seen as limited in capacity to meet need</td>
<td>Process focus Build collective focus Recruit organizations contributors into collaborative practice Education and process guidance</td>
</tr>
<tr>
<td><em>...there needs to be that connection between... between those provincial initiatives and the regional and local initiatives... Just introducing those policies or investments in and of themselves will probably not lead to the kinds of change... because they will land within communities where there’s already not a level playing field. So having the kind of community work that we have done... more of it... I really do believe is an important piece of that so the people are aligned if we did get those policy changes and how that could land in their community in a way that would actually create positive impact: so the pieces are tied together. (EDI 5)</em></td>
<td>Problem knowledge for attention and engagement Collective synthesis to determine action Process knowledge</td>
<td>Multi-level intersectoral contexts Capacity constrained by fragmentation competition or lack of focus and coordination</td>
<td>Process focus Build collective focus Recruit levels into collaborative planning</td>
</tr>
</tbody>
</table>
The theory represented by these quotes is not well represented in the knowledge translation literature. The quotes above illustrate how they are being interpreted here as an extension of process work as described in the evaluation literature (Patton, 1998; 2007). This theory appears to have developed at HELP around the objective of building and maintaining coordinated systems to prioritize child development where none existed.

A close look at the quotes presented above shows that some contextual differences are implied in the quotes that suggest important variations within this theory. For example, the second quote speaks to the value of schools reaching out to community organizations as allies. The challenge of reaching out from a stable institution to expand system capacity differs from the goal of bringing together services who compete for funding and who have different mandates. It also differs from the challenge of changing how different levels of governance communicate and different departments share resources. Some of the process work being done at HELP is ambitious and calls on systems thinking (process knowledge) about how change processes can instigate change and spread through systems both
horizontally and vertically. Some of the process improvement sought by HELP knowledge workers is even envisioned as occurring at the level of personal transformation. The reference to a heart connection below speaks to the importance of focusing on values as a way of overcoming the structural impediments to bringing disparate organizations together.

*Fundamental to the systems work is some personal and interpersonal development... which is really about saying you can’t work together if you’re only working from your head entirely. There has to be a heart connection, even if you’re a regional manager in the Ministry of Child and Family Development, so it’s bringing that piece together with the... with more capacity to think in your head systemically and to understand all of this... because the loops and the feedback and how systems work..... so it’s really about putting all those heart and head pieces together.... and helping people work cross-sectorally to create change (EDI 5)*

The data show that the link between applications of this theory and the contexts that call for its use is quite transparent. The theory, and the process-focused approaches it represents, are direct responses to perceptions that the context lacks capacity for effective action or that improving the capacity to receive, share, and use the knowledge will make it more possible to do what evidence suggests is needed. If coordinated collaborative work is seen as necessary, action to build intersectoral capacity as a component of knowledge translation is a logical response.

**5.2.4.5 Theory of change 5: Build trusting relationships**

This approach is relationship oriented and recognizes the importance of networks of connections. Sample quotes below illustrate this theory and show awareness that relationships have an impact on how data, evidence and expert syntheses are perceived as credible and valuable. While building relationships has not generally been highlighted as a pathway to evidence use on its own, the importance of how the messenger is perceived is not a new finding in communication (Allen et al., 2007; Haynes et al., 2011, Shea et al., 2018).
Relationship-oriented theory is widely discussed across a full range of contexts at HELP (see Table 20). In seeking to build trusting relationships, HELP participants emphasized the importance of appealing to the values and motivations of potential actors.

**Table 20 Sample quotes: Build trusting relationships**

<table>
<thead>
<tr>
<th>Sample quotes</th>
<th>Knowledge</th>
<th>Context</th>
<th>Approach, variation, and distinctions</th>
</tr>
</thead>
<tbody>
<tr>
<td>...the messenger is the message. And it’s not to say that these people don’t have a amazing integrity and great scientists but if they went on social media would they be recognized... [He] would be... I mean [He] was the sort of the Norm of cheers ... everybody knew him. (EDI 17)</td>
<td>Any knowledge</td>
<td>Any context</td>
<td>Exchange or transfer, Interactive approaches</td>
</tr>
<tr>
<td>...knowledge translation in the world of politics is the marathon not the sprint. And so you’re kind of tilling the ground ... and you’re partly tilling your credibility.... regardless of who’s in office ...and partly you’re trying to till your credibility with leaders in all parts of the partisan world....(EDI 2)</td>
<td>Expert synthesis</td>
<td>High level political contexts, Uncertain alignment</td>
<td>Strategic focus, Insider strategies, Framing</td>
</tr>
<tr>
<td>I mean we had endless meetings with ministers and MLA’s and the politicians particularly at the provincial governments.... to try to get them on side with some of these ideas.... Typically they would be supportive.... but all of that time we had a provincial government that didn’t ...necessarily.... it wasn’t in their political agenda to support these kinds of things....(EDI 5)</td>
<td>Expert synthesis, Solution knowledge</td>
<td>Misalignment, Lack of political support</td>
<td>Strategic focus, Insider strategies, Argument</td>
</tr>
<tr>
<td>...it has to be provided by political leadership.... So we all wanted to continue to........to really nurture those political relationships.... ... to try to get them on side with some of these ideas...  ( EDI 5)</td>
<td>Expert synthesis</td>
<td>High level political contexts, Uncertain alignment</td>
<td>Strategic focus, Insider strategies, Argument</td>
</tr>
<tr>
<td>I think the key process that makes change happen or not happen are the relationships... the one-on-one relationships that sort of our knowledge translation team have with people who are (I’m trying to think of the word) not exactly stakeholders but champions (MDI 3)</td>
<td>All knowledge</td>
<td>Single organizational context with effective networks for communication</td>
<td>Exchange or transfer, Diffusion</td>
</tr>
</tbody>
</table>

This theory can be used with any of the others and across contexts. Interview participants emphasized that HELP seeks to build relationships in every encounter and so it
is not surprising that this theory is represented along with each of the categories of approaches. Building relationships can be seen as facilitative of exchange or transfer approaches by adding credibility to messages. It is a component of diffusion approaches since networks are strongly reliant on relationships. Relationship building is also a key component of process-focused work. When used at a high level to nurture trust and relationships between elite researchers and people in leadership and decision making roles, it can be seen as the strategic approach of insider strategies (described earlier). HELP’s work with leaders, champions and policy makers recognizes power dynamics and considers how influential people can be engaged as allies.

In areas where relationships are used strategically to get people “on side”, demonstrating values alignment through careful selection of framings can be part of building trust and even politically active coalitions through emphasizing areas of greater agreement. For example, economic framings can shift the focus from contested ideological positions such as social justice and equity to ideas of investment and return.

...so it’s important to help people understand ... to marshal those arguments that demonstrate that ... in fact there would be relatively short term ... positive budget balance .... upon implementation ....EDI 18

I’ve worked very closely with our Chamber of Commerce here in Victoria ...and helping our mayor get 300 more daycare spaces in Victoria ... and you know what they’re coming to realize that ... this is something ... and they’re doing it from an enlightened self-interest perspective ... when you have really good quality day care you make available high-quality talented women for the workforce ... ...so from an economic perspective this makes sense ...(EDI 17)

5.2.4.6 Theory of change 6: Organize support (or pressure) to motivate action.

This theory of change is about modifying incentives or motivation by enlisting third party pressure or support. It involves working with people who are not positioned to take recommended action themselves but who work to change incentives that may motivate
those who are. This theory adds intentional engagement with people and groups for the express purpose of influencing those with the power to act. The extra step makes the approach more complex and more controversial. Data suggest it would generally be avoided unless needed. The quotes in Table 21 below note that it is used when the “evidence is not sufficient”, “politicians will find it impossible”, “you have to fight for it”.

This theory of change recognizes conflict and competition and looks for allies. The strategy is used to defuse or overcome resistance and can therefore be seen as linked to contexts where resistance or inertia are expected or encountered. Support can come from organizations, publics, or advocates and the constituencies they mobilize.

**Table 21 Organize support (or pressure) to motivate action**

<table>
<thead>
<tr>
<th>Sample quotes</th>
<th>Knowledge</th>
<th>Context</th>
<th>Approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>...at the end of the day... it’s more about the complementary pieces ... but it’s the right mechanism ...you have to fight for it... because otherwise somebody ...that’s part of human nature ... you have to socially negotiate that space... and they’re competing interests ... and if you want your interest to come to fruition ... then you have to be strategic to get it through. (EDI 7)</td>
<td>Expert synthesis Solution knowledge Knowledge that challenges status quo</td>
<td>Polarized</td>
<td>Strategic focus</td>
</tr>
<tr>
<td>...politics responds to those who organize and show up.... I’ll stop there. What does that then imply? That an insider game with experts taking data solely to other ...you know ....elite decision-makers.... either in the bureaucracy, or in elected politics.... is unlikely to be successful when you are swimming upstream... when you are pushing for investments that challenge the status quo. (EDI 2)</td>
<td>Expert synthesis Solution knowledge Knowledge that challenges status quo</td>
<td>High level policy context Polarization Contestation</td>
<td>Exchange or transfer Strategic focus Insider persuasion Third party</td>
</tr>
<tr>
<td>Sample quotes (continued)</td>
<td>Knowledge</td>
<td>Context</td>
<td>Approach</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------------</td>
</tr>
</tbody>
</table>
| Well what I mean by a movement is a campaign... a highly strategic approach to bringing people together in a coalition... that creates a pressure on government to respond... again that is what we are asking people to do... to formally endorse the 10 a day plan... and the pressure from this coalition... supported by the highly credible research evidence... about a workable solution that has been carefully developed over time... creates the political space that puts the plan on the table for discussion... and now more than that... response and investment... (EDI 13) | Expert synthesis  
Solution knowledge  
Resource implications                                                                 | High level policy context  
Polarization  
Contestation                                                                 | Exchange or transfer  
Process focus  
Strategic focus  
Third party                                                                 |
| ...politicians need political cover to make courageous decisions. And organizations... especially with large memberships... can sometimes provide that... in the way that the elite intellectual... going to another elite decision maker can’t quite do. (EDI 2)                                                                 | Expert synthesis  
Solution knowledge  
Resource implications                                                                 | High level policy context  
Polarization  
Contestation                                                                 | Exchange or transfer  
Process focus  
Strategic focus  
Third party  
Political cover                                                                 |
| So when you have an organization who are not typically associated with this type of advocacy becoming advocates I think that’s very powerful... it gives politicians the cover they need to perhaps make some decisions which are challenging (EDI 18)                                                                                     | Expert synthesis  
Solution knowledge  
Resource implications                                                                 | High level policy context  
Polarization  
Contestation                                                                 | Exchange or transfer  
Process focus  
Strategic focus  
Third party  
Political cover                                                                 |
| ...until we have social consensus around it we’re not... politicians will find it impossible to move in that direction... (EDI 18)                                                                                                                                                                                                                     | Expert synthesis  
Solution knowledge  
Resource implications                                                                 | High level policy context  
Polarization  
Contestation                                                                 | Exchange or transfer  
Process focus  
Strategic focus  
Third party                                                                 |
| the research has continued to come out that really shows why we need to do it... and it certainly is motivational knowing that this is the right thing to do... but you know... the frustration is that researchers should really be asking... why the hell aren’t you doing more... and the big challenge is to get the rest of society on board... (EDI 17) | Expert synthesis  
Solution knowledge  
Resource implications  
Knowledge that challenges the status quo                                                                 | High level policy context  
Polarization  
Contestation                                                                 | Exchange or transfer  
Process focus  
Strategic focus  
Third party                                                                 |
Organizing support or pressure applies third party approaches as described under the strategic focused heading. One of the potentially important manifestations of this theory is expressed in the sample quotes that use the term “political cover”. This reflects the idea that politicians might be personally persuaded of the value of policy action (perhaps by exchange or transfer approaches or relationship based strategic argument) but not feel sufficiently empowered or secure in their role to make the “courageous decisions” necessary. Providing visible and vocal support is reported to make it easier for a policy maker to justify action in contravention of interests or alliances that prefer the status quo.

Much of the support for work that overtly aims to modify incentives as a pathway to action comes from people who are not employed as researchers or as part of the HELP knowledge translation team. However, advocacy to challenge status quo systems and responses is supported by HELP even where it is kept at arms length. The following quote from an intermediary shows that HELP’s involvement is not in the forefront of political action yet they provided the evidence and they proposed and endorse the plan.

*We have used highly credible research evidence to come up with a clear and workable solution and we have built a movement ... and the political space to bring the issue up in policy with the support of many sectors and organizations. For example... It was very important that HELP endorsed the 10 a day plan... (EDI 13)*

*it was a theme that came up over and over.... And one that probably is still discussed... is that we walk this fine line as a research center we can’t be seen as advocates...*(EDI 3)*

*you need to actually mobilize people... you need to move from such a focus on research ... to a focus on advocacy and a campaign ... (EDI 12)*

5.2.5 Summary

Findings in this chapter outlined classification systems for systematic consideration of knowledge-context configurations and showed that the use of specific approaches to knowledge translation in the case study can be informed responses to identified challenges.
Analysis of theories of change provided further information about how practitioners think about the challenges they have faced and how different theories of change incorporate approaches as needed to address identified challenges.

Theories of change that emphasize communication and the exchange or transfer of information appear to respond to a perception or assumption that information and understanding will promote action, either directly or by engaging stakeholders in expanding their capacity to act through collaborative planning or strategic action. In the circumstances where information alone was reported to inspire action (represented by the base of the pyramid in Figure 2 below), the reported action aligned with the values practices, capacities and mandates of existing organizations, systems or service providers.

Where contexts were seen to lack the capacity for recommended action, process approaches were added to build on the exchange of information to attract partners through attention to issues and inviting interactive engagement around ideas or data about how to build and strengthen systems. In Figure 2 below, the perceived lack of capacity is shown as a contextual challenge or barrier that flags the need for approaches beyond exchange or transfer. Process-focused approaches represent a conceptually distinct extension to exchange or transfer when they aim to build capacity rather than to simply inform. In the case study, process use is often added to exchange or transfer approaches as a non-controversial option to make effective action possible without large resource implications.

Data support a view that process-focused approaches at the service provision level may be helpful yet still not be able to recruit sufficient capacity to support the type of universal services that HELP evidence calls for. Accessing additional resources relies on policy and resource re-allocation decisions beyond the direct control of service providers.
and their organizations. The challenge of building motivation or political will to provide high level support and funding is shown as the second level barrier in Figure 2. In these circumstances, strategic approaches are added to theories of change to appeal for funding, deemphasize polarization, or provide support to overcome or avoid resistance. Strategic approaches at HELP rely on relationships and they can use framing to persuade or engage with allies. They can also contribute to public debate and use HELP evidence in advocacy, action by individuals or coalitions, and/or in democratic processes to influence the motivation of those with the power to bring in new resources or high-level policy.

**Figure 2 Context contingent model: Approaches added to address barriers**

The arrows in the model indicate different departure points toward end use. Where more elements are needed and added, theories of change become more complex. Approaches build from a foundation of exchange or transfer and add process and strategic approaches only as necessary to overcome barriers of capacity or motivation that are revealed through
analysis of knowledge-context configurations. It is important to note that while instrumental action is the end goal of knowledge translation work, the data, and this figure, suggest that there may be several intervening steps before this can be achieved with population health interventions.

5.3 Results responding to research question 3

To what extent can the use of knowledge translation approaches at HELP be anticipated by considering generalizable descriptions of knowledge-context configurations?

This section of findings responds to the third research question. It adds strength to earlier results by applying a theory testing orientation to examine support for the proposition (previously described) that approaches may be understood as responses to identifiable challenges and therefore may represent guidance for practitioners that is generalizable beyond the case study.

The comparative cases were selected to differ from each other in the characteristics of knowledge and context they represent. If patterns of approach in the cases differ as emerging theory anticipates, some empirical support is provided for a proposition that the differences are due to the nature of challenges the different knowledge-context configurations represent. The claims being tested follow from those presented in the literature review (p. 47). They include propositions related to exchange or transfer approaches, process focused and strategic focused approaches.

- In the exchange or transfer category, more solution-oriented evidence and a more established institutional communication and leadership structure led to expectations that the MDI case would demonstrate more use of diffusion to promote instrumental use.
- The more intersectoral and fragmented context of the EDI case was expected to lead to more emphasis on process-focused approaches.
• The EDI case openly emphasizes associations between outcomes and socio economic status, it points to inequities and calls for new infrastructure and large investments that are associated with polarization. More emphasis on strategic focused work was anticipated.

Results are presented by comparing templates that represent the data from the two cases: first in an overall comparison and then separately under the three main headings: exchange or transfer, process focus and strategic focus. The EDI and MDI facilitation templates were both developed from the parent HELP template using template analysis. Data were isolated for the separate cases on the basis of clear references to the knowledge products associated with each (EDI or MDI). Data supporting the extent to which the cases represent the knowledge-context configurations as designed are provided in Appendix I.

The case comparison component of this study aims to build on a previously published context-contingent framework (Contandriopoulos et al., 2010) which proposes that specific knowledge translation approaches will be found suitable in some but not all cases - dependent on identifiable characteristics of knowledge and context. A side-by-side comparison of templates that summarize the approaches used provides an overview of how the EDI and MDI templates are similar in some areas yet differ in other ways that are either stark or nuanced. Differences and similarities are elaborated under the three headings of exchange or transfer, process focus and strategic focus with reference to how the findings support or refute the claims made in relation to each.

5.3.1 Overall comparison: EDI and MDI cases

The following table (Table 22) shows EDI and MDI templates side by side to provide a big-picture comparison.
### Table 22 Comparison between EDI and MDI Template

<table>
<thead>
<tr>
<th>EDI Knowledge translation approach Template</th>
<th>MDI Knowledge translation approach Template</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exchange or transfer</strong></td>
<td><strong>Exchange or transfer</strong></td>
</tr>
<tr>
<td>Interactive learning</td>
<td>Interactive learning</td>
</tr>
<tr>
<td>Solutions generated with users</td>
<td>Solutions generated with users</td>
</tr>
<tr>
<td>Local and regional level</td>
<td>Local and regional level</td>
</tr>
<tr>
<td>Support diffusion to extend participation</td>
<td>Support diffusion of innovations</td>
</tr>
<tr>
<td>Research driven</td>
<td>Research driven</td>
</tr>
<tr>
<td>Dissemination for instrumental use</td>
<td>Dissemination for conceptual use</td>
</tr>
<tr>
<td>Provincial / federal level</td>
<td>Local level</td>
</tr>
<tr>
<td>Dissemination for conceptual use</td>
<td>Dissemination for instrumental use</td>
</tr>
<tr>
<td>Raise awareness of problem</td>
<td>Local level</td>
</tr>
<tr>
<td>Challenge assumptions</td>
<td>Dissemination for conceptual use</td>
</tr>
<tr>
<td>Suggest solutions to potential users</td>
<td>Raise awareness of problem</td>
</tr>
<tr>
<td>High level governance</td>
<td>Challenge assumptions</td>
</tr>
<tr>
<td>Inform local resource distribution</td>
<td>Suggest solutions to potential users</td>
</tr>
<tr>
<td>Support diffusion of innovations</td>
<td>Local and regional level</td>
</tr>
<tr>
<td>User driven, evidence of unexpected uses</td>
<td>Support diffusion of innovations</td>
</tr>
<tr>
<td><strong>Process focus</strong></td>
<td><strong>Process focus</strong></td>
</tr>
<tr>
<td>Capacity building across institutions</td>
<td>Capacity building centred in education</td>
</tr>
<tr>
<td>Initiate and support intersectoral networks</td>
<td>To focus network attention within schools</td>
</tr>
<tr>
<td>Increase collaborative planning</td>
<td>To engage students as partners</td>
</tr>
<tr>
<td>Capacity building within systems</td>
<td>To engage community partners</td>
</tr>
<tr>
<td>Data literacy</td>
<td>Evidence used in argument</td>
</tr>
<tr>
<td>Focus network attention</td>
<td></td>
</tr>
<tr>
<td><strong>Strategic Focus</strong></td>
<td><strong>Strategic Focus</strong></td>
</tr>
<tr>
<td>Insider work with leadership</td>
<td>Insider work with leadership</td>
</tr>
<tr>
<td>local regional and provincial levels</td>
<td>local regional and provincial levels</td>
</tr>
<tr>
<td>Evidence used in argument</td>
<td>Appeals to academic authority</td>
</tr>
<tr>
<td>Strategic framing in argument</td>
<td>Evidence used in argument</td>
</tr>
<tr>
<td>Appeals to economic arguments</td>
<td></td>
</tr>
<tr>
<td>Appeals to values social justice and equity</td>
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<tr>
<td>Appeals to rights</td>
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<tr>
<td>Third party strategies to increase incentive to act</td>
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<tr>
<td>Advocacy and organizing</td>
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<tr>
<td>Publics, institutions</td>
<td></td>
</tr>
<tr>
<td>Appeals to academic authority as support</td>
<td></td>
</tr>
<tr>
<td>Political cover / support through public engagement</td>
<td></td>
</tr>
</tbody>
</table>
Bold green text is used with exchange or transfer approaches. Process-focused approaches are presented in plain blue text. Strategic focused approaches are in bold red italics.

There is considerable consistency between the cases in the use of exchange or transfer approaches. Differences in process-focused approaches are apparent in their different forms and in their relative emphasis. Third party strategic focused approaches are reported only in relation to EDI work. Anticipated and evident differences are elaborated below using sample quotes under the separate headings: exchange or transfer, process focus, and strategic focus.

5.3.2 Anticipated differences: Exchange or transfer

Differences within the exchange or transfer approaches were subtle and not entirely as anticipated. Noted differences in knowledge-context configurations suggested that the MDI case would demonstrate more use of instrumental approaches on the basis of the knowledge product. The MDI case was also expected to show increased use of diffusion approaches due to having a more structured organizational context to support networks and communication.

Table 23 Template comparison: Exchange or transfer approaches

<table>
<thead>
<tr>
<th>EDI Exchange or transfer</th>
<th>MDI Exchange or transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interactive learning</td>
<td>Interactive learning</td>
</tr>
<tr>
<td>Solutions generated with users</td>
<td>Solutions generated with users</td>
</tr>
<tr>
<td>Local and regional level</td>
<td>Local and regional level</td>
</tr>
<tr>
<td>Support diffusion to extend participation</td>
<td>Support diffusion of innovations</td>
</tr>
<tr>
<td>Research driven</td>
<td>Research driven</td>
</tr>
<tr>
<td>Dissemination for instrumental use</td>
<td>Dissemination for conceptual use</td>
</tr>
<tr>
<td>Provincial / federal level</td>
<td>Local level</td>
</tr>
<tr>
<td>Dissemination for conceptual use</td>
<td>Dissemination for conceptual use</td>
</tr>
<tr>
<td>Raise awareness of problem</td>
<td>Raise awareness of problem</td>
</tr>
<tr>
<td>Challenge assumptions</td>
<td>Challenge assumptions</td>
</tr>
<tr>
<td>Suggest solutions to users</td>
<td>Suggest solutions to users</td>
</tr>
<tr>
<td>High-level governance</td>
<td>Local and regional level</td>
</tr>
<tr>
<td>Inform local resource distribution</td>
<td>Support diffusion of innovations</td>
</tr>
<tr>
<td>Support diffusion of innovations</td>
<td>User driven</td>
</tr>
<tr>
<td>User driven,</td>
<td>Shaping research priorities</td>
</tr>
<tr>
<td>Evidence of unexpected uses</td>
<td></td>
</tr>
</tbody>
</table>
Interactive approaches to determine solutions, conceptual use to change beliefs or galvanize support, and reliance on relationships and networks are strongly evident in both cases and across the diverse contexts they represent (Table 23).

An emphasis on relationship building and engaging users in determining solutions are expressed as preferred organizational practices. In both cases, dissemination of data for conceptual use engages stakeholders in interactive approaches to determine local solutions. Both cases use dissemination approaches to raise awareness of a problem and to share key research findings that suggest promising directions. Both cases show extensive use of dedicated web pages and interactive digital mapping at different levels of aggregation. HELP’s research driven dissemination and communication is widely appreciated by knowledge users.

_The website. The neighbourhood reports. The way the information is presented and broken down is just excellent. It is invaluable. The level of detail and the way that the reports are organized. I also attend the annual HELP EXPO and that is also really useful._ (EDI 13)

### 5.3.2.1 Instrumental use

More instrumental intent was expected in the MDI case. In the MDI the intentional use of diffusion encourages schools and their partners to share innovative solutions that have been found to be actionable or successful. The MDI measures student well-being and the protective factors that have been shown to be associated with better outcomes on specific measures of well being. Direction for action that schools and their partners can take is therefore built in to the instrument. Social emotional education by schools and partners is discussed in published research as an actionable and evidence based way to improve student well being and academic outcomes. In comparison, the type of action recommended in research publications to improve EDI scores does not give such clear direction to service providers. The factors that research shows will make a difference are “largely out of our control”
we would have these conversations particularly around the EDI and it was like this... is great, it’s phenomenal insight... What do we do with it? How do we action it? How do I take this, which is an assessment - largely of the first five years of a child’s life... many factors...many inputs...largely out of our control. Kindergarten teachers... we...do this assessment...would get this information...would go wow...that’s interesting (MDI 7).

While users agreed that the MDI information is more actionable, the expected differences in the use of direct instrumental guidance were not seen. Even in the MDI case, interview participants continued to state a preference for interactive approaches to determining local action.

In contrast, and not expected based on case definitions, was the prescription of instrumental action in the EDI case. Prominent EDI research recommendations in publications and reports are quite directive, targeting leaders at the level of provincial governance. For example, recommendations repeatedly call for funding and infrastructure to provide a provincial system of universal childcare. Recommendations also call for parental leave to let parents spend supported time with their children in the most influential period of early life. Prescribing specific action at higher levels of governance levels appears to be a response to context but one not anticipated by case selection since case definitions overlooked the way that different levels were associated with different aspects of context within cases. Clear direction at high levels of governance represents the key conclusions of expert synthesis and responds to perceptions that brief and direct recommendations for policy networks are appropriate.

5.3.2.2 Use of diffusion

Greater use of diffusion in the MDI case was expected due to the stronger institutional infrastructure in education. The difference was not observed as anticipated. Case differentiation on the basis of a more fragmented service environment for EDI work was supported by data. However, recognizing weaknesses in service systems to act on EDI data, efforts to build and support networks for interaction and implementation have also built effective diffusion networks.
EDI networks, if diverse, are consistently used by motivated individuals and have proved resilient even to shifting employment and funding.

I was the executive director at the [organization] and we were in the midst of developing a whole bunch of childcare and family programs in the downtown core... my first contact with HELP ... in that role I also took initiative to create a local area services network... or planning table of service providers .... so before that role I was the executive director at [organization] ... and when I moved downtown this was a brand-new [organization](EDI 16)

EDI and MDI cases both rely on network members to “diffuse” ideas and innovations. Each relies on “champions” to extend the reach and influence of HELP research.

Differences between the cases were noted in relation to the type of knowledge being diffused. With MDI work, diffusion is encouraged as a means to promote specific practices within the education system and its partners. Sharing “success” is explicitly supported through forums and websites such as the “Discover MDI” website that promotes sharing of stories and practices.

Diffusion in EDI knowledge translation appears to remain focused on changing underpinning understandings: using knowledge with conceptual intent rather than sharing specific practices or stories of success. Information about the problem of poor and inequitable child development is widely shared as a way of engaging people in discussions of what can be done and bringing them together around the issue.

Although not being tested specifically, user-driven elements were noted to differ between cases. Members of the education system were active in shaping the knowledge production for their specific institutional context. “…the MDI survey itself was developed with them” (MDI 3). This involvement was noted as a strategy to increase the relevance of the knowledge produced. Government departments fund the EDI research, but while this makes them cost sharing partners, it seems that they were looking for specific kinds of solutions. The EDI research was not
designed to serve their priorities. In fact, it points most clearly to action they were not prepared to take. Capacity and motivation appear central to shaping the extensive action that has been taken at local levels. The primary recommendations from the EDI research continue to be relatively neglected.

**Participant:** we did engage in these regular interactions with the ministries in developing a framework that would respond to their questions.

**Interviewer:** What were their questions?

**Participant:** They were... they were very focused upon individual programs... so they wouldn’t necessarily focus on the whole child... which is what our work does...(EDI 6)

...the presumption that governments really liked at the senior levels was that hey ....some of these places are already bucking the trend without us having to make these system-level investments that your data suggests we need to be doing... and if only we could figure that out ....that’ll be way less expensive for us ....so let’s go do that... (EDI 2)

### 5.3.3 Anticipated differences: Process-focused approaches

In comparison with the exchange or transfer approaches reported above, anticipated differences in process focused work between EDI and MDI cases were consistently evident (see Table 24. The intersectoral and fragmented context of the EDI case was expected to lead to more emphasis on process-focused approaches to build intersectoral systems of services. This expectation was supported.

Differences between the cases align with the claim that process work is done in response to gaps in capacity in the service provision context.
Evidence of a problem is used in the EDI case to focus attention and galvanize action in two ways, first within established organizations, and secondly, where single organizations lack capacity for the type of action called for, to bring members of different organizations, services, and levels of governance together into larger intersectoral systems. The inter-organizational version of process-focused work has not previously been described as an element of knowledge translation. In the case study it aims to increase the capacity for collaborative work around the shared objective of improving outcomes for children. The EDI process focused work has consistently aimed to build, fund and maintain a new and more integrated and intersectoral system with distributed leadership.

The MDI process-focused work similarly acknowledges the potential for an intersectoral focus but there was much less evidence that this type of work is emphasized. Schools are active participants in networks formed and maintained through EDI work. Reports of process focused work in the MDI case were largely the organizational change variant, within the education system, encouraging schools to increase their focus on well being, and encouraging them to respond more consistently to evidence of gaps in protective factors that are within their control. The objective of expanding connections with community partners (particularly after school programs) was mentioned but several participants noted that schools remained the dominant

<table>
<thead>
<tr>
<th><strong>EDI Process focus approaches</strong></th>
<th><strong>MDI Process focus approaches</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity building across institutions</td>
<td>Capacity building centred in education</td>
</tr>
<tr>
<td>Initiate and support new networks</td>
<td>Focus network attention within schools</td>
</tr>
<tr>
<td>Increase collaborative planning across institutions</td>
<td>Engage students as partners</td>
</tr>
<tr>
<td>Capacity building within developing systems</td>
<td>Engage community partners</td>
</tr>
<tr>
<td>Data literacy</td>
<td></td>
</tr>
<tr>
<td>Focus network attention</td>
<td></td>
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</tbody>
</table>
organization in work with the MDI. The quotes in Table 25 reflect the different structures of the service provision contexts.

**Table 25 Sample quotes: process focused differences**

<table>
<thead>
<tr>
<th>Process focused comparisons</th>
<th>EDI</th>
<th>MDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service delivery level (across organizations versus focusing on work with a single organization)</td>
<td>so there’s always this idea that everything is very fragmented and what are we trying to build? So there are huge debates... and I only kind of got them from the childcare side because that’s where most of my research was, how... about how to create some better funded higher quality system ... early childhood education especially was very fragmented and unsystematic and unavailable to a lot of people. (EDI 1)</td>
<td>as the time goes on you can then kind of see this ripple effect of data being... once a school district is ...kind of okay we understand our staff, our staff understands we’re building this, and now we’re going to go to the community and say here’s what we’re doing. Here’s what this data shows us... what do you think? (MDI 2)</td>
</tr>
<tr>
<td>High level policy to support collaboration</td>
<td>we did continue to ...you know.... bring information to decision-makers ....I should add that to the list. We had meetings ... in particular with provincial officials .... at first in the Ministry for children and family development... then overtime... with the ministry for education as well as health. And we even contributed to there being inter-ministerial tables of high level bureaucrats (EDI 2)</td>
<td></td>
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</tbody>
</table>

Process oriented work to enhance organizational capacity was referenced with both EDI and MDI work. The following quote is from a school-based user of both EDI and MDI information.

*So I look at that... EDI and MDI ... it increases our system capacity. Without a deeper knowledge of the science that’s behind the data, we would engage as a system and individuals in a whole bunch of one-off activities without any coherence or connection. We would just do it. Well now we say... what is social and emotional development for kids? Well it’s this. And we say here are the dimensions, domains... these are components of it and let’s learn more about pro-social skills, let’s learn more about self regulation, optimism and perseverance and so on. And now we begin to know... oh I know what it means to be well in that sense... we’ve learned the difference between competencies and assets, we have learned that some can be taught and learned (MDI 7).*

In contrast with the MDI that has focused on work with schools, building intersectoral capacity has been a core focus of much EDI knowledge work. While some researchers have
decided to work at the local level where there are existing institutions to work with, others suggest that local work is likely to remain insufficient without higher level action to fund the policy action and investment that can address regional disparities and promote the universal services that the research recommends (see Table 26).

**Table 26 Process focused work insufficient without high-level support (EDI)**

<table>
<thead>
<tr>
<th>Concept</th>
<th>Sample quotes EDI template only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process work as an interim approach (EDI references only)</td>
<td>yes... we need to create change within the policy makers as well but that’s not totally disconnected from us... and if we are doing what we can... if we’re really activating our collective power... that gives us a better chance to create change ...so let’s concentrate, to begin with, on activating our collective power... knowing that even if we don’t influence policy at least we’re going to feel better. (EDI 5)</td>
</tr>
<tr>
<td>Local process work insufficient (EDI references only)</td>
<td>we focused peoples’ attention on very small geographic areas which actually had very little if any governance capacity to make systems level change and we encouraged people to indulge in the details of the EDI data which risk of distracting them from the fundamental punchline for the world of politics which was we had a vulnerability of about 30% and rising ...three times higher than what it needed to be.... and that in any knowledge translation world ....maybe should’ve been the message we kept pushing at. (EDI 2)</td>
</tr>
</tbody>
</table>

**5.3.4 Anticipated differences: Strategic focus**

Differences between the cases in the use of strategic approaches was anticipated because EDI publications recommend controversial public policy action and resource allocation while MDI recommendations do not rely so clearly on new funding or infrastructure as they aim to inform practices in existing education facilities and services.

A range of strategic approaches was evident in EDI knowledge translation in ways not seen at all in the MDI case. This observation is consistent with the claim that these approaches are used in contexts of intended use where polarization or lack of available resources present a barrier to action and the use of exchange or transfer approaches on their own, even where augmented by process-focused approaches have not proven sufficient.
...we learned ... that it was a lot more complicated ... over time ... that it was a lot more complicated ... than just going in and giving data and helping them to understand it. (EDI 3)

Table 27 Template comparison: Strategic focus

<table>
<thead>
<tr>
<th>EDI Strategic focused approaches</th>
<th>MDI Strategic Focused approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insider work with leadership</td>
<td>Insider work with leadership</td>
</tr>
<tr>
<td>local regional and provincial levels</td>
<td>local regional and provincial levels</td>
</tr>
<tr>
<td>Evidence used in argument</td>
<td>Appeals to academic authority</td>
</tr>
<tr>
<td>Strategic framing in argument</td>
<td>Evidence used in argument</td>
</tr>
<tr>
<td>Appeals to economic arguments</td>
<td></td>
</tr>
<tr>
<td>Appeals to values social justice and equity</td>
<td></td>
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<tr>
<td>Appeals to rights</td>
<td></td>
</tr>
<tr>
<td>Third party strategies to increase incentive to act</td>
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<tr>
<td>Advocacy and organizing</td>
<td></td>
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<tr>
<td>Publics, institutions</td>
<td></td>
</tr>
<tr>
<td>Appeals to academic authority as support</td>
<td></td>
</tr>
<tr>
<td>Political cover / support through public engagement</td>
<td></td>
</tr>
</tbody>
</table>

5.3.4.1 Insider persuasion

Both cases showed the use of the strategic approach of insider persuasion. In each case senior researchers have developed trusting relationships with influential members of policy networks and have participated in strategic dialogues about policy or resource issues and been influential in high level decision making. The category “insider persuasion” is included in strategic approaches because the strategy rests on more than just knowledge exchange or transfer. The person is relying on relationships and bringing their personal influence to bear in argument to win support or buy in for a specific purpose or established agenda.

...that was about convincing them that they needed to pay attention to early childhood development... what was going on in the province... and programs and services. (EDI 3)

Interview data emphasize that the researcher or an intermediary – beyond the research itself – is established as someone trustworthy and who connects with the potential user. The following examples in Table 28 below show the centrality of relationships in insider persuasion with both EDI and MDI.
Table 28 Similarity between cases: Insider persuasion

<table>
<thead>
<tr>
<th>Similar attributions of effectiveness</th>
<th>Sample quotes, EDI</th>
<th>Sample quotes, MDI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>I spent a lot of my time networking and trying to get through to people who I know are influential and spark connection and see to what degree they’re willing to climb on board with these things. It’s really key</em> (EDI 11)</td>
<td><em>...you have the new BC curriculum out and there’s a clear... there’s a clear shift there... and the MDI has played some role in that. I think it’s often... I think it’s mostly about the relationship between our Director and her expertise and her relationships across levels of government and in the field more broadly</em> (MDI 2)</td>
</tr>
<tr>
<td></td>
<td><em>I don’t think we could underestimate [name’s] incredible championing of it... if you like... um... you know he is a huge part of how it got absorbed into health authority contracts I mean accountability structures... and then all the way down because he was... he engaged regularly with provincial health officers and all the medical health officers... he presented to them on a number of occasions... about the importance of the early years</em> (EDI 4)</td>
<td><em>You really need that champion at the district leadership level, who at the time was [name] who has now done a ton of work with the ministry. She’s a real champion for everything SEL and well-being in the early and middle years... so that was a key ingredient and what she did to engage the board and also the community.</em> (MDI 1)</td>
</tr>
</tbody>
</table>

The use of knowledge in argument to support or justify an objective or commitment (rather than taking specific action in response to knowledge) was seen in both cases. The distinction between using evidence to inform and calling on evidence to support an argument is a subtle but meaningful one. For example, the important lever in argument may be that the authority of science can be called upon - rather than any specific findings:

*...we definitely need partnerships such as research institutions like UBC and their departments to put what we know and understand in our day-to-day lives and our work to be true... but we need we need it documented in away that our government and funding partners pay attention to...* (EDI 10)

At other times the distinction gets enmeshed with consideration of whether the argument appears to focus on advancing personal motives or on achieving better health. There can be considerable overlap. The use of argument in both cases was largely in support of appeals for funding. The EDI example in Table 29 below calls on evidence to support a costly action requiring new infrastructure consistent with the evidence is proposed.
Table 29 Differences in objectives using knowledge in argument.

<table>
<thead>
<tr>
<th>Sample quotes, EDI</th>
<th>Sample quotes, MDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using knowledge to support an argument for a desired action</td>
<td>As the evidence shows, it is time to develop a system of publicly funded, universal access to opportunities for development, learning and care for children from birth until school age (Hertzman, 2004, p.11).</td>
</tr>
<tr>
<td></td>
<td>to be able to pull off the website ... insert it into school plans ... into district plans ... using numbers for applying for grants ...(MDI 9)</td>
</tr>
</tbody>
</table>

5.3.4.2 Third party approaches

The use of third party strategic approaches was only seen in the EDI case. The EDI case calls for substantial sustained funding and new infrastructure in ways that represent a greater challenge to existing (status quo) funding allocations and power structures.

Table 30 Differences in resource implications between cases

<table>
<thead>
<tr>
<th>Concept</th>
<th>EDI</th>
<th>MDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making a case for public policy action with significant resource implications</td>
<td>...I think the genesis [of the EDI] in some ways was the epidemiological aspect ...and showing that vulnerability at the policy level. To show the census of how children are doing ... with the idea that you would move to action by making policy changes. And seeing that the variability has to do with socio economic status and the social status of health ... (MDI 4)</td>
<td>...this sort of line between .....advocacy arm of HELP and the data arm of HELP and I think actually.... in the MDI report ....at least it used to say something about the context of child development and all of these things are important ...but I think it would just.... sort of it wouldn’t be the right ...maybe as appropriate to write in the data report ....you should be spending your money this way. (MDI 3)</td>
</tr>
</tbody>
</table>

The idea that it “wouldn’t be right” in the MDI quote above suggests that resource allocation advice is not prominent in MDI work. In contrast, EDI publications and reports provide hundreds of statements calling for large new investment in early childhood. The absence of third party approaches in MDI work appears to reflect the more locally actionable knowledge produced with the MDI. The EDI inherently informs a different kind of intervention. While there is wide agreement about the need for new resource allocation, even within EDI knowledge
translation there is evidence that arguing and gathering support for this kind of action has been contentious among HELP researchers.

…it was a theme that came up over and over…. And one that probably is still discussed… is that we walk this fine line as a research center we can’t be seen as advocates…(EDI 3)

While some researchers want to keep their distance from advocacy-oriented work, a number of intermediaries involved in HELP knowledge translation see advocacy-based approaches as effective and necessary (See Table 31 below).

**Table 31 Reference to third party approaches (only in the EDI case)**

<table>
<thead>
<tr>
<th>Concept</th>
<th>Sample quotes (EDI case only)</th>
</tr>
</thead>
</table>
| Reported need for strategic approaches | **Participant:** if it wasn’t for the work that we are doing I don’t think that childcare would be on the agenda … I don’t think that the government would be devoting resources to …  
**Interviewer:** Can I ask you to be as specific as possible about how you think this has come about?  
**Participant:** We have used highly credible research evidence to come up with a clear and workable solution and we have built a movement … and the political space to bring the issue up in policy with the support of many sectors and organizations. For example… It was very important that HELP endorsed the 10 a day plan. (EDI 13) |
| Need for third party approaches        | it has required HELP to reach out ….not just be a passive receptacle where people can come and get if they want… that has required an explicit strategy of knowledge translation … so I think it needs to be encouraged… and supported … and I think HELP deserves a lot of credit for some of the policy … really important policy shifts that we are seeing … and also for the kind of social consensus that we need to build in order to make big changes in society. (EDI 18)  
the mechanism that we have is if the majority is convinced by a certain argument and puts their foot down things will happen. … … if we live in a democratic society or if you believe in democratic processes … especially if you’re saying it’s not happening through the few that hold power. (EDI 7) |
| Concept of political cover             | So when you have an organization who are not typically associated with this type of advocacy becoming advocates I think that’s very powerful… it gives politicians the cover they need to perhaps make some decisions which are challenging. (EDI 18)  
politicians need political cover to make courageous decisions. And organizations …especially with large memberships… can sometimes provide that …in the way that the elite intellectual …going to another elite decision maker can’t quite do. (EDI 2) |
<table>
<thead>
<tr>
<th>Concept (continued)</th>
<th>Sample quotes (EDI case only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public support as a lever</td>
<td><em>the challenge here... is how do we get the messaging.... really concise powerful messaging.... out to the public so the public will support what the government says it wants to do but isn’t doing.</em> (EDI 10)</td>
</tr>
<tr>
<td></td>
<td><em>If you don’t kind of like educate the general populace about why these issues are even important then you’re missing out on a critical aspect of how to change things for communities.</em> (EDI 1)</td>
</tr>
<tr>
<td></td>
<td><em>[Minister] himself ...in our meetings ...has said ...you know I sure wish you guys could get ...or develop a parade that I could get out in front of</em> (EDI 11)</td>
</tr>
</tbody>
</table>

Overall, EDI participants appeared to be persuaded that strategic work including advocacy is a key to the use of some recommendations even if there was disagreement about where the boundaries of a researcher’s role should be drawn. It is important to note that irrespective of discussions about the role of researchers in third party approaches, these approaches appear in some but not other circumstances. Whether driven by researchers or intermediaries, a key indicator for the need of these approaches appears to be a perception that competing interests (polarization) are standing in the way of action to improve population health in settings where resistance is empowered by status quo structures and power relations.

Framing is a separate strategic approach discussed in relation to policy making at HELP. As discussed in the literature review, different framings can contribute to deemphasizing the lines of division that maintain polarization. Early EDI work often emphasized social justice framings and the language of rights while later framings focus more on economic arguments for investment (see Table 32). While social justice frames appear to be motivational for some groups, they have also been noted as ineffective where polarization around inequities is ideological. The example of rights framing in relation to the MDI is included here as an isolated example. It is used to make a case for valuing the data that children contribute in the MDI instrument.
Table 32 Uses of rights or economic frames

<table>
<thead>
<tr>
<th>Framing examples</th>
<th>EDI</th>
<th>MDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social justice framing including human rights</td>
<td>I remember the first time I met him he was speaking to medical students ... and so the whole idea of social determinants of health ... it’s still for most people ... so people are still trying to understand it ... but that was what he was really on about ... and persistent about ... and increasingly articulate about. (MDI 10)</td>
<td>this idea of kids voices ... I think that’s the other thing that resonated with people ... the idea that it was what it was about children’s voices learning from them ... aligning with the UN convention on the Rights of the Child saying ... this is what kids say ... (MDI 1)</td>
</tr>
<tr>
<td>Moving toward Economic framings</td>
<td>I’m not sure how much the rights angle works. I know we keep saying it but I’m not sure how much traction that gets. I mean I think that the economic and health data case probably carries more weight generally than to argue on a rights basis. (EDI 9)</td>
<td></td>
</tr>
<tr>
<td>Emphasis on economic framings</td>
<td>... we ran a number of public campaigns, and the purpose of those public campaigns really was to get information out ... flowing from the Anderson Fairholm report .... so the boost in GDP, the job generation, you know things like the reduction in child poverty, increases in working rates for single mothers, you know... so those things ... to really shine a positive light on the social impact but also the economic impact. (EDI 18).</td>
<td></td>
</tr>
</tbody>
</table>

Overall, the use of strategic approaches aligns with predictions based on the Contandriopoulos et al., (2010) framework. The current research adds distinctions within strategic approaches and notes how the use of argument in one-on-one interaction differs from the use of knowledge in third party approaches. The recognition of polarization in the context of use and of power as a source of resistance reflects Weiss’ (1979) category of knowledge that challenges status quo interests. By recognizing strategic approaches as relevant to knowledge translation, and perhaps as a necessary component of mobilizing healthy public policy action where polarization is present, this chapter answers some of the call for more attention to political science theory and the policy development process.
5.4 Results Summary

The template developed in response to the first research question provided a hierarchical structure and presented a range of approaches used at HELP. This template is available for consideration by knowledge translation practitioners and may apply beyond the case study. The classification hierarchy suggested that the approaches could be classified under three high level headings: exchange or transfer, process focus, and strategic focus. In examining how these approaches were used in different knowledge-context configurations (as a response to the second research question) results showed that the approaches outlined could be used sequentially or simultaneously. Theories of change were shown to incorporate approaches in ways that appeared to be related to context specific perceptions about what was needed to advance the use of the particular knowledge. Approaches appeared to be added to a foundation of exchange and transfer as perceived necessary to meet identified challenges. Process focused elements were added where required to address circumstances of limited capacity and strategic focused approaches were added to address resistance, a lack of motivation, or absence of political will. Process-focused approaches recruit available resources to increase the capacity of systems to act in coordinated and focused ways. Strategic focused approaches are called on where there is a need to make a case for additional funding, new infrastructure or to overcome resistance from groups or factions willing to resist action that might disrupt status quo power structures.

The comparative element of the study that responded to the third research question tested claims about how different forms of exchange or transfer, process focused and strategic approaches could be anticipated in cases selected to differ in characteristics of knowledge and context.
The expectation that differences in the structure of the service environment would be reflected in different uses of exchange or transfer approaches was not seen in ways anticipated. Direction for instrumental use of research knowledge was not clearly differentiated by case as predicted. Both cases prefer interactive approaches at the service delivery level. Only the EDI case directly promoted the instrumental use of knowledge and only for policy and resource allocation.

The MDI case was expected to make greater use of diffusion approaches due to its more stable and cohesive network structure. There was some evidence that diffusion of user generated innovation was more intentionally promoted in MDI work and this is consistent with a view that replication as institutional practice requires a stable institution. However, EDI work also uses diffusion and has established large and enduring informal networks that bridge institutions and even circumstances of employment.

The claim that process use would be more prevalent in the EDI case - because the service environment was more diffuse and fragmented - was supported by data. This expectation was emergent and is included in the results part because preliminary work had suggested that process focused work was prioritized in HELP knowledge translation. It was not part of the original Contandriopoulos et al., (2010) framework.

The Contandriopoulos et al. (2010) framework emphasized the influence of polarization on knowledge translation. Based on case differences, strategic use was anticipated in the EDI case. Instrumental use and interactive use were expected to be less productive where there was division or resistance. As a result, political or argumentative uses of knowledge were expected. This finding was supported by data. Strategic uses were called on and rationalized on the grounds that exchange or transfer approaches could not be effective in the face of competition or
while established interests were effectively resisting action. The following discussion chapter interprets these results and considers how they contribute to knowledge about knowledge translation.
Chapter 6 Discussion

6.1 Outline

This study set out to investigate context contingent knowledge translation in a case study in order to examine claims that the use of identifiable approaches to facilitating knowledge translation may be more or less called for in different circumstances of exchange and potential use. Circumstances for exchange and use were operationalized in this study as knowledge-context configurations. The study used inductive analysis of interview and documentary data to look at why some approaches were seen in the case study as relevant in only some circumstances. It finished with a comparison between two cases of knowledge translation that were selected on the basis of different knowledge products that HELP produce (EDI and MDI) and that differ in terms of their implications for action and contexts for their use.

The discussion is structured to parallel the results. It begins by summarizing the contribution the study makes to knowledge. Results for each of the case study research questions are then discussed in turn to elaborate on how each reflects on potential guidance for practitioners and on the published literature.

6.2 Summary of contributions to knowledge

This study operationalizes three domains of knowledge translation that are widely recognized in the knowledge translation literature: knowledge, context, and approaches taken to facilitate uptake (Kitson, Harvey, & McCormack, 1998). While the three terms knowledge context and facilitation are widely used in multiple fields of inquiry, the operationalization proposed here is for the explicit purpose of considering these domains in knowledge translation.

To operationalize facilitation, a list of approaches was drawn from the literature. This list was refined and hierarchically arranged through template analysis of case study data. While the
described approaches are not new themselves, assembling them through analysis into a single hierarchically structured menu of available options makes a novel contribution to knowledge.

Knowledge and context were also operationalized for this study and it became clear that by looking at knowledge and context together it becomes apparent that knowledge products fit more or less comfortably in contexts for use in ways that imply different categories of challenge for knowledge translation practitioners. Three types of challenge were identified: promoting understanding, increasing capacity for knowledge use, and enhancing motivation to act. This research proposes that each of these challenges must be met to the extent that they are present in the circumstances of exchange and use before knowledge translation should expect evidence informed action. This research makes its primary contribution by identifying specific approaches that are available to address these conceptually discrete challenges as aspects of mobilizing knowledge.

Knowledge must be shared and/or developed through communication to the point that users understand what to do, how to do it, and what outcomes they can expect. This study suggests that overcoming the challenges of promoting understanding and providing direction can be achieved through exchange or transfer approaches to knowledge translation. These approaches have been well described in the communications and knowledge translation literatures.

A second level challenge emerges where the capacity of targeted users to do what the evidence suggests needs to be done is lacking. Capacity challenges can range from lack of time to learn a new procedure to a total absence of an institution or infrastructure to implement the recommendations. More evidence and better knowledge transfer does not solve this type of problem. For knowledge to have a population health impact, it must be possible to implement the
knowledge, even if that means directing effort toward changing the context of exchange and use as an intervening step.

A third type of challenge is to ensure sufficient motivation. Addressing challenges of motivation requires strategic attention to problem structuring, user values, and understanding what is behind resistance to change. If resistance is based on faulty assumptions or errant underpinning knowledge, providing information to change how problems are understood is a reasonable first step (Flyn, Nyhan & Reifler, 2015). However, and aligning with findings in the current study, there is ample evidence that providing information may not be enough (Cacciatore et al, 2015, Williams, 2020). Some research suggests that in polarized circumstances, confronting errant assumptions with evidence may even be counterproductive (Nyhan, Reifler, & Ubel, 2013; Thorson, 2015) Williams, (2020) points out how holding even implausible or unfounded beliefs can be an important part of establishing membership in groups or factions.

Strategic approaches recognize that decision makers and policy networks are influenced by multiple accountabilities. These approaches use political understandings to engage with building incentives to act when the potential to improve population health is not sufficiently motivating to those with the capacity to act. In these circumstances even excellent evidence will not lead to effective action.

By recognizing the separate challenges of building understanding, capacity or motivation in knowledge translation situations, it becomes possible to consider how theories of change can be constructed to include approaches that give knowledge translation a reasonable chance of success in addressing these separate challenges. This research suggests that exchange or transfer approaches form a foundation or base and that process focused and strategic approaches can be added as necessary to advance the prospects for evidence-informed population health action.
Process-focused approaches are used in the case study organization to modify systems and to recruit available resources into more effective and coordinated service delivery. This is an expansion of how the term process focus is used in evaluation and it represents a step not usually considered in knowledge translation models. Using process-focused approaches as a means of creating new systems for intervention (as reported here) has not previously been documented as a legitimate component of knowledge translation.

Challenges of motivation or political will are addressed in the case study by strategic approaches very similar to those outlined in theories of policy development. To use strategic approaches responsibly, it becomes important to recognize that when moving beyond existing institutions, the need to consider priorities and options from a societal perspective brings knowledge translation into the political sphere. Even where research suggests that population health interventions will lead to substantial overall increases in population health, researchers have no particular right to dictate which societal values should hold sway when deciding whose interests to prioritize. However, using knowledge to inform public debate in ways that inspires publics or coalitions to form and exercise their legitimate political power appears to be being done ethically in the basis of evidence in the case study. Accumulating evidence, including that from this study, suggests that without engaging in strategic approaches, the vast evidence about harmful social determinates is unlikely to be used effectively where it challenges status quo interests or power structures and the institutions that have developed around them in society.

This study did not focus specifically on any of the dimensions of status and political power that sociological study has shown can divide and segregate populations. There is ample evidence that power and status differentials represented by the status quo (as used by Weiss, 1979) fall across lines of gender, class, ideology, sexual preference, and ethnicity in ways that
can be readily observed. A full commentary on the various intersectionalities that these different dimensions of discrimination allow is beyond this study. However, promoting a means of recognizing the importance of discriminations and the inequities related to them is central to this study. In the case study, the analysis of circumstances through each lens recognizes dimensions of difference as highly relevant when examining the nature of challenges to exchange and transfer, to capacity, and particularly in relation to strategic approaches.

An Aboriginal Steering Committee has been established at HELP, to contribute to better understanding across epistemological differences and in recognition that the inequities HELP data describe often fall quite clearly across lines of ethnic discrimination. Similarly, gender is recognized as highly salient to the conditions in which children grow up. The low priority and resourcing of childcare (for example) can be seen as a direct reflection of the marginalized position of women in society. Gender intersects with class and ethnicity in ways that make it unreasonable to expect all families (or mothers) to be equally capable of carrying full responsibility for children’s healthy development in their early years. The capacity for action in service networks also reflects historical discriminations and inequities. The lenses proposed in this study encourage practitioners to looking closely at inequities that persist and that are often sustained or even exacerbated by institutions and bureaucracies. For example, the type of power analysis required for strategic work as described in this study can orient practitioners to the potential for dominant individuals and groups – often white and male – to resist action that could contribute to population health.

The study was designed to contribute to generalizable theory about context-informed knowledge translation. It builds on a framework proposed by Contandriopoulos et al. (2010). In examining data that reflect on Contandriopoulos et al.’s (2010) framework, this dissertation
supports the framework in relation to the association between polarization in contexts of use and strategic or political approaches. However, while Contandriopoulos et al., (2010) recognized political use as described by Weiss (1979), they did not elaborate on forms that “political” approaches might take beyond direct argument. This study takes the extra step to describe variations and strategic options that were evident in the case study.

Different forms of strategic approach elaborate on what Weiss called political uses of evidence (1979). Argumentative and framing approaches were sometimes used in congenial one-to-one interaction described in this study under a heading of “insider persuasion, reflecting relationship-centred interaction as discussed by Haynes et al. (2011). Strategic approaches in the case study were also shown to build on the intentional promotion of conceptual uses of knowledge in agenda setting (as described by Baumgartner & Jones, 2002; Kingdon, 1995; McCombs, 2005) and in issue framing (as described by Baumgartner & Jones; Tseng, 2014; Tversky & Kahneman, 1981).

Several participants (including decision makers themselves) noted that decision makers might be persuaded (by insider persuasion or the evidence itself) that a problem is worthy of attention and that action within their roles would contribute to population health. These participants describe how even in these circumstances, action can be blocked where these apparently powerful actors do not feel empowered to act due to competing pressures they experience in their roles. Third party strategies were described as a means of offering “political cover” to provide decision makers with social and political license to act against the interests of some influential constituents. The idea of building support through work with third parties can make it possible for formal decision makers to take action while retaining enough political support to survive in their roles. This is another idea not highlighted in the prominent knowledge
translation literature. Reports from researchers, intermediaries, consultants, and policy makers in the case study describe the rationale for these approaches, and through their attributions of success, provide some empirical support for their use.

Other reported strategies use data and evidence as ammunition for more aggressive stances. HELP provides information to third parties or intermediaries who are willing to engage in processes of political action and put pressure on policy makers – much as described by Jenkins Smith et al. (2014) or de Leeuw, Clavier & Breton (2014). Again the starting point is the dissemination and diffusion of data and ideas to change discourses and underpinning understandings among people with the power to influence decision makers. Problem focused and issue based conceptual dissemination and diffusion support the process focused work that builds and sustains the alliances needed for this type of strategic influence. A sequence of activities along these lines was clearly described by Kershaw et al. (2017).

Contandriopoulos et al. (2010) chose not to examine the use of conceptual approaches in their review because their (literature review) data did not support investigation of practitioner intent. Conceptual exchange or transfer approaches were reported to be used extensively and intentionally in the case study as a foundational component of theories of change that then engage interactive approaches to develop solutions or use ideas as a focal point to energize capacity building and to inspire political engagement to influence motivation for action. This case study offers evidence to develop the Contandriopoulos et al. (2010) framework by explicitly recognizing the intentional conceptual use of data and ideas.

In the past, conceptual use has been recognized but often treated as a side effect with its gradual and indirect contribution apparently not deemed as worthy of attention in efforts to encourage or advance instrumental use. Although well established in the political science
literature, only recently has its intentional use in problem framing, agenda setting, and supporting issue-based networks and coalitions begun to be documented in complex and more politically aware knowledge translation initiatives (e.g. Kershaw et al., 2017).

Data in the case study suggest that the Contandriopoulos et al. (2010) framework may also benefit from consideration of process-focused approaches (Patton, 1998; 2007) and the conditions in which they are required. The social structuring dimension of context (Contandriopoulos et al., 2010) can be analyzed for the capacity to share and implement knowledge effectively in a general sense. The case study suggests that where capacity for implementation of specific knowledge is lacking, an extra step along a longer pathway to use may be necessary to provide the type of coordinated delivery of multiple or intersectoral services in ways that research shows can make a difference. In the case study, the implementation of single or isolated programs was generally reported as unsuccessful in modifying population level outcomes.

Participants note that no single institution has the capacity to reach and support families and infants in the universal ways that their research suggests would improve population health. In the case study, approaches are added as they are seen as needed in more or less complex theories of change that recognize the challenges for the use of specific knowledge in specific contexts. Figure 2 (on page 136) shows in a model how exchange or transfer approaches form a foundation and how extra components can be added as challenges are met that require additional approaches.

Recognizing the potential for strategies to improve alignment by modifying context in contrast with the more frequently discussed modification and selection of knowledge for specific contexts allows a new perspective. It suggests an important decision point for those aiming to
mobilize population health knowledge. Practitioners can – and perhaps should – explicitly consider the extent to which existing contexts should be accepted as a limiting constraint to possible action. This could be based at least in part on assessment of the importance of specific knowledge to population health. Demonstrating action that does not produce results does not seem much of a knowledge translation achievement. Despite being a more ambitious project, some knowledge may warrant efforts to make intended use possible by using process focused or strategic approaches to modify contexts. As an example in this case study, participants reflecting on the need for a universal system of childcare recognized that there was no existing system and that they needed to use the knowledge to draw people and together (EDI 1). Another participant recognized that the funding decisions needed to support a universal system could only come from political leadership (EDI 5). Neither of these could be advanced with acceptance of existing institutions and funding as limits of feasibility and knowledge translation ambition.

Until recently, there has been minimal attention in the knowledge translation literature to the potential for knowledge to be used ethically to build implementation capacity or to change the political will or motivation for action through public engagement or deliberate engagement of allies. This case study suggests that the degree to which status quo and existing institutions are accepted as fixed elements of context will determine whether process focused and strategic approaches will be seen as relevant. While incremental and transformational change are both potential objectives in knowledge translation, case study evidence suggests that the decision about what status quo constraints to accept may be critical in determining what approaches are included in knowledge translation and the extent to which population health evidence will lead to effective action.
6.2.1 Building theories of change

Qualitative analysis in the current study led to tentative propositions that provide pragmatic guidance for knowledge translation practitioners that (if supported by further research) may be generalizable at the level of principles or heuristics. This study proposes that knowledge translation challenges can be summarized in three categories: knowledge gap, capacity gap and motivation gap. The study proposes that each of these challenges correspond with one of three categories of approach: exchange or transfer, process focused, and strategic focus. The implications are straightforward. While informing and ensuring understanding will always be an important part of knowledge translation, process focused approaches can improve the capacity for implementation and if motivation is a barrier, strategic approaches offer options that may be used effectively. How these approaches will be best applied requires attention to the circumstances in order to consider how context relevant use of these approaches will be combined in theories of change.

The six theories gleaned from inductive analysis are offered for practitioners as a contribution to the field. These theories are described in more detail below. They provide rationales for incorporating approaches and they demonstrate how some approaches are selectively used to address context specific challenges. They also illustrate how approaches can be combined to meet challenges identified by considering knowledge and context in relation to one another. These six theories of change may prove to be generalizable although the justification to infer generalizability is not as strong as the case for generalizability of the approaches that these theories represent and incorporate. The categories of approach were developed from previous literature and are supported by new data in this study.
This study supports a view that some aspects of population health are inherently political (Rudolph et al., 2013; Sundin et al., 2019). Ultimately, many decisions affecting population health will continue to be made on the basis of societal preferences or the influence of powerful interest groups and ideological alliances (Hawe, 2015; Kershaw et al., 2017; Raphael, 2015; Stone 2012). This dissertation supports a view that if public health evidence is to be effective in challenging structural causes of ill health, it may be helpful to realistically identify the challenges that will not be overcome by using only exchange or transfer approaches. In these circumstances, considering a full range of available facilitation approaches and how each might be ethically used to address identifiable challenges may prove valuable.

The following section considers each research question in turn, elaborating on how results reflect on existing literature and how they may be informative to knowledge translation practice.

6.3 Discussion: Research question 1.

The first research question provided a foundation for the exploration of context-informed knowledge translation by developing a hierarchically structured list of knowledge translation approaches arranged under three high-level categories. Approaches that were discussed in the literature review as components of pathways to action were evident in the case study data. By working with data, the full range of approaches were arranged into a template that represents a hierarchical system of classification with three high-level categories organized around what each approach is aiming to achieve.

By bringing these approaches together in a menu of conceptually distinct approaches, the template provides a foundation for this study. It may also have value for others who may be considering their options for knowledge translation in challenging circumstances. The template
can be considered as a menu and it offers a new way of thinking about knowledge translation by recognizing that different approaches are designed to achieve specific distinct objectives with an ultimate objective of ensuring that knowledge reaches people who are both willing and able to take optimal evidence-informed action.

The categories and their arrangement are intended to be analytically valuable. They are not presented as mutually exclusive choices for those engaged in knowledge translation as approaches may build on each other in multiple ways. Exchange or transfer strategies are well represented in the knowledge translation literature, the heading for process-focused approaches originated in the evaluation literature, and strategic focused approaches are most clearly articulated in political science and policy theory. While the classification system did not add any entirely new categories, the template offers a single menu of options more comprehensive than has been previously published. The hierarchical arrangement illustrates how approaches can be combined to build on one another since each approach is clear about what it aims to achieve on a pathway to effective use of knowledge. The study supports a proposition that approaches can be combined by knowledge translation practitioners in various ways to address challenges and opportunities in contexts of potential use.

6.3.1 Uses of exchange or transfer approaches

Exchange or transfer approaches focus on the communication of information to individuals, organizations or policy networks at different levels of governance. In the case study there was limited emphasis on exchange or transfer for instrumental use and data suggest that dissemination and diffusion with the intent of conceptual use may warrant greater attention in the knowledge translation literature as foundational to more complex pathways to change.
The distinction between approaches that aim for instrumental use and those that aim for conceptual use has been discussed in the literature over time (Carden, 2009; Davies, Nutley & Walter, 2008; Nutley et al., 2003; 2007; 2009; Schwandt; 2012; Weiss, 1979). Despite this, the conceptual element of exchange or transfer is often overlooked in the knowledge translation literature. Even in the review that was an important foundation for this study, Contandriopoulos et al. (2010) chose not to focus on conceptual use: their data did not provide information about how practitioners were thinking about conceptual use and they noted that it is difficult to track how conceptual use becomes action that actually makes a difference to practice or health. Tseng (2012) notes that there has been little guidance about how this aspect of exchange can be used toward intervention that will make a difference while later work suggests that working to forge common ground is a worthy endeavor (Tseng, 2014).

In analyzing data from the case study, considerable emphasis is placed on considering how conceptual approaches fit as a component part within several theories of change. Conceptual use was reported in the case study as an intentional first step toward recognizing and drawing attention to a preventable problem and building greater capacity for interactive exchange and collective action, in some cases, political action. Changing how people think about issues is recognized as integral to knowledge translation in the case study, as a stand alone approach in some circumstances, but more often, as a step along a less direct pathway to “on the ground” action.

Another approach that has drifted in and out of focus in the knowledge translation literature is the use of social networks for information flow (Greenhalgh et al., 2004; Green et al., 2009). In the case study, knowledge translation relies heavily on both formal and informal networks to extend the reach of exchange or transfer approaches through diffusion. The
importance of “early adopters” and “opinion leaders” (Rogers, 2003) was noted with people performing these roles referred to by interview participants as “champions” and intentionally identified and nurtured as allies.

The literature review for this study concluded that the knowledge translation literature primarily emphasizes approaches that seek to promote action in existing organizations or institutions: providing information to help organizations do what they do more effectively. This single organization focus is compatible with recommendations in the knowledge translation literature to promote user driven or interactive approaches. These approaches involve potential users in generating solutions that are possible and feasible to implement within existing institutional infrastructure, levels of authority, existing mandates, and available resources (Boswell & Smith, 2017; Fafard & Hoffman, 2020; Hess, 2009; Kislov, Hodgson, & Boaden, 2016; Tseng, 2014). In the case study, interactive and user driven approaches were strongly evident, mapping easily onto descriptions of interactive knowledge translation and practices of co-production as described in the literature (e.g. Gagliardi et al., 2016; Harvey & Kitson, 2016; Kitson and Bisby 2008; Kothari & Wathen, 2013; Rycroft-Malone, 2004; van de Ven & Johnson, 2006).

Experience in the case study showed that when users were involved in choosing what to do in response to evidence of a problem that they saw as unacceptable, the evidence inspired creativity and innovation and led to considerable local action within existing capacities, values, and mandates (Mort, 2004). Disturbingly though, over the period of time when Mort (2004) documented hundreds of examples of action inspired by HELP evidence, the overall trend in developmental outcomes did not show improvement (Hertzman, & Siddiqi, 2013).
The connection between population health outcomes and the effectiveness of individual programs in the case study cannot be interpreted to mean that the programs did not benefit some children. People at HELP have argued that without all of the local action inspired by data, children’s developmental health could have been harmed more due to structural changes in society. This buffer hypothesis may well be true. The key point for population health knowledge translation is that interactive and user driven approaches led to action that was constrained by organizational capacity to the extent that it missed core components of what the research suggested was needed to be effective. Recall that published work showed an overwhelming emphasis on the need for high-level investment in universal programs and intersectoral and inter-organizational collaboration; these recommendations are beyond the capacity of any program in any single organization. For a summary of prominent messages in published work see Table 37 in Appendix H.

The experience described above suggests that where potential action is limited to work within the capacity and motivation of existing organizations or institutions, population health knowledge can be stripped of its potential to promote structural change or to challenge the status quo. The potential negative consequences of letting users direct knowledge production or to selectively emphasize knowledge that fits their interests, priorities or capacities have been explored previously (Boswell & Smith, 2017; Oliver et al., 2019; Smith & Stewart, 2017). The suggestion being put forward here is that if existing organizations and structural arrangements are accepted as a starting point in knowledge translation, irrespective of how well potential users understand the connection between health and its structural and social determinants, there should be no expectation of effective action by organizations to address this aspect at its root causes; action to do so is beyond their capacity and their mandate. Where population-level action
warrants translation, it may be necessary to intentionally include elements that address barriers of
capacity, the limitations of mandates, and the motivation of powerful agents of change. Further
research is needed to better understand both the risks and the potential of using the process
focused and strategic approaches as discussed in this research.

Knowledge translation that leads to action but not measurable improvement is an area
that warrants further focused study. Evaluations show that many interventions are ineffective and
in many cases this may be because they do not address fundamental issues (Rychetnik et al.,
2002). In population health, recommendations often call for action at high levels of governance
to address underlying causes (Hawe, 2015). Where public policy or new resource allocation are
primary recommendations of research, prioritizing interactive work with existing service
organizations without also working at higher and more politically charged levels may lead to
feasible but perhaps ineffective action. Recall that one EDI respondent noted:

So obviously you have to think at some point about the relationship between
communities and governments and policy makers right but it got too complicated too
quickly. So right now we’re all imagining ourselves as living in this little glass dome
that’s going to be our system for now because it’s all we can take on (EDI 5).

This quote points to how knowledge workers can be resigned to promoting local action
even where research calls for universal programs and where the effectiveness of local action is
constrained by resource and infrastructure issues that are beyond the capacity of local service
providers to change. Greenhalgh and Fahy (2015) showed that many knowledge translation
studies are content to demonstrate action without also demonstrating the effectiveness of action
taken. If the intent is to improve population health, health impacts of knowledge translation at a
population level appear to be better indicators of knowledge translation success. Where local
action is not producing results, more complex knowledge translation may be needed.
The case study shows enthusiasm for actionable knowledge and suggested that it is more readily taken up by existing service organizations. If researchers and knowledge translation practitioners can be influenced to prioritize usable knowledge as Boswell and Smith (2017) suggest can happen, the question arises about whose responsibility it is to advance uses of population health knowledge that challenge existing structures and their priorities. Who should take on the challenge of mobilizing population health evidence where there is no organization positioned to use it effectively or where action is resisted by interest groups or status quo power structures? While this study cannot answer this question, it invites knowledge practitioners to engage with the issue.

**6.3.2 Uses of process-focused approaches**

Process-focused approaches that were observed in the case study represent an extension of how the term is used in the evaluation literature by Patton, (1998; 2007) who focuses on its value in building capacity in organizations. This organizational focus is paralleled in the knowledge translation literature where building capacity focuses on education or training to make organization members better able to understand, access, share and apply knowledge (Harvey et al. 2015; Hawkes et al., 2016). Neither of the previously described applications of process focused work attends to the ambitious project of changing the way that knowledge can influence how work is shared across organizations nor do they refer to engaging and recruiting new capacities and resources for collaborative work or partnerships. The case study data make it explicitly clear that practitioners use knowledge to focus attention on issues and subsequently use the attention they attract to propose and support new ways of working and interacting. This approach is used at HELP with an explicit aim to optimize the use of resources and to build systems with greater capacity for coordinated and intersectoral work.
By building and orienting systems around knowledge, process focused work aims to intentionally modify contexts for the purposes of knowledge use. This aspect of knowledge translation may be a vital part of seeing population health evidence used effectively. Rudolph et al., (2013) note that population health lacks an established system for implementation of research recommendations comparable to that available in healthcare. The struggle to build and fund population health infrastructure has been a consistent thread through HELP research publications in relation to early childhood. Similar challenges have been observed more widely (Greer et al., 2017; Hawe, 2015; Hoffman et al., 2019).

Previous research calls for investigation of multi level capacity development as a component of knowledge mobilization (e.g. Lapaige, 2010; Kislov et al., 2014; Schneider & Blythe, 2017). Results from this case study demonstrate a valuable connection between exchange or transfer approaches, particularly conceptual work, and process work to build system capacity. Seaton et al., (2018) conducted a systematic review and identified a list of factors associated with effective collaboration. These factors appear to be very similar to the targets for process work in the case study. They include trust, clear communication, deep engagement of members, leadership, and a shared vision.

Holmes et al., (2016) observe that a strong focus on changing a system as an objective can undermine the sense of shared vision and purpose that might be motivating members to make a system function. In the case study, the system-change work is built around the knowledge itself. A vision that involves using the knowledge more effectively is kept central to the system change work.

The potentially pivotal role of knowledge as a way of bringing people together as a necessary step to enable implementation has been discussed previously. For example, Brownson
et al. (2017) investigated the use of knowledge to build an interagency network as a necessary step toward action. This study supports this “process focused” use of knowledge and suggests that process work can help pave pathways to evidence-informed population health action.

Many of the applications of process work reported in the case study require minimal disruption to existing budgets – making feasibility part of the appeal of these approaches. However, relying on better use of existing resources assumes that sufficient resources are in fact available. In the case study, data show more than ten-fold disparities in developmental outcomes of children between regions. Regions with poor developmental outcomes are often the same ones where workforces themselves are struggling to cope. One interview participant reported that the limited funding for coordination was directed toward regions with higher capacity since the prospect of satisfactory outcomes through organizing meager resources where services were already stretched or struggling was judged as too low to be worth the expenditure. If population health knowledge translation is to address regional inequities, local process-focused work may not build sufficient capacity without external support or resourcing. Effective action may depend on mounting arguments and persuading people with the power to act that investing in using the knowledge in ways that are recommended in published research will provide rewards that they value.

### 6.3.3 Uses of strategic focused approaches

The heading of strategic focused was developed in the case study for approaches that sought to appeal, persuade, or apply pressure to motivate those who have the power to advance resource allocation or public policy. This heading evolved from Weiss’ (1979) description of political use in recognition that while the intent to persuade was always present, the means of
doing so was not always limited to providing information and engaging in argument with those who have the power to finalize decisions.

The classification system presented in this study divides strategic approaches into two primary branches. The first uses direct persuasion while the second engages third parties by using knowledge to engage stakeholders who are not themselves the intended end users of information in activity that can sway decisions and make recommended action possible.

Working to build trusting relationships and engage with powerful agents directly was reported in the case study as having led to some important knowledge translation achievements. Knowledge work in health and education departments provided examples of this type of one-to-one interaction. Participation of researchers in policy discussions has previously been shown to be associated with policy use of research (Haynes et al., 2018). Trusting relationships create opportunities for interaction and provide a pathway where potential users may become more open to ideas and proposals. Haynes et al., (2011) pointed out that researchers—rather than research—appear to have influence in policy making and this finding is supported by data in the case study.

Messages used in insider persuasion were constructed to integrate persuasive elements through attention to framing in ways that emphasize areas of agreement or that raise the salience of shared values to support recommended action. An example in the case study directs attention away from polarization about ideology or partisan politics that characterizes discussions of social justice and fairness to focus on economics and the potential to save money or increase human capital from a societal perspective over time. The approaches used in insider persuasion therefore resemble how Weiss described political use; knowledge is called on to buttress an argument for a desired outcome (1979). Naming one-on-one relationship-oriented approaches as
“strategic” is based on a distinction between providing information in the hope that it may be used in productive ways (which would be classified as an exchange or transfer approach) and gathering and using knowledge to support a persuasive argument for a specific recommendation.

The second category of strategic use in the case study is identified by its reliance on third parties as allies who add the power of their voice to calls for action. This pathway to action uses knowledge to change discourses and raise the profile of issues. It rallies publics or coalitions around shared understandings as part of enlisting support that they then provide by exercising their civic or democratic power. Third party approaches have strong parallels with policy theories that recognize coalitions as an important lever for action (e.g. Jenkins Smith et al., 2014; Stone, 2006). In the case study, participants describe third party approaches in ways that map directly onto policy theory that recognizes the influence of advocacy coalitions and that has been described in relation to HELP by (Kershaw et al., 2017). Weible and Sabatier (2006) outline how knowledge can be used to inform agendas and attract allies, organizing and motivating coalitions to form and exert pressure through advocacy or through democratic participation to influence the willingness of policy makers to take action.

6.3.4 Summary: Research question 1

In summary, the classification of approaches to facilitating knowledge translation retained categories previously discussed in the knowledge translation, evaluation, and policy theory literatures. The research contributes by combining these approaches into a single comprehensive template that is hierarchically arranged under conceptually distinct headings constructed around the objectives of the separate categories: exchange or transfer, process focused and strategic approaches. The template provides structure and language for the purposes of analyzing knowledge translation and theories of change. Further research is needed to
establish the extent to which these headings and the arrangement of the template may generalize for use more beyond the current case study. The coding showed that exchange or transfer approaches were used in many ways already well documented in the literature. It also documented exchange or transfer toward conceptual use in ways not so well described. The emphasis on process focused and strategic approaches in the case study suggests that public health knowledge translation may benefit from greater attention to these approaches that aim to increase knowledge-context alignment by modifying contexts for use. Specifically, process-focused approaches aim to build the capacity of organizations networks, systems or coalitions to develop and use knowledge. Strategic approaches aim to modify incentives and motivation to influence those with the power to ensure effective use of the knowledge.

6.4 Discussion: research question 2

The second research question examined where, when, and how approaches described in response to the first question were applied in the case study. As with other work in the knowledge translation literature (e.g. Morestin, 2015; Weiss & Bucuvalas, 1980) the exploration directed considerable attention to alignment between recommendations or implications of the knowledge and the characteristics of contexts that allowed users to judge the knowledge as relevant and feasible to implement. The discussion in this section is based on an inductive analysis of patterns in the data and it reinforces points made when discussing the first research question. The second research question looked explicitly at the rationale provided by participants for apparent links between approaches and the nature of identified challenges. In examining approaches it became apparent that each approach targeted particular types of change that were seen as needed to advance effective use of the research that HELP conducts and promotes. This study proposes that recognizing how theories of change incorporate approaches as needed to
respond to identifiable and generalizable categories of challenge is a key to advancing theory about context-informed knowledge translation.

Combinations of approaches were investigated by analyzing practitioner theories of change. Six theories of change were described in the results. Examining practitioner theories of change provided a window into how the different approaches described in the data and called on to address objectives that knowledge-context configurations suggest are necessary steps on pathways to effective use. Categories of approach were developed through template analysis (exchange or transfer, process focus, and strategic) to have a theoretical foundation and a logical coherence. While these approaches are presented as analytically valuable, examining their use in theories of change does not suggest that practitioners were explicitly or consciously using these categories in their thinking about knowledge translation.

6.4.1 Identifying barriers and opportunities through operationalizing knowledge and context

Designing knowledge translation to address contextual challenges has been suggested as a sound concept since early writings in the field (Estabrooks et al., 2006; Graham et al., 2006; Grol & Grimshaw, 2003; Kitson et al., 1998). However, calls for a systematic way of identifying types of challenges through operationalization of key constructs has not progressed much beyond relatively fixed elements of contexts in health service organizations. Even there, the literature review showed that prospects for contestation and lack of implementation capacity have not had much attention when considering context with attention to alignment between the specific knowledge and leadership priorities, or the general capacity for understanding, and attitude toward evidence-informed action. This study examined knowledge and context using generalizable distinctions that could be used across the many potential applications of population
health knowledge to identify categories of challenge that can be addressed by context relevant approaches to facilitation. In the case study, challenges related to perceived relevance and feasibility were seen as discussed in previous research. The current study attends more to how judgments of feasibility are, or are not, accepted as a limitation to knowledge translation objectives when judging the capacity of existing systems or organizations to act effectively. It also considers how implications for potential users of knowledge (rather than for potential beneficiaries of recommended action) might influence perceptions of relevance and motivation to act. The operationalization of domains concluded that meaningful analysis of either knowledge or context requires reference to the other. The analysis of both dimensions offered some clarity about how context and knowledge might interact to suggest the type of challenges that could be expected and, with understanding of which challenges were key barriers in circumstances of exchange and use, how context-specific goals could be prioritized and addressed.

6.4.1.1 Knowledge

A distinction between knowledge that recommends a solution in a specific context and knowledge that highlights a problem and its causes was found to be meaningful. This finding can be seen to reflect the importance of problem structuring (Hisschemöller & Hoppe, 1995). Deciding how to do something better in an existing service context differs from the less-structured problem of how best to respond to a problem situation (Sohn, 2018). Findings suggest that examining problem knowledge with a view to inspire effective action could benefit from identifying which organization or level of governance has the mandate and capacity to act in ways supported by the evidence and who might be most capable or motivated to act. This type of analysis requires attention to the way that power and privilege are stratified and the prospect that
some powerful agents may resist innovation that could disrupt existing structures and power arrangements. Is a willing and existing organization available, and if not, who is the most appropriate target for population health knowledge translation?

Knowledge that proposes or implies disruption to existing resource allocation or institutional and power structures was recognized in the case study as worthy of special consideration. This type of knowledge fits Weiss’ (1979) category of knowledge that challenges the status quo. Major resource reallocation is inherently disruptive where funds are finite. Moving beyond a health service perspective to a societal perspective as when developing public policy the challenge becomes even more complex. The idea of status quo in this sense can be applied to any existing systems or institutional structures since change will always disrupt existing processes and practices and can disadvantage those who benefit within existing systems and resource distribution.

In the case study, processes of knowledge translation often include a sequence that moves from knowledge of a problem to knowledge of a solution before instrumental action can be taken. Where knowledge translation starts by demonstrating a problem, social processes and interactive exchange can be informed by problem knowledge to develop solutions that will, through modifying knowledge, context, or both, continue as deliberation and debate until solutions “fit” the context.

6.4.1.2 Context

Analyzing context requires reference to the knowledge being translated. A critical issue for knowledge translation appears to be how well specific knowledge fits with the existing priorities, capacity, norms, mandates, budgets and communication and leadership structures that
a setting can represent. These elements can be analyzed under a heading of social structuring (Contandriopoulos et al., 2010).

Contandriopoulos et al.’s (2010) cost sharing dimension was interpreted to represent mutual willingness on the part of researchers and potential users to invest time, resources, or ideas in production and exchange of knowledge. Using this interpretation, this dimension provided insight into prospects for exchange to be research driven, interactive or user driven. Analysis of willingness to participate in cost sharing can also suggest the extent to which motivation to act is present or contingent on the extent to which knowledge aligns with the priorities and capacities of those positioned to act on it. An example in EDI research showed a willingness of government agencies to share costs in research to support programmatic solutions but less enthusiasm for the same research when it recommended action with cost implications that challenged existing funding allocation and the interests or ideology of powerful factions. The dimension of polarization was a strong indicator for the use of political or strategic approaches just as Contandriopoulos et al. documented in their (2010) review. Knowledge carries ideological or real implications for different groups that might be seen as winners or losers.

6.4.2 Theory and links between knowledge-context configurations and approaches

Patterns were observed in how the nature of knowledge and attributes of context were reported as influential in determining which approach was used. Some of the observed patterns fit comfortably in the Contandriopoulos et al, (2010) framework. However, intentional uses of conceptual exchange or transfer do not have a place in that original framework. Findings in this dissertation suggest that the Contandriopoulos et al (2010) framework be expanded to include conceptual use. Conceptual use has a role in informing priorities and is also evident in the case
study where knowledge is used as a focusing stimulus in theories of change that incorporate process focused and strategic approaches.

The framework proposed by Contandriopoulos et al. (2010) shows that in situations where motivation to act is disrupted or blocked by polarization and disagreement, knowledge exchange is increasingly dominated by research driven political uses. Results in the case study support this aspect of the framework. Third party strategic uses were most frequently reported by intermediaries where resistance or inertia in contexts of use were recognized as barriers to action that could not be overcome by providing more information. This recognition led to adding a layer and separates knowledge exchange with intermediaries as an extra and separate step along a pathway that also includes work between intermediaries and potential end users.

The knowledge for which HELP is best known is what I have described as knowledge about a problem. It demonstrates preventable discrepancies and decrements in child development at different early life stages. The prominence of this type of knowledge may therefore be related to the extensive use of conceptual approaches in the case study. Conceptual use is often a first step on a pathway that incorporates interactive approaches to finding solutions. It is also used in process-focused approaches to encourage more efficient and collaborative service provision and to rally allies in third party strategic work. Adding conceptual use and process use to the Contandriopoulos et al (2010) framework suggests greater attention to the way that different approaches are layered in different pathways or theories of change. The way that theories of change can be built is shown visually in a diagram (Figure 2, p. 135).

Valuing partnerships and building systems around shared purpose were expressed as core priorities in the case study. Prescribing action was seen by several informants as antithetical to engagement where the results of replication were not assured and directive approaches were
generally avoided at HELP on the basis of to their perceived potential to lead to disengagement of potential users or allies. Aiming for conceptual use shapes the conversation but accepts that users are in charge of what they do with the information. Bringing people together as partners and allies around an issue described by data was expressed as an issue of identity: “part of our DNA” (EDI 2). There was less agreement that the use of strategic approaches was core business in HELP knowledge translation.

Lack of political will was often identified as an issue and reported by some to be accepted as a reason to focus on promoting feasible action where possibilities are limited by the absence of necessary funding and infrastructure. Users in education for example referred to inequities and early family environments as “out of our control”. The response of ignoring evidence that is not seen as applicable by a specific organization has been recommended as sensible in prioritizing knowledge translation activity (Carden, 2009; Grimshaw et al., 2012). However, a number of researchers at HELP and several intermediaries expressed dissatisfaction with this approach given the implications of the evidence and they showed willingness to engage in the more contested forums of resource allocation and public policy. These participants see public policy and resource allocation as necessary preconditions for the coordinated action that research suggests will be effective. Where knowledge translation invests in these challenging contexts for knowledge work, strategic approaches, including third party approaches can be used to defuse or overcome resistance by powerful opposition or resistance.

6.4.3 Discussion of Theories or micro theories of change

Six theories (or micro theories) of change emerged from an inductive analysis of how participants spoke about the thinking and rationale that informed how they approached knowledge translation. While the theories do not map directly onto the template of coded
approaches, analysis shows that the hierarchical classification can readily be used to analyze the theories. Examination of theories of change supports the idea that the three high level categories of approach represent responses to increasing complex challenges in contexts of use. While this idea will need to be explored in other settings, it offers usable heuristic guidance for considering components within theories of change in public health knowledge translation planning.

In contrast with approach headings that come from the research literature, the theories are expressed here as prescriptions. With the exception of “no data no problem no action” which represents a principle with implications for communicating data as a driver for action, the remaining five theories are explicitly directive.

The first theory suggests providing data to shed light on a problem. “No data no problem no action” can be seen as a complete theory. As the results showed, its effectiveness is not assured since potential users apply the data to their own priorities and interpret it through their existing understandings with awareness of organizational constraints such that the action taken may not be effective. At HELP, providing data to shed light on a problem may in fact be more important for its role in providing a focus for potential users to come together in new processes of interactive exchange to synthesize the data with local knowledge to determine what can be done.

Sharing data and ideas as suggested by this theory is also the foundation for process-focused work to increase the capacity of systems for implementation and to build coalitions and public support to be used in strategic approaches. While action that results from the use of this theory is not limited to action that aligns with the intentions of knowledge translation practitioners, this theory can be used intentionally. As a default, it represents a kind of low risk shotgun approach to provide better underpinning understanding that may hit several targets. By
not prescribing specific action, there is little prospect of resistance even where potential users do not see the relevance of the data in advancing their aims.

The advice to “provide actionable evidence” is another exchange or transfer theory. It calls on solution knowledge as a knowledge product – as opposed to “no data no problem no action” that provides knowledge about a problem. As elaborated in the results, actionable evidence is only actionable in contexts where recommendations from research are seen as relevant or can be modified through interactive exchange to fit with the values, priorities, capacity and mandates of an existing institution.

The advice to “work interactively with users” prescribes interactive exchange (e.g. Kitson & Bisby, 2008). This theory can be seen as valuable for its capacity to contribute to building alignment by narrowing the focus of knowledge production and exchange to actions perceived as relevant and actionable in contexts where users are capable and willing to engage. This theory also supports interactive work as a forum for process focused and capacity building or strategic discussions among potential collaborators.

The advice to “unite service providers and build a stronger system of services” relies on relationships. It is a direct prescription for process-focused work (e.g. Patton, 2007). It was most evident in the case study where it is used extensively used with service providers as a response to a perceived deficit in service capacity.

The advice to build trusting relationships is a core element of process focused work in the case study and it is also applicable as a key element of productive interactive exchange. It is presented as a facilitating component for all knowledge translation in the case study.

The direction to “organize support (or pressure) to motivate action” aims to encourage users who appear to have power to act but who may be experiencing pressures, values or
competing priorities that prevent them from attending to the knowledge or taking action. The use of strategic approaches is reported to be used, usually by intermediaries at arms length from HELP, in recognition that knowledge alone will not motivate action when it can be rejected as irrelevant, where potential users are divided, or where there is resistance or inertia that must be overcome.

Strategic approaches and the direction to organize support are discussed in the theoretical literature about policy where knowledge calls for major investment or where it confronts ideological divisions and resistance (e.g. Sabatier, 1987; Kingdon, 1995; Baumgartner et al., 2002). The recommendation to organize support (or pressure) to motivate action is overtly political. While partisan politics were avoided at HELP, knowledge translation does not need to emphasize partisan divisions. For example, Kershaw et al. (2017) describe an intentional application of advocacy coalition theory that builds a coalition around ideas.

This theory represents a culmination combining three categories of knowledge translation approach. Exchange or transfer (of data and ideas) engages allies through process-focused approaches and builds coalitions or networks with the capacity for organized action that makes direct political influence possible. This diverges significantly from applications of process-focused work that are content to optimize the use of currently available resources and services. In the challenging circumstances that call for third party strategies, interview participants identify discriminations and powerful forces behind resistance: those calling for alternative uses of the same resources or those unwilling to disrupt existing practice or status quo structures. It is important to note that the resistance discussed in the case study was seldom related to the quality of the knowledge or its potential to improve health.
The idea of pathways with several or multiple components appears helpful in considering how the results of this study might be used. It was clear that in some theories, a sequential application of approaches was required. Accomplishment in one approach enables application of the next. However, interview participants objected to an idea that their knowledge translation followed a single linear trajectory of steps or stages. There was ample evidence that a number of approaches can be used simultaneously and further research into complex theories of change may benefit from using generalizable and targeted ways to operationalize knowledge context and approaches as was done in this study.

6.4.4 Summary: Research Question 2

This section examined how challenges, discerned through an analysis of knowledge and context, were linked with approaches or theories of change. Looking at what needs to happen before it is possible for knowledge to be enacted represents a novel starting point. Having generalizable ways of examining knowledge and contexts to identify key challenges is foundational to recognizing how some approaches to facilitating translation have reasonable prospects of addressing these challenges while others do not. The expectation that different circumstances call for different approaches or theories of change is not new but previous work has not been as specific in recognizing links between identifiable categories of challenge and prospects for constructing context-specific knowledge translation goals that employ relevant categories of approach.

The extensive use of knowledge of a problem with conceptual intent across several theories is particularly noteworthy because the case study demonstrates that this component can perform multiple functions. On its own it can inspire innovation, it can also be a foundational part of increasing collaborative capacity or uniting coalitions to organize and exercise political or
civic power through advocacy coalitions or through societal discourse and democratic participation.

In using conceptual use to transform systems and process, findings suggest that there may be great value in considering implementation capacity as a malleable, rather than fixed, barrier that might be overcome through process-focused work using knowledge to build a new or better system for implementation. Considering implementation capacity as a target in knowledge translation is a novel contribution with strong relevance for population health.

These findings support and extend previous work suggesting that polarization is associated with political uses of knowledge (Weiss, 1979; Contandriopoulos et al., 2010). In the case study, the type of disagreement that led to strategic action did not appear to focus on the credibility of the knowledge or even the potential of the proposed solutions to be effective. Participants reported that a principle challenge identified by the research was to influence funding or public policy interventions to reduce inequities directly or by establishing a system with capability and infrastructure to implement the research informed recommendations for universal services. Progressing with these recommendations was noted as impossible without strategies to build political support and to ensure that policy makers and funders have the social license to proceed.

6.5 Discussion: Research question 3:

The third research question was designed as an explicit test of theory based on Contandriopoulos et al.’s (2010) framework. The test included propositions derived from the literature in order to incorporate a fuller range of approaches and contextual considerations. It examined the extent to which the knowledge translation approaches used by experienced knowledge translation agents might be anticipated by considering knowledge-context
configurations. This question contributes to the overall interest of the study by testing the extent to which theory informed or deductively derived linkages or patterns between knowledge-context configurations and approaches can be accurately anticipated. The intended inference is that predictions made on the basis of assessing generalizable categories in the three domains may represent principles or heuristics that may apply more broadly. Differences in knowledge context configurations achieved through case selection were expected to lead to different approaches.

The cases were both more contextually diverse than anticipated. Both cases engage with change at multiple levels of practice and governance and each level of potential use represents different knowledge-context configurations: from informing parents or service providers to advising policy networks in provincial level governance. Characterizations of context described in the method section were over simplistic and results were reported in relation to the different contexts of use that became apparent through analysis - within as well as across the cases. While different uses of exchange or transfer approaches were not as clearly evident as expected, anticipated differences were observed for the process focused and strategic approaches. Lower capacity for implementation at the service delivery level in the EDI case was linked with strong attention to process use. The EDI case also used third party strategic approaches in ways not seen in the MDI case, apparently in response to perceived barriers in terms of motivation to act at higher levels of governance. How these results reflect on the literature is discussed below by examining anticipated and observed differences separately for: exchange or transfer, process focus and strategic focused categories of approach.

6.5.1 Anticipated exchange or transfer differences

In the exchange or transfer category, knowledge-context configurations suggested that the MDI case would demonstrate more use of instrumental approaches because the knowledge
product provides more direction for service providers. The MDI case was also expected to show increased use of diffusion approaches due to having a more structured organizational context for networking and communication (see p. 136). These anticipated differences were reported but the evidence was not consistent and differences were not stark.

MDI knowledge translation occurs primarily in the relatively well-funded and stable context of the education system. By contrast, the service context for EDI data was reported as more fractured and more frequently disrupted by funding changes. However, in both cases, the reluctance to be directive and a preference for interactive work appeared to override the potential influence of case differences. Furthermore, while the fragmented service environment of the EDI was confirmed by data, ongoing process focused work meant that networks for diffusion were available and strong in both cases despite this initial difference.

One clear difference was seen at high levels of policy and resource allocation. The EDI applied instrumental approaches of exchange in ways not seen at lower levels in the EDI case or with the MDI. Instrumental approaches were not anticipated in the EDI case. Participants rationalized prescription of solutions at this level as a convenience for policy makers who may not have the time for the interactive approaches more generally preferred. The value of clear and repetitive prescriptive policy messaging as seen in the EDI work was also highlighted as a way of rallying support for specific action related to strategic uses. Calling for specific action by policy makers has the capacity to be influential on its own but the clear directive messages are also used to rally support. Examining how exchange or transfer approaches can provide framing and focus to initiate process focused and strategic approaches is made easier by the systematic categorization of approaches.
6.5.2 Anticipated process focused differences

The intersectoral and fragmented context of the EDI case was expected to lead to more emphasis on process-focused approaches (see p.136). This expectation was based on differences in the social structuring dimension described by Contandriopoulos et al., (2010). While the social structuring dimension was used to examine alignment between the knowledge and aspects of fit with mandates, priorities and capacity in the subcases, this prediction emerged from the data and it represents a novel extension to the Contandriopoulos et al., (2010) framework that expands (Patton’s 1998; 2007) description of process-focused approaches to include knowledge-centred work building intersectoral capacity for implementation.

The focus on building a shared focus and communicating to coordinate action within an organization was seen in both cases and in ways compatible with previous literature (see McCormack et al., 2002; May & Finch, 2009; Cummings et al., 2010; Shiltz & Kitson, 2010; Blasé, Kiser & Van Dyke, 2013; Shaw, Larkin and Flowers, 2014). The focus on building systems beyond single institutions was a prominent feature of EDI work in ways not seen in the MDI case or widely described in other knowledge translation research.

As discussed earlier, an assumption that current organizations represent an appropriate boundary of feasibility is sometimes openly stated (Grimshaw et al., 2012). This view is echoed in program planning approaches that limit consideration of options to those feasible for implementation by specific organizations or systems and within available funding (Green & Kreuter, 2005). However, where knowledge suggests that existing structures and practices are supporting inequities or causing systematic harms, results from this study suggest that it may be essential to consider how capacity for acting effectively on evidence can be advanced beyond existing organizations and their capacities and mandates.
6.5.3 Anticipated strategic focused approaches

Where polarization is a feature of the context and powerful groups oppose action suggested by the evidence (expected to be more prevalent with the EDI case), political or argumentative uses of knowledge were expected to be evident.

The use of third party strategic approaches was seen only in the EDI case. Within the EDI case, strategic approaches were only used at levels of governance with power to allocate resources or make policy. In service delivery settings, polarization was not evident as a factor in selecting approaches. Service providers appeared to largely accept that they had little capacity to affect inequities and so they did what they could programmatically or collaboratively within their institutional context, capacity, budgets, and mandates. Strategic work was most evident in work targeting high-level governance decisions. Where large investments are called for, ideological polarization and competition for resources were highlighted as a justification or rationale for the use of strategic approaches.

The results showed two branches of strategic approach. The least controversial is labeled insider persuasion in this study and this was evident in both cases, much as described by Haynes et al., (2011) or by Stone (2006) in regime theory in the policy literature. Insider persuasion was apparent in both cases at the department leadership level and with the EDI case at higher levels of provincial governance. No attempts to influence provincial resource allocation were reported as part of MDI knowledge translation. When using insider strategies to persuade, HELP data show considerable attention to the framing of messages in ways that seek to redefine the problem in ways that will engage support. Framing is a key component of agenda setting and deemphasizing lines of division in controversy as discussed by Kingdon (1995) or in prospect theory by Kahneman and Tversky (1979). Framing aims to focus discussion and attention to
areas where there is greater likelihood of agreement. In EDI work, framing in economic terms was used strategically while framing the impact of MDI action in terms of education outcomes was used to make the MDI more clearly relevant to educators.

Open engagement with overcoming resistance in the EDI case reflects recognition of challenges based on ideological polarization, competition for resources, or resistance to change that challenges the status quo. The idea that transformative change or large investment might rely on public or advocacy support is clearly stated in the EDI case and is core to policy theories such as punctuated equilibrium theory (Baumgartner & Jones, 2002), advocacy coalition theory (Jenkins Smith et al., 2014), social movement theory (Brown & Fee, 2014) or multiple stream theory (Kingdon, 1995).

Third party approaches have been largely excluded from prominent discussions of knowledge translation despite being noted by some as essential to advance action based on population health knowledge (Fafard, 2008; Clavier & de Leeuw, 2013; Cairney 2015; Gagnon et al., 2017; Kershaw et al., 2017). In their policy text, Buse, Mays, and Walt, (2012) place “getting research into the hands of influential third parties such as policy advocates, respected experts, NGOs etc” in their list of well recognized ways to have policy influence (p182).

It is important to note that the intentional and overt use of third party approaches in the case study was not reported as a first choice at HELP. It appeared to be a reluctant response and used as needed to change the incentives affecting policy makers or those with capacity to direct resource allocation at a provincial level. Despite being reported as effective, the use of strategic approaches was often explicitly avoided unless perceived necessary. As discussed earlier, some practitioners were content to promote feasible local action rather than no action at all even where coordinated and universal action was recognized as a key to implementing the recommendations
of the research. The use of third party strategies was recognized to have the potential to alienate funders of the research and to expose knowledge translation or even the research itself to criticisms of bias.

It appeared to me that in the case study, political strategies that focus on building alliances around values only became conspicuous as an indication of bias when proposing action that challenges the status quo. Demonstrating allegiance to the values and priorities of powerful actors could be equally observed as biased rather than evidence based when foregrounding alignment with interests as a key to evidence production and use as described in relation to the development of the MDI and as observed or recommended by previous researchers (Grimshaw et al, 2012; Harvey Jas & Walshe, 2015; Reed, 2014; Kickbusch, 2016). If knowledge translation accepts existing priorities and institutional mandates as a boundary of feasibility, knowledge translation presents little opportunity to challenge structural and power arrangements represented by the status quo even where these arrangements support or maintain discriminations or harm the health of segments of the population.

HELP, as a research organization, is sensitive to accusations of bias. Participants struggle to balance caution around advocacy with recognizing a need for political engagement. Some participants noted that engaging with public discourse and political action are necessary components along pathways to improved population health as described by previous research (Hawe, 2015; Rudolph, 2013). Others set a clear boundary for themselves by claiming that the role of researchers was to produce and provide information impartially so that potential users can decide to use it or not as they see fit.

Policy theory has much to offer where the intention is to influence policy. However, it may be important to note that policy theory was not developed from the perspective of a research
organization. Balancing research integrity with a commitment to specific uses of knowledge has long been recognized as problematic (Weiss, 1991). The role of a research organization in using third party strategic approaches remains controversial even among knowledge translation practitioners in the case study: “as a research center we can’t be seen as advocates”. Calling on scientific authority to support political action is easily misused and knowledge can be corrupted where it is used selectively to promote a specific use (Cairney & Oliver 2017; Nisbet, 2012; Weiss, 1991). However, there is also a potential ethical dilemma for researchers if they choose not to engage in public or political debate when false assumptions and beliefs support action that results in harm (Resnik & Elliott, 2016; Weiss, 1991).

In publications, HELP researchers make bold statements about the need for action at high levels of governance. Some individual HELP researchers are willing to be seen as advocates and to argue strongly for political action by publics at open events. However, the knowledge translation team is focused on sharing data and evidence and intentionally avoids advocating for, or even recommending any specific action.

One of the ways that HELP appears most willing to support strategic action while avoiding some of its taint is through providing information to third parties who are more free to engage politically. An observation made during analysis was that overt advocacy was described in greatest detail by intermediaries working at arm’s length from the case study organization rather than by HELP researchers or knowledge translation workers who were more likely to make statements that their work was to inform rather than to push for any particular action. One participant reported having to leave employment with the organization to be able to engage with the strategic work she saw as necessary to advance population health.
people suggested ...you need to actually mobilize people... you need to move some from such a focus on research ... to a focus on advocacy and a campaign ...so then I moved away from HELP... (EDI 12)

Two other participants started separate organizations to advance equity when the work that they saw as necessary (with Indigenous families before their children reached school) was beyond the existing mandates of the educational institutions they worked in. A third organization developed as a boundary organization, affiliated with HELP but not funded by HELP, so that it had greater autonomy in terms of its overt advocacy for specific policy action underpinned by HELP data and research. The role of boundary organizations in this kind of work was out of scope for this research but findings suggest that this would be a rich area for further research. What ethical and practical issues do these organizations face when working toward contested action when they are less constrained by institutional norms and the potential for their funding to be withdrawn by those they may criticize.

Interview participants who identified as advocates explicitly recognized value in ensuring that HELP as a research organization was perceived as objective. While not the central focus of this work, the case study therefore provides an informative study of navigating the challenges of promoting action that requires process or strategic approaches as necessary components of ensuring that evidence is used optimally. Some HELP members were willing to engage directly in public debate and to argue for increased investment and specific policy action. Other case study practitioners sought to distance themselves from advocacy yet were still able to provide information to publics and to advocates who then use the knowledge in ways reported to be influential.

An intriguing variation of strategic approach was referred to as providing political cover. In some cases, policy makers were reported to welcome third party support to help them progress with challenging policy initiatives. Authors with experience in policy networks recognize that
policy makers are accountable to various constituencies and seldom have power to act in ways they choose (Weiss, 1979; Cairney et al., 2020). Policy-making participants in this study reinforced the contention that even apparently powerful members of policy networks may not feel empowered to make contested decisions without visible support.

The literature review raised concerns that the drive for actionable knowledge might limit investment in mobilizing the sometimes stronger but harder to action evidence of the influence of social determinates of health. This concern was supported by data in the comparative case component of this study. Where population health evidence suggested novel action or a need for new infrastructure or resources, EDI data show that the action taken by service organizations was sometimes shaped more by the capacities of the people and organizations who were willing to respond than by the conclusions of research. This idea has been discussed as path dependence (Pierson, 2000; 2015). When looking at problems, societies and organizations look first to the tools at their disposal. Focusing on what can be done with existing services can limit the likelihood of investment in forms of population health action that are beyond the capacity and resources of existing health care services. This finding is of some concern given the strength and ubiquity of the evidence about the harmful effects of discriminatory but embedded status quo social arrangements.

6.5.4 Summary: Research question 3

A menu of approaches to knowledge translation under a broad knowledge-translation umbrella allowed consideration of how the knowledge translation situations represented by the comparative cases were linked to specific categories of approach. It is important to state that this research is not making a case that more complex approaches are better –unless multiple
components are required to address the types of challenges identified by considering characteristics of knowledge and context.

In some situations at HELP, particularly in the MDI case, research recommendations for effective action fit comfortably with the objectives, values, practices and resources of the schools positioned to take action. In these circumstances, exchange and transfer strategies were reported to lead to uptake of local, evidence informed intervention. It is only where capacity or motivation were lacking that process and strategic approaches appeared to be required to change the implementation context in order to make knowledge use possible. These circumstances were represented more prominently in the EDI case. As anticipated, capacity building and strategic approaches were observed in the EDI case in ways not seen with the MDI. It is important for interpreting the case comparison to remember that both cases represent knowledge work by the same research organization. This design element was intended to provide greater confidence that differences are related to the different knowledge context configurations represented by the separate cases.

Case comparison results build on the evidence presented earlier that different categories of approaches respond to categories of identifiable challenge. The comparison shows that different situations result in the use of different blends of approach. The EDI case shows that when aiming to inspire preventive action to confront harmful influences of social determinants, approaches are combined in ways that appropriately reflect the nature of the challenges that this ambitious project represents.

6.6 Strength and limitations

The use of qualitative methods and a case study design limits the capacity of this research to make broad claims about causal affects. However, it can provide insight into the thinking
behind knowledge translation in ways that can support theory at a level that Yin (2014) calls analytic generalizability.

With qualitative research, the potential for researchers to overlook negative cases, alternative explanations or disconfirming evidence is always present. It is important that all competing explanations for findings are considered. I have aimed to eliminate some competing explanations by design. I have also recognized the possibility of researcher bias throughout. The weaknesses associated with subjective work in qualitative inquiry can only be overcome through integrity and reflexivity in the part of the researcher and by including others as collaborators in discussions and monitoring possible bias.

Using case study to investigate how knowledge and context can be analyzed to suggest which approaches may be needed has clear advantages. Access to the internal processes that inform the choices of experienced practitioners become available through situated qualitative inquiry. However, case studies are inherently limited in their capacity to make conclusions about what is generalizable knowledge. For this reason, the intended inference that findings may be generalizable at the level of principles or heuristics has to be stated tentatively and to invite further challenges and refinement. The theory being tested was founded on previous literature and this case study contributes some new evidence toward answering the complex question of how to plan context-informed knowledge translation.

Qualitative analysis was primarily conducted by the PhD candidate. Despite checks and collaboration to limit biased interpretation, interpretation and coding of themes and the choice of headings and hierarchical arrangement of the approach template all relied on subjective judgments. Readers are invited to consider how the data support claims and to challenge
unsupported assertions. Whether the insights and proposed associations are found reliable or useful in planning will ultimately depend on further research.

Gathering data from direct participant experiences and from several perspectives is a strength in this study. Participants represent knowledge translation thinking and practice from their roles as researchers, dedicated knowledge translation staff, intermediaries and users in service organizations and at various levels of policy. Reports from the experience of different informants converged as a form of validation. Informants also provided opinion and attributions about the effects of their knowledge translation.

The study used a retrospective design to explore what the organization had learned over time. This allowed temporal relationships between knowledge translation and documented action to be considered. However, the dependence on recall in a retrospective study is an unavoidable weakness. Memory is imperfect and informants may be inclined to remember events in ways that are biased by subsequent events or that reflect well on themselves. By using triangulation, some of this weakness was addressed. Multiple pieces of self reported evidence support a narrative that can be further validated through HELP publications, reports archival records, and media articles. Recall by experienced practitioners may be the only way to access the thinking behind their previous decisions, and their current, experience-based beliefs that inform their planning and practice.

The case selection for the comparative case study was only partially successful in creating a clean two case comparison. It became apparent when analyzing data that the cases each represented multiple contexts for exchange and use. While the case comparison ended up being more complex than expected, multiple identifiable contexts within cases allowed
unanticipated insights about the importance of cost implications and levels of governance when considering competing options for using resources.

The goal of contributing to generalizable guidance for knowledge translation at the level of principles through a single case study is optimistic. A single case study cannot represent all of the distinctions in approach available nor all of the meaningful knowledge-context configurations. By focusing on the nature of challenges represented by knowledge-context configurations rather than on features of the setting, the heuristic guidance being offered aims to contribute generalizable knowledge for population health knowledge translation. While stressing the challenges of working beyond the bounds of single institutions, it is important not to oversimplify the challenges of work in single institutions. Even there, gaps in capacity to implement and issues related to competing demands can block motivation and use.

6.7 Implications for future research

The idea that approaches can be categorized under three headings of approach (exchange and transfer, process focus and strategic focus) and that these approach categories address three prominent types of challenge to knowledge use is an enticing one for future research. Further and finer grained research into operationalizing knowledge-context configurations may build on this theoretical proposition. There are many potential distinctions within each high-level approach heading. Further research is also needed to determine the effects of analyzing and responding to the types of contextual challenges discussed.

The case study suggested that some theories of change incorporate sequences of approach. Some approaches are theorized (by case study participants) to pave the way for others. The research suggested that quite separate arms of knowledge translation could work in complementary ways or even produce synergies. Further research is needed to examine which
combinations of approach prove valuable in different circumstances. A systematic language for this type of inquiry is a starting point.

The case study provided information to suggest that using separate branches of knowledge translation could be counterproductive where practitioners do not attend to how these separate contributions might contribute to overarching aims. For example, several participants in service provision roles expressed concern that effective knowledge translation for high-level policy was leading toward infrastructure for childcare in ways that might displace existing service provision organizations and disrupt their planning separately at local levels. The potential for approaches to be combined in complex theories of change that may include multiple complementary arms as well and parallel and sequenced activity is a rich area for further study that may benefit from some of the conceptual work reported here.

The current study suggests that knowledge can bring people together in ways that may give knowledge a higher profile and a better chance of solving some of the health problems that are caused by the ways that societies are structured. If population health action is to be effective in challenging problems such as inequities, environmental exposures, biodiversity loss, or climate change, further research is needed to guide the development of context specific theories of change that set context specific goals to confront the three challenges of promoting understanding, capacity and motivation as necessary steps on pathways to effective action. Future studies may wish to focus specifically on how power and status differentials influence knowledge translation practice, e.g. gender, class, ideology, sexual preference, and ethnicity. Attending to how approaches can be ethically combined while maintaining research integrity is of particular interest in areas where a societal perspective to public policy development and resource allocation is appropriate.
While this study focused on knowledge translation for population health, it also suggests that there may be value in examining the extent to which challenges of understanding, capacity and motivation might be usefully considered within institutions as well. Even in established health service organizations these three lenses may effectively direct attention to problems that are preventing uptake of effective practices.
Chapter 7: Conclusions

Change in every situation has costs. Knowledge translation aims to be disruptive. New processes or technologies displace others. The promise of knowledge translation is that benefits will outweigh the costs of change. Whether benefits of knowledge accrue to some sectors in society over others is a central question for population health. A societal perspective is appropriate when considering how inequities, discriminations or structural arrangements might be addressed to improve population health. This type of analysis requires that knowledge translation recognize how societal preferences, powerful institutions and structures, and political processes underpin action in high-level governance. Where evidence-informed recommendations threaten the advantages of those with power to resist change, knowledge translation may need to use knowledge to engage allies or emphasize governance accountabilities when aiming to influence policy and decision-making processes.

Knowledge translation in the case study is explicitly intended to lead to multiple forms of action by different users with different capacities at different levels of service provision and governance. Many of the suggested uses are not within the capacity or jurisdiction of single organizations. This insight points to two key issues. The first is the potential importance of considering what needs to be in place to make evidence informed action possible when selecting targets for action. The second is that multiple knowledge-context configurations may need to be analyzed separately at different levels and in ways that reflect the capacities and motivations of different potential users – even within single knowledge translation initiatives.

The current study suggests that a careful situational analysis can look at how knowledge and context align or fit in ways that will make the use of specific knowledge more or less possible or likely. The proposed analysis of knowledge and context provides information about
the types of challenges that can be anticipated. Three types of challenge for knowledge translation are readily identifiable and each suggests separate, context specific, interim goals on pathways to instrumental use. I chose to emphasize challenges as a way to understand what is going on - rather than proposing generalizable goals for knowledge translation that could suggest that they are universal across circumstances of knowledge translation. By understanding challenges, practitioners can devise relevant and specific goals. For example, an inherent goal of knowledge translation is to ensure that potential users become aware of the knowledge and understand how to use it. Examining the challenges of communicating particular knowledge in contexts of exchange can help shape clearer goals of who must be reached, what approaches and channels are likely to be most effective in informing them, and exactly what users are being asked to do. The second type of challenge referred to in this study is ensuring that potential users have the capacity to implement evidence-informed action effectively. While it would be possible to state capacity building as a universal goal of knowledge translation, setting capacity building goals becomes crucial only where existing capacity is lacking. It is the recognition of context specific gaps in capacity for specific types of intervention that can inform approaches to increasing service capacity. Where more effective use of existing resources cannot do what is required, knowledge translation practitioners may have to also develop resource allocation goals and strategies to make them achievable.

It would be possible to suggest that it is always advisable have a goal to ensure that where intended users have understanding and capacity, they are also motivated to act. Understanding the nature of the challenge in terms of reasons for resistance, power imbalances, and competing agendas or rationalities makes it more possible to determine which particular strategic approach is likely to reduce polarization or whether allies are needed and how they may
be engaged. This research suggests that three different categories of approach to facilitation have been developed to address each of these three different types of challenges. Approaches can be selected and combined with context specific clarity about what knowledge translation is aiming to achieve in specific circumstances and along more or less complicated pathways to use.

The implication of findings in this study are that theories of change and knowledge translation planning should incorporate approaches that have a reasonable prospect of overcoming the challenges that analysis of knowledge-context configurations reveal. The study supports the framework proposed by Contandriopoulos et al. (2010) that suggests that political use may be a necessary approach for population health action when decision makers are not engaged or motivated by knowledge to overcome polarization or take action that challenges status quo institutional and power structures. This finding echoes conclusions of political science authors who agree that where those with reasons to resist change have the power to be influential, strategies that recognize the importance of power will be required to advance policy (Jenkins Smith et al., 2014; Sabatier & Weible, 2014). Weiss made a very similar observation in her seminal (1979) article about how research can be used.

The case study organization has been able to support strategic action in several ways, including approaches that engage third party influence as discussed in policy theory. Knowledge is used to strategically engage constituencies or advocacy coalitions in political action. Another strategic approach described involves using two branches simultaneously such that insider persuasion is used to convince policy makers of the value of action while third party approaches provide what is referred to in the case study as “political cover” that helps embolden them to take action where they face political resistance.
The current study recommends additions to Contandriopoulos et al.’s (2010) framework. It suggests including intentional conceptual use of knowledge in focusing attention on problems as a means of inspiring investment and innovation and bringing stakeholders together for collaborative problem solving, planning, services or political action. It explicitly considers how conceptual use of knowledge can be used as a first step along a pathway that first changes understandings and uses knowledge to focus attention on issues before adding further elements as necessary: process focused approaches to build capacity for implementation and third party strategic approaches to change incentives that influence those who may not be willing to act without powerful support or social license.

A key issue identified by the current research is that knowledge can only be considered actionable if there is a system, institution or organization with the capacity and willingness to implement it (Baum et al, 2013). Where contextual constraints of existing organizations are accepted as a starting point, options for effective knowledge translation are limited to those that prioritize knowledge that is produced, selected or refined to be compatible with existing organizational capacities and priorities. As others have pointed out, there is no institution that is consistently funded and mandated to implement knowledge about the social determinants of health and therefore no single target user for researchers to guide and inform with this information.

The current pressure on academics to invest in knowledge translation and to demonstrate that their research has led to instrumental action may discourage genuine engagement in the context change work that research about social determinates appears to call for. If, as this research and the work of HELP suggests, effective mobilization of established population health knowledge is reliant on funding that is in turn reliant on political support, there is a need for
researchers to bring their research to bear on public discourse and to give it a voice in policy arenas. It is reasonable to wonder why researchers would engage in challenging the status quo or engaging in political action if they are more likely to be criticized than rewarded for their efforts.

The current study supports a view that to increase the use of population health knowledge, and particularly knowledge that shows how structural factors and environmental or social determinants support inequities associated with poor population health outcomes, it will be necessary to challenge existing structures and resource allocations. Drimie & Quinlan (2011) note that researchers seldom have power to impose change and that their capacity for influence “lies in working with other parties that do have power, in ways that support them to use their power constructively” (p. 4). In some circumstances in the case study, knowledge is used to bring people together in ways that challenge status quo political agendas and common understandings that have historically influenced problem formulation in policy. There is little doubt that this type of engagement is complex and requires strong commitment to research integrity and ethical use of findings. However, without attention to the ways in which knowledge can change contexts for exchange and use, the accumulating knowledge about social determinants of health may continue to be sidelined into ineffective rhetoric and indecision.
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Appendices

Appendix A Operationalizing knowledge and context for the apriori templates

As a summary of the various ways that knowledge has been examined in previous work, Table 33 shows examples of how these dimensions represent characteristics that can be considered on a continuum with implications for knowledge translation. Columns labeled as more and less complex show how extremes on each characteristic are associated with more or less complex challenges for knowledge translation.

Table 33 Dimensions of knowledge

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Less complex</th>
<th>More complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundation for relevance and credibility</td>
<td>Evident alignment with practices, values and norms in existing institutions</td>
<td>Low alignment with practices, values and norms in existing institutions</td>
</tr>
<tr>
<td></td>
<td>(May &amp; Finch, 2009; Lavis et al., 2005; Harvey, Jas &amp; Walsh, 2015)</td>
<td>(Carter et al., 2011; Cairney &amp; Oliver, 2017)</td>
</tr>
<tr>
<td></td>
<td>Academic rigor, validity and generalizability established through experimental research (Guyatt et al., 2011; Grimshaw et al., 2012)</td>
<td>Validity and generalizability reliant on observational studies and triangulation (Armstrong et al., 2006; Brownson, Chiquist &amp; Stamatakis, 2009)</td>
</tr>
<tr>
<td>Complexity of synthesis for recommendations</td>
<td>Single studies, systematic reviews or expert syntheses provide clear direction (Grimshaw et al. 2012; Atkins et al., 2013; Tricco et al., 2016)</td>
<td>Complex syntheses include diffuse inputs from multiple sources (Cartwright, Goldfinch &amp; Howick, 2010; LaPaige, 2010)</td>
</tr>
<tr>
<td>Degree to which the knowledge points to a clear actionable solution preference</td>
<td>Solutions are designed for application in specific, existing institutions (Guyatt et al., 2011; Grimshaw et al., 2012; Haynes et al., 2018)</td>
<td>Information suggests an array of options for intervention across different institutions and levels of governance (Cartwright, 2011; Armstrong et al., 2006; Armstrong Pettman &amp; Waters, 2014)</td>
</tr>
<tr>
<td>Degree to which knowledge challenges status quo power structures and power arrangements</td>
<td>Suggests work within existing structures and systems (e.g. Guyatt et al., 2011; Grimshaw et al., 2012).</td>
<td>Suggests that disruption or transformation of existing structural arrangements may be needed and resisted by powerful agents (Weiss, 1979; Landry, 2006; Contandriopoulos et al., 2010)</td>
</tr>
</tbody>
</table>
It is important to reiterate that in discussing knowledge characteristics on any of the dimensions above, an assessment of the knowledge characteristic can really only be made when context is also considered.

Context

The categories or dimensions for classifying context were drawn primarily from Contandriopoulos et al., (2010) since the examination of context contingent practices of knowledge translation is based on their work: (1) issue polarization which represents competition for resources or ideological divisions, (2) social structuring which reflects institutional and network affordances and/or constraints, (3) cost sharing of investment in knowledge translation. While Contandriopoulos et al.’s (2010) work creates the primary frame for analyzing context, other literature fleshes out the dimension of social structuring. The political science literature is relevant to the question of polarization. Together these categories represent characteristics that are relevant to the “fit of knowledge” and they relate to the balance of input and commitment to using evidence to inform action. The three dimensions proposed by Contandriopoulos et al. (2010) are described below with reference to other literature that contributes under each heading.

As with classifying knowledge, determining a classification for polarization or cost sharing requires consideration of the knowledge product since these dimensions are not fixed but rather represent knowledge specific responses. The way that these features of context present facilitators or barriers to knowledge translation of specific knowledge products is of primary interest.

Key constructs for classifying knowledge

The following elements of context were selected as relevant to analysis of context for the purposes of planning knowledge translation. Table 34 below is structured under the dimensions
proposed by Contandriopoulos et al., 2010) and includes references to other authors who have also drawn attention to them.

**Table 34 Dimensions of Context**

<table>
<thead>
<tr>
<th>Heading</th>
<th>Distinctions</th>
<th>Literature describing the concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social structuring</td>
<td>Organizational culture</td>
<td>Norms, values, and attitudes to learning and evidence use (the fit between new knowledge and these elements can predict willingness to adopt new knowledge (Jacobson et al., 2003; May &amp; Finch, 2009).)</td>
</tr>
<tr>
<td>Leadership support</td>
<td>Leadership is an important contextual consideration that can be enacted by formal leaders (see May &amp; Finch, 2009) or by opinion leaders (Rogers, 2003).</td>
<td></td>
</tr>
<tr>
<td>Social structuring of systems within and across institutions</td>
<td>Across organizations and levels (Lapaige, 2010) Calls for greater attention (Contandriopoulos et al., 2010 ; Holmes et al., 2016)</td>
<td></td>
</tr>
<tr>
<td>Evaluation practices:</td>
<td>Capacity to absorb and learn from evidence (Kitson et al., 1998; McCormack et al., 2002). Evaluation capacity as central to both the formative development of context specific knowledge and the ongoing building of a generalizable knowledge base (Kitson 2008; Kitson et al., 2008).</td>
<td></td>
</tr>
<tr>
<td>External / multilevel context:</td>
<td>History, timing, politics, institutional networks and their stability, resource availability, (Jacobson et al., 2003; Dobrow et al., 2004; Glasgow et al., 2012; Harvey &amp; Kitson 2016)</td>
<td></td>
</tr>
<tr>
<td>Cost sharing</td>
<td>Nature and degree of mutual investment between knowledge producers and users of knowledge Reliant on relationships and on the various resources, capacities, and incentives or motivations that they bring to knowledge translation (Crewe &amp; Young, 2003; Contandriopoulos et al., 2010)</td>
<td></td>
</tr>
<tr>
<td>Polarization among stakeholders</td>
<td>Knowledge may align with existing social or ideological divisions to polarize constituents depending on the salience of different perceived consequences and value structures (Weiss, 1979; Wesselink &amp; Hoppe, 2011). Reflects the influence of history, alliances, dependencies and previous experience (Contandriopoulos et al., 2010)</td>
<td></td>
</tr>
</tbody>
</table>

Social structuring

The dimension of social structuring includes consideration of the institutions involved, their internal communication channels and leadership structures, and their norms and capacity in relation to the type of action suggested by knowledge translation. In an example relevant to the
case study, interventions in the pre-school years are managed by numerous non-government organizations and through public organizations at several levels of governance across ministerial jurisdictions. In contrast, where interventions are intended to be school based, longstanding organizational connections and stability that is relatively assured through well-paid jobs and career structures provides a contrasting institutional structure.

Cost sharing

The core concept of cost sharing is mutuality of contribution to the production, exchange and implementation of knowledge between knowledge producers and users. It implies shared or complementary objectives. The dimension of cost sharing in knowledge production exchange and use is related to greater alignment between knowledge and its intended context of use which can be expected to contribute to the sustainability of implementations and to the level of commitment that can be expected. Cost sharing can involve shared inputs of different kinds. For example a potential user of information such as a government department can invest by providing funds for research relevant to their practice while researchers invest their time and expertise. Sharing can also be through mutual investment of time and expertise on the part of researchers and potential users as occurs where practitioners are active in the research itself or where potential users participate in data collection and interpretation.

Polarization

Although always connected with values, some priorities for intervention and public investment are more widely shared than others. For example, knowledge translation to promote high-level policy action in the first years of life faces challenges of ideological polarization. Public investment to reach out to materially support families in caring for their young children or providing accessible services to ensure universal access to safe and nourishing environments in
the first years of life has historically been contested by those who prefer to leave raising children to families (Powell, 2014). The thrust of much of the evidence-informed argument (worldwide) for policy action to support proportionate universality of services and supports in early childhood has often invoked ideas of social justice. Irrespective of evidence that shows that inequities are associated with poor population health outcomes, the evidence can be associated with an ideological divide that leads people, including decision makers and researchers, to choose a direction: guide societies to take responsibility for reducing inequities and the harm they cause, or accept inequities as a given and leave families of children born into less than ideal environments to work within their reduced capacities and to accept poorer life chances for their children.

In contrast, the role of the state of educating children to be good citizens and productive members of society (through publicly-funded schools) appears to be much less contested than investment to support universally available programs and investment in improving early-life developmental environments in the family home.
## Appendix B Interview Guide

<table>
<thead>
<tr>
<th>Interview Guide</th>
<th>60 min.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Snowball sampling,</strong> Continue until saturation in relation to the questions posed</td>
<td>Participants selected initially on the basis of participation in the planning of selected knowledge translation “initiative” at HELP and subsequently by snowball sampling. (the same recruitment information and information and consent forms to be provided for all participants)</td>
</tr>
<tr>
<td><strong>Interviewer</strong> Graham Shaw</td>
<td><strong>Purpose:</strong> following analysis of documents</td>
</tr>
<tr>
<td><strong>2.5 min welcome overview confirm permission</strong></td>
<td><strong>Purpose:</strong> to describe the processes of planning and execution of the initiatives with particular attention to how the knowledge translation planning and facilitation were influenced by awareness of the policy-making process and factors affecting the likelihood of policy influence. Attention will be directed to specific elements of the context and the knowledge being translated</td>
</tr>
<tr>
<td><strong>Introduce (Graham)</strong> Thank you for participating in this research. Graham is conducting research into knowledge translation and specifically aiming to learn from the experience of people involved in promoting policy use of knowledge to improve outcomes for children and families. The aim of the research is to: Increase understanding about whether and how knowledge translation planning can benefit from an understanding of what is going on in the policy environment where knowledge may inform policy and the factors likely to influence the success of knowledge translation. In this interview, the objective is to explore the factors that have influenced the planning and execution of [name of initiative] and how these factors shaped the emphasis on different approaches to using knowledge to influence policy. During this session I’ll start with some open-ended questions and will invite you to elaborate on points as we go. Thank you for coming along and for your willingness to share from your experience. Before we begin, I am confirming that you have provided your written consent to participate in this research, particularly about the audio recording of the session and the intended use of the data that you provide. Do you have any questions? (****start audio now)</td>
<td><strong>Audio recording</strong> Signed permission</td>
</tr>
</tbody>
</table>
Describe the boundaries of what is being called an “initiative” for the purposes of the research. Note observations about the types of use (discussed in focus groups) that appear to be targeted in the initiative.

<table>
<thead>
<tr>
<th>Question 1. What are the factors that contributed to the way that this knowledge translation initiative was designed and conducted?</th>
<th>Prompts to stimulate reflection or to elaborate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prompt: Do you remember any planning meetings or discussions where options were considered? Rejected outright? Considered for how they may work together?</td>
<td>Listen and record.</td>
</tr>
</tbody>
</table>

| Question 2. What appeared to be most important considerations during the planning stages? | Listen and record |
| Prompts (as option categories if needed) | Prompts to stimulate reflection or to elaborate |
| The intended action |  |
| The target audience |  |
| Elements of the policy development cycle or context |  |
| The message design |  |
| The nature of the knowledge being translated |  |

| Question 3. How much did you think about the (potentially extended) process of developing policy in relation to this initiative? | Listen and record |
| Prompt: | Prompts to stimulate reflection or to elaborate |
| What opportunities did you see for knowledge or evidence to influence the development of policy in useful ways (for children and families)? |  |
| With the benefit of hindsight do you see more? |  |
| What constraints limited your ability to do what you believed would be most valuable for the developmental health of children? |  |

| Question 4. How would you describe the evidence or knowledge that was the focus of the knowledge translation? | Listen and record |
| Prompts as needed: | Prompts to stimulate reflection or to elaborate |
| What was the “product” or “thing” being translated? |  |
| How did you imagine that the knowledge would lead to action? TOC, Perceived motivators, Accountabilities, Constraints. |  |
| You may have been promoting the use of data, ideas, or arguments using a synthesis of multiple studies and knowledge of community needs and resources. You may have had solid quantitative evidence that could predict results. |  |
| To the way that the messages were designed? |  |
**Question 4.** How much attention did you give to thinking about different elements or factors that might affect knowledge translation?

Prompts (check off as addressed):
- Available networks or channels of communication?
- Established relationships?
- Institutional partnerships or trust?
- Communication theory?
- The receptivity of different audiences/stakeholders?
- Contestation and the amount of influence of different stakeholders?
- Stakeholders: Who is in favor or opposed and who has the power to make the change required on the basis of the evidence?
- Institutional inertia?
- The perceived need for new/additional knowledge or information
- Available “Narratives”
- Incentives and accountabilities

**Question 5.** How successful would you say the knowledge translation has been?

Prompt:
- What are your metrics for success? Have you seen evidence of success according to these metrics?
- What are your criteria for success in knowledge translation?
- What do you think influenced the success/failure?
- With the benefit of hindsight, are there other strategies that may have been more effective?
- What makes you think that the use of different or multiple approaches may have been worthwhile?

Ask for referrals to informants who can report on the planning or outcomes of the specific knowledge translation initiative

Provide recruitment information and consent materials for sharing with others. Include contact details and an ask them to invite potential informants to make contact in order to participate.

Offer opportunity to review transcript in person at the end of the interview

Send thank you email after the interview group with an invitation to add any thoughts.
Appendix C: Text of recruitment email

Thus email can also be forwarded by participants to others as part of the process of snowball sampling.

[Interview participants]

Dear ________

I am pleased to invite you to participate in an interview to discuss your experience with a knowledge translation initiative at HELP [identify initiative]. You are invited because of your participation in the [identify the specific initiative] knowledge translation initiative. The research being conducted is toward a PhD dissertation by Graham Shaw in the School of Population and Public Health at UBC under the supervision of Dr. Chris Lovato.

The research is investigating the way that knowledge translation in this initiative was designed or modified [include examples of how it was conducted or modified] in response to understandings of what was needed or could work to influence policy in ways supported by research. This interview will invite you to share your experience and reflections on the knowledge translation planning and execution and on your perceptions of the success of the chosen approaches enabled. The interview will follow a semi-structured format.

Time: The interview is designed to take up to sixty minutes.

Participation is voluntary. You are under no obligation to participate and may withdraw from participation at any time without penalty.

If you are interested in participating in this interview, please respond to Graham Shaw and indicate any preferred way of being contacted. I will forward further information in response to any queries, a consent form. If you are happy to participate, please suggest possible times that you may be available.

Thank you for considering participation in this research and please feel free to call or email to ask any questions.

Graham Shaw
PhD Candidate UBC

***********
Appendix D  Interview consent form

PhD study: Context-informed knowledge translation planning

Principal Investigator: Dr. Chris Lovato, PhD, Professor, School of Population and Public Health, UBC (Email: ***********)

Co-Investigator: Graham Shaw, PhD candidate SPPH

The information and consent form provided here, is one part of the process of informed consent. It provides a description of what the research is about and what your participation will involve. If you would like more detail about something mentioned here or if you have any questions about the research, please feel free to ask. Please take the time to read this carefully.

**Background and Purpose of the Study:**

Knowledge translation is an important part of using evidence to improve health. HELP has been active and effective in knowledge translation for more than a decade and has been selected as a case study to examine ways that knowledge translation approaches are selected from a wide array of possible options.

This study seeks to understand how practitioners are guided to specific approaches by their understanding of what is going on in the policy making process. One aim of the study is to identify specific factors that can help guide the selection of effective approaches. Findings will be valuable to others who may face similar challenges by helping them to select approaches to knowledge translation with the greatest prospect of success.

The purpose of the study interviews is to gather detailed information about the planning and implementation of a specific knowledge translation initiative. You will be invited to share your own experience and understanding of what was done and to reflect on the underlying rationale. The interview protocol is designed to explore actions that were taken in the specific initiative and to invite your consideration of the way that choices (of approach and emphasis) may have influenced outcomes.

**Study Procedures:**

The interview will be conducted at HELP or over the phone or video conference. You will be asked a series of questions and invited to reflect on your experiences. The interview will be recorded, transcribed and then analyzed thematically using NVivo software. You will have the opportunity to review the transcript of the interview to confirm that it accurately represents your comments and point of view.

**Confidentiality:**

Anything said in the discussion will be held in confidence with the moderator Alexander (Graham) Shaw (PhD student), the principal investigator and members of the dissertation committee (Drs Sam Sheps and Chris Lovato). Since he is a colleague at HELP, Dr Kershaw (who is also a committee member) will not have access to the transcript. No one other than the moderator, principal investigator or the dissertation committee will be informed about your
choice to participate. The digital audio files and transcriptions will be de-identified in
transcription and filed by a coded filename and kept as password-protected files on the password
protected UBC Workspace. All computers used in working with the data are password protected
and only the PhD student and the members of the dissertation committee working with the data
will have access to this data. The data will be kept for a minimum of 5 years according to UBC
policy. No report or published paper resulting from this research will identify participants by
name, role or title.

Risks and Benefits:

Confidentiality precautions have been outlined above. You will be welcome to move
around or stretch at any time if you experience discomfort from prolonged sitting. This research
should not lead to any adverse consequences for you beyond your contribution of time to the
process.

You may benefit from this opportunity to reflect on the way in which your organization
maximizes its effectiveness with knowledge translation You will have the opportunity to discuss
the research in further detail following the completion of data collection and analysis. These data
have potential to guide future knowledge translation by HELP and other organizations who seek
to improve population health based on an improved understanding of the factors that can be
analyzed to help select promising approaches and targets for knowledge translation.

Conflict of Interest Statement:

A potential conflict of interest could emerge if Dr. Kershaw (as a member of HELP) had
access to the raw data. This could (potentially) influence what people are willing to share. For
this reason, he will not be given access to the raw data collected in this study

Funding:

This study is not funded

Questions or Concerns:

At the time of the interview, the moderator (Graham Shaw) will answer any questions
you may have before proceeding. Before or afterward, should you have any questions concerning
matters related to this research or if you would like to obtain a copy of the progress reports/final
report of this research, please contact the PhD candidate Graham Shaw at [redacted], or the
Principle Investigator Dr. Chris Lovato via email [redacted].

If you have any concerns or complaints about your rights as a research participant and/or
your experiences while participating in this study, contact the Research Participant Complaint
Line in the UBC Office of Research Ethics at [redacted] or if long distance e-mail
RSIL@ors.ubc.ca or call toll free [redacted].

Consent:

Your participation in this study is entirely voluntary and you may refuse to participate or
withdraw from the study at any time without penalty. If you feel uncomfortable with the nature
of the questions or feel any discomfort, please inform the interviewer. If at any time you do not
want to continue with the interview, you have authority to withdraw immediately.

Your signature on this form indicates that you have understood to your satisfaction the
information regarding participation in the research project and agree to participate as a subject.
Also, you acknowledge that you have received a copy of this consent form. In no way does this waive your legal rights nor release the investigators, sponsors, or involved institutions from their legal and professional responsibilities.

Participant's Signature    Date

Printed Name of the Participant signing above

Investigator and/or Delegate's Signature    Date

Printed Name of Investigator and/or Delegate signing above
Appendix E Participant codes, perspectives and roles

The following Table 35 lists the participants in interviews and indicates which cases they provided data for and roles they played in the knowledge translation.

<table>
<thead>
<tr>
<th>Table 35 Participants</th>
<th>Interview code</th>
<th>Organizational case data</th>
<th>EDI case data</th>
<th>MDI case data</th>
<th>Role/s</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EDI 1</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td>Researcher</td>
</tr>
<tr>
<td></td>
<td>EDI 2</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td>Researcher, Intermediary</td>
</tr>
<tr>
<td></td>
<td>EDI 3</td>
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<td>✔</td>
<td>✔</td>
<td>Researcher</td>
</tr>
<tr>
<td></td>
<td>EDI 4</td>
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<td>✔</td>
<td>✔</td>
<td>HELP knowledge worker</td>
</tr>
<tr>
<td></td>
<td>EDI 5</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td>Researcher, Community and Government (Departmental level)</td>
</tr>
<tr>
<td></td>
<td>EDI 6</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td>Researcher</td>
</tr>
<tr>
<td></td>
<td>EDI 7</td>
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<td>✔</td>
<td></td>
<td>Researcher</td>
</tr>
<tr>
<td></td>
<td>EDI 8</td>
<td>✔</td>
<td></td>
<td></td>
<td>Government (Departmental level)</td>
</tr>
<tr>
<td></td>
<td>EDI 9</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td>Government and Non government service provision</td>
</tr>
<tr>
<td></td>
<td>EDI 10</td>
<td>✔</td>
<td></td>
<td></td>
<td>National service organization</td>
</tr>
<tr>
<td></td>
<td>EDI 11</td>
<td>✔</td>
<td></td>
<td></td>
<td>Provincial Government</td>
</tr>
<tr>
<td></td>
<td>EDI 12</td>
<td>✔</td>
<td></td>
<td></td>
<td>Researcher, Intermediary, Non Government Organization</td>
</tr>
<tr>
<td></td>
<td>EDI 13</td>
<td></td>
<td></td>
<td></td>
<td>Intermediary</td>
</tr>
<tr>
<td></td>
<td>EDI 14</td>
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<td></td>
<td></td>
<td>Community</td>
</tr>
<tr>
<td></td>
<td>EDI 15</td>
<td>✔</td>
<td></td>
<td></td>
<td>Provincial government</td>
</tr>
<tr>
<td></td>
<td>EDI 16</td>
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<td></td>
<td></td>
<td>Intermediary, Service provision Consultant</td>
</tr>
<tr>
<td></td>
<td>EDI 17</td>
<td>✔</td>
<td></td>
<td></td>
<td>Government (Departmental level)</td>
</tr>
<tr>
<td></td>
<td>EDI 18</td>
<td></td>
<td></td>
<td></td>
<td>Intermediary, Service Provision Provincial Government</td>
</tr>
<tr>
<td>MDI 1</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>HELP Staff</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>MDI 2</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>HELP Knowledge worker</td>
<td></td>
</tr>
<tr>
<td>MDI 3</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>Researcher Help Staff</td>
<td></td>
</tr>
<tr>
<td>MDI 4</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td>Researcher Intermediary</td>
<td></td>
</tr>
<tr>
<td>MDI 5</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>Community service provision Intermediary</td>
<td></td>
</tr>
<tr>
<td>MDI 6</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td>Government (Departmental Level, Provincial level)</td>
<td></td>
</tr>
<tr>
<td>MDI 7</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>Service Provision Regional</td>
<td></td>
</tr>
<tr>
<td>MDI 8</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td>Service provision Regional</td>
<td></td>
</tr>
<tr>
<td>MDI 9</td>
<td></td>
<td>✔</td>
<td></td>
<td>Service Provision</td>
<td></td>
</tr>
<tr>
<td>MDI 10</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td>Consultant Intermediary</td>
<td></td>
</tr>
<tr>
<td>MDI 11</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td>HELP Knowledge worker</td>
<td></td>
</tr>
</tbody>
</table>
Appendix F Document analysis

When the corpus was assembled, a systematic strategy was used to identify a sample of messages that proposed or implied action proposals on the basis of evidence. Understanding the implications of the research from the perspective of researchers at HELP was a useful first step in exploring knowledge translation priorities. The analysis of documents also allowed consideration of the ways in which action was being promoted through publication (relevant to research question 1).

The messages represent knowledge products for translation. Messages also identify targets for the action (potential users) that authors proposed on the basis of their studies. As discussed in the introduction and literature review, characteristics of context are not inherently fixed but they can be defined by how they interact with specific knowledge products – how the knowledge “fits” and can be expected to be received in the context. By recognizing that messages often inferred or described intended situations for their use, knowledge and context could be considered from the perspective of the potential fit between them and how that might also infer the use of specific approaches In general, publications are practicing dissemination but if they are speaking about the need for process focused or political approaches to promote specific messages in specific situations, the document analysis adds evidence about associations between knowledge-context configurations and the use of approaches (research question 2).

A mechanized search strategy was used drawing from pragmatic linguistic methods (Vihla, 1999) allowing a systematic and efficient search strategy to identify messages and their implications without requiring a full reading of the large corpus that was assembled. Using the query capacity of NVivo, a search string was designed to search for language features that
identified recommendations or action proposals by the use of prescriptive or normative language features. This method reveals a substantial and replicable list of recurring message themes while also providing some information about the intended audience of messages (articles, reports and media) and in some cases, the theory of change. Because the procedure for identifying messages is automated and has clear criteria for coding, the procedure is replicable and counts can reasonably be interpreted as an indication of what authors concluded are important actions suggested by their research. The frequency of identifying prominent action messages in the corpus is reported in the findings.

**Document analysis procedure**

Document analysis began with a read-through of a number of articles (10) and reports (7) to get a sense of the language features most strongly associated with actionable messages. Several text search trials were conducted using NVivo 10 (NVivo, 2012) and revealed that many messages were identified by one or more key terms and their variants. A relatively parsimonious string of search terms was selected on the basis of how it revealed additional messages promoting action. The final string of search terms that was retained and used in the analysis was:

Should* must need* require* necessary funding resource allocation policy strateg* impli* recommend* effective* crucial compelling

This search string identified messages and the text proximal to the search terms often shed some light on the approaches being used in knowledge translation. The search string includes terms that relate to two separate search strategies. The first relies on linguistic analysis and the use of deontic modal terms that imply a prescription or directive based on stated or normative assumptions of what is the right or expected thing to do (Vihla, 1999). Should, must, and requires, are primary examples of words that are frequently found in proximity with
directives or prescriptions for action and these terms were a primary tool in systematically identifying messages from the large corpus of documentation. Statements using these terms rely on explicit or (more often) implicit pressure to comply with a social expectation or ethical norm and assume that readers will not question the underlying values base used to compel the action or choice. Other terms that were tested included ought, obliged, “need/s to”, necessary, “call to action”, offers guidance, “what to do”, implies, require/s. These terms indicate appraisal patterns that clearly value one action over others (again on the basis of either explicit or assumed values or criteria (Stibbe, 2015). Compelling, crucial, necessary, effective, optimum, and solution, are examples of terms tested in coming up with the final search string. Negatives were also investigated such as “definitely not, unnecessary, counterproductive, avoided at all costs” but these were not found to identify many messages and were dropped from the final string.

The second strategy was to search for words that would identify messages specifically targeting types of action of primary interest in relation to collective action in the form of resource allocation or policy development. With this strategy, outcomes of interest were included as search terms. This more direct approach was the reason for the inclusion of “resource allocation, strategy, and policy” as search terms.

Exclusion criteria for coding of identified text in the corpus

Text identified by the search string did not always identify an action target and text was not coded in these situations. Vihla, (1999) describes the various linguistic forms that are associated with the use of modal expressions and only some of them are used to motivate action. This level of detail is not included here except to say that it was only if an action was being promoted that it was coded into a message theme (type of action proposed) and where applicable, also coded into a theme indicating an implied or explicit suggestion about how the knowledge
could lead to action. Messages that also implied or provided a theory of change or type of use were a subset of the larger collection of messages. Text that provided evidence of action taken subsequent to HELP publication or explicitly attributed (by citation or temporal association and plausibility) to HELP knowledge translation was also coded.

The objective of coding published documents was to begin to understand the messaging priorities of HELP, to gather preliminary evidence about the use of knowledge translation strategies, and to catalogue evidence that might be used later to validate claims made by informants of the effect of HELP knowledge translation in promoting or contributing to the action recommended or suggested.
Appendix G Modifying the apriori template to establish the HELP template

The HELP template was developed from an *apriori* template through analysis and coding of data (using template analysis, King, 2012). It is therefore informative to report the extent to which the *apriori* template fit the data and to report on the changes made during the analysis procedure. Recall that the template analysis used refines the *apriori* template on the basis of data until the modified template accurately reflects the data while retaining relevant sensitizing concepts from the literature review.

In general, the *apriori* categories worked well for coding. The largest difference between the *apriori* template and the developed template is in the arrangement of the hierarchy. The process and political/strategic categories that were originally second level distinctions in the *apriori* template were developed in the HELP template and, based on the conceptual distinctions they represent, were moved up alongside exchange or transfer at the highest level. Sub categories that appeared meaningful at HELP were arranged or added at lower levels in the hierarchy. The changes were made to make coding easier and more logical and so that the final template accurately represented the data collected and analyzed.

Changes to the hierarchy

The move away from a high-level distinction between direct and indirect uses in the *apriori* template was a response to difficulty experienced coding segments of text to the *apriori* template. In template analysis it is expected that the *apriori* template will be modified to more comfortably fit the data (King 2012). In the literature, instrumental use is often described as direct use and is distinguished from conceptual and political uses which are by definition indirect or less direct (e.g. Davies, Nutley & Walter, 2008; Schwandt, 2009). The idea of “direct” or
instrumental use implies that the intended end use of the knowledge will be made clear through the knowledge translation and the action taken will apply the proposed solution (Weiss, 1979).

Indirect use was initially included in the *apriori* template based on a recognition that many recommended approaches engage users in knowledge building processes or rely on intermediaries such as brokers (van De Ven & Johnson, 2006; Ward House & Hamer, 2009; Harvey & Kitson, 2015; Fafard & Hoffman, 2020). Conceptual use was included under the indirect category in the *apriori* template because it may not point to a specific end use. Rather, it starts a process that may lead to effective use of knowledge by sharing information that will alter thinking and discourses so that users are more likely to act in a way consistent with the knowledge (Weiss, 1979).

It is important for knowledge translation to result in action that can impact health. However, when using interactive processes of co-production or promoting process or political uses of knowledge as described in the literature, several intermediate objectives may be necessary steps along a pathway toward eventual intended action and the intended eventual action may or may not be clear from the start of knowledge translation. Because instrumental action may or may not be an explicit end goal of indirect strategies it became difficult to use this criteria for discriminating between these approaches. This would require analysts to make a judgment about whether any stated objective in knowledge translation represented an end use of the knowledge.

An insight during coding was that elevating the second level headings to the top level solved the problem of deciding what differentiated an instrumental use from different forms of intermediate or collaboratively produced end uses. This effectively separated indirect approaches that were firmly based on exchange or transfer as the central pathway to use from indirect
approaches that used knowledge to achieve intermediate goals such as changing the capacity of systems to respond or changing the motivational factors that might increase the likelihood of action. After consultation with the research assistant and supervisor, the hierarchy was changed in the developing template to make it possible to code into themes that remained hierarchically consistent and conceptually distinct from one another. Following the changes, coding continued with fewer challenges. Differentiating between instrumental and conceptual use remained meaningful in relation to the immediate intent of research driven communication and so the distinction was retained at a lower level in the hierarchy.

Modifying political/argumentative heading to strategic focus

The heading Political/argumentative was renamed as strategic focus to be more inclusive of the various sub headings suggested by HELP data when knowledge was used as symbolic support or as ammunition in an argument. Weiss (1979) called this type of use “political” to illustrate that knowledge is often marshaled and used to support, legitimize or substantiate already determined purposes or positions (Weiss, 1979; Nutley et al., 2007; Boswell, 2009). Weiss makes a strong case that these types of uses have both positive and negative aspects and notes the potential for motivating beneficial action in the face of resistance (1982; 1991).

In coding the data, it became apparent that arguing for funding, gathering evidence to support a program, constructing alternative framings to make a message more acceptable or persuasive, advocating for investment to improve population health, and using knowledge in one on one persuasion for specific policy action can all be seen to represent variations of Weiss’ (1979) definition for political/ argumentative use. Engaging political support through third parties is similarly focused on providing support for action that is clearly strategic while not necessarily argumentative. For example, building a coalition to change incentives on policy
networks may rely on attracting those most likely to agree with the conclusions of researchers about what direction is called for (e.g. Sabatier, 1987). In my view, the diversity of data that fit logically under a heading of strategic focus were not well summarized by the Political/argumentative heading. The heading of strategic focus recognizes that the approach uses values, alliances and awareness of incentives as well as communication of knowledge and so it is tentatively proposed as a more inclusive alternative.
Appendix H Results supporting apriori categorization of knowledge and context at HELP.

This section of findings is presented here to substantiate the extent to which case study data support the classifications of knowledge and context proposed for the *apriori* template used to operationalize characteristics of knowledge and context. Data largely supported the headings used in describing knowledge characteristics. The headings for context were found to encompass variations and distinctions within the high level headings initially proposed.

**Knowledge**

Characteristics of knowledge discussed in interviews included four criteria expected to be potentially helpful in identifying likely challenges for knowledge translation:

- The degree to which the knowledge products are problem knowledge or solution knowledge
- The degree of alignment or misalignment with existing or status quo practices, norms, and power structures
- As a sub category of alignment with existing contexts of use, the size of new investment and infrastructure required to use the knowledge
- The extent to which knowledge of effective interventions has been demonstrated to be widely generalizable or to require synthesis with other information to direct action

Two data sources speak to the consideration of knowledge products at HELP: interview data and published articles and reports.

Interview participants emphasized knowledge that is a product of interactive processes, syntheses, and coproduction. These processes incorporate data with research evidence about potential solutions and context-embedded understandings of the capacities and motivations of potential knowledge users. Interview data emphasized interactive and relationship based strategies as those most compatible with the culture at HELP.

In something of a contrast, published articles and reports show a stronger focus on recommendations or prescriptions that are a product of expert synthesis and that often promote
quite specific direction for action. Given the one-way and less context-bound aspect of publication as a communication strategy, publications and reports were considered as a useful source for representing the type of action the researchers believed would be most effective on the basis of their studies.

Table 36 below provides quotes from interviews show how characteristics of knowledge were being highlighted in discussion of knowledge translation at HELP. The quotes illustrate how characteristics of knowledge (Column 2) can be identified in the quotes.

<table>
<thead>
<tr>
<th>Knowledge Heading</th>
<th>Characteristic of example</th>
<th>Sample quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge describes a problem or recommends a solution</td>
<td>Problem needing attention</td>
<td>... we built [HELP data] straight in there and distributed all through the province and encouraged the chief medical officers through outreaches to use the data and that’s been hugely helpful in increasing everybody’s knowledge and consciousness of the importance of early childhood development and connection to the determinants and so .. hugely helpful (EDI 11)</td>
</tr>
<tr>
<td>Recommendation challenges or aligns with status quo</td>
<td>Alignment with existing organizational structures and priorities</td>
<td>every school has the school plan which they work on annually... and most school plans have some sort of social and emotional goal ...which is what we’ve learned from our district contacts... so then the MDI really fits perfectly with that kind of goal (MDI 1).</td>
</tr>
<tr>
<td>Recommendation challenges or aligns with status quo</td>
<td>Challenge to status quo interests</td>
<td>in a country context like Canada ... we have to select knowledge mobilization theories of change that know that we are pushing against the status quo ....there will be real power dynamics about how we share those costs of investing differently.... and there will be a lot of polarization about whether or not that’s the right way to move forward because there are well-established entrenched interests that would want to retain the status quo (EDI 2).</td>
</tr>
<tr>
<td>Knowledge Heading</td>
<td>Characteristic of example</td>
<td>Sample quote</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Resource implications</td>
<td>Example of importance of resource implications</td>
<td><em>our work said ….excuse me…. we’re spending billions less than we should be on a younger demographic…. you need to find that money…. and that means either reallocating from other places …..and that has a lot of stakeholders pushing against it…. or raising taxes …and that has a lot of stakeholders raising questions about that (EDI 2)</em></td>
</tr>
<tr>
<td>Nature of synthesis to determine solution</td>
<td>Expert synthesis</td>
<td><em>As the evidence shows, it is time to develop a system of publicly funded, universal access to opportunities for development, learning and care for children from birth until school age (Hertzman, 2004, p.11).</em></td>
</tr>
<tr>
<td></td>
<td>Collective syntheses by practitioners</td>
<td><em>it gave them evidence …and a pathway …in the direction to do something different to change that … about the importance of kids being able to identify with an adult …about the importance of attachment … so then the district team in social and emotional learning saw how to make changes (MDI 6).</em></td>
</tr>
<tr>
<td></td>
<td>Including end users in synthesis</td>
<td><em>So what the theory is, is that students are being able to contribute to looking at the data and thinking about ways that they might want to take some school or classroom action to improve well-being and that would be obviously very worthwhile (MDI 1)</em></td>
</tr>
</tbody>
</table>

Knowledge for translation was also examined by using document analysis of a corpus of reports and peer-reviewed publications. Analysis identified 1079 messages promoting action. The automated search procedure is reported above. Messages recommending action were coded, grouped and counted using an inductive thematic analysis. The six most prominent messages are presented in as themes with illustrative quotes. The six message headings shown represent 1008 excerpts of text or 93% of the messages that were identified and coded through the replicable and automated search procedure. The table adds commentary to suggest how messages are associated with characteristics of knowledge and context.
<table>
<thead>
<tr>
<th>Message heading and sample quote</th>
<th>Knowledge characteristics</th>
<th>Implied context and characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multisectoral policy - beyond health alone – is needed to improve environments for child development (251 instances coded in corpus)</td>
<td>Expert synthesis Solutions proposed Recommendation challenge status quo through ideology (how much should the state intervene to support “low resource” families who are not providing suitable development environments for their children)</td>
<td>High level public policy context for resource allocation and policy departmental provincial and federal level budgets Large resource implications Polarization and contestation can be expected.</td>
</tr>
<tr>
<td>[A] review of family policies across countries identified five domains that make a difference: income transfers (cash and tax benefits), employment policies, parental leave and other policies to support maternal employment, early childhood education and care services, and prevention and other interventions related to teen pregnancy... At the regional level, factors that support or undermine family capacity include the physical environment (e.g., transportation, local accessibility of programs and services, family friendliness of housing market), the degree to which the labour market accommodates families’ needs for income and time flexibility, and the policy priority placed on investments in the early years. Absent these resources, children born into low-resource families are more likely to be exposed to conditions that are adverse for development, such as homelessness, crowding, slum living conditions, and unsafe neighbourhoods (Hertzman &amp; Siddiqi, 2013, p. 300).</td>
<td>Reliance on a body of evidence shows that the recommendation comes from expert synthesis. Proposed solution are stated for high level policy contexts. Solution challenges status quo by asking for resources to address disparities in development associated with inequities. Calls for large investment</td>
<td>High level policy context for resource allocation and policy involving elected and leaders with departmental, provincial and federal budgets Large resource implications and the nature of recommendations mean that polarization and contestation can be expected. Low capacity for delivery Due to high costs is a potential barrier for implementation</td>
</tr>
<tr>
<td>Increased investment in universal access to childcare and early education (211 instances coded in corpus)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A universal access system would involve reversing the trend towards economically segregated neighbourhoods by spreading lower cost housing opportunities across town; addressing the barriers to neighbourhood access to the full range of information, supports and services that could improve early child development; helping to build increased neighbourhood cohesion on behalf of children; and, finally, addressing the funding issues (Hertzman, 2004, p.11).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Message heading and sample quote</td>
<td>Knowledge characteristics</td>
<td>Implied context and characteristics</td>
</tr>
<tr>
<td>----------------------------------</td>
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</tr>
<tr>
<td><strong>Reduce poverty and inequities</strong>&lt;br&gt;(206 instances coded)&lt;br&gt;The principal objective of bringing the issue of early child development into the public realm should be to reduce this [SES] gradient&lt;br&gt;(Hertzman et al, 2003, p.12).</td>
<td>Reliance on a body of evidence shows that the recommendation comes from expert synthesis. Proposed solutions are stated for high level policy contexts. Solution challenges status quo by asking for resources to address disparities in development associated with inequities. Calls for large investment.</td>
<td>High level policy context for resource allocation and policy involving elected and appointed leaders with departmental, provincial and federal budgets. Large resource implications and the nature of recommendations mean that polarization and contestation can be expected. Low capacity for delivery. Due to high costs is a potential barrier for implementation.</td>
</tr>
<tr>
<td><strong>Increased collaboration between service delivery institutions is needed</strong>&lt;br&gt;(199 instances coded)&lt;br&gt;*we have no mechanisms to make sure that early child development does not ‘fall through the cracks’ as an inter-sectoral issue that belongs to everyone and no-one at the same time&lt;br&gt;(Hertzman et al., 2003, p.35)</td>
<td>The knowledge identifies a problem as an absence of delivery capacity. Responsibility for this problem can apply to service delivery organizations, community networks or high level governance.</td>
<td>For contexts of service delivery organizations the key issue is absence of capacity. High-level policy has some capacity to act if they are motivated to allocate resources and build infrastructure.</td>
</tr>
<tr>
<td><strong>Message heading</strong>&lt;br&gt;Programs or modified practices coordinated by the education system&lt;br&gt;(78 instances coded in corpus)&lt;br&gt;<strong>In fact, school- and classroom-based interventions targeted at improving social and emotional learning (SEL) have been identified as a fundamental and effective way to cultivate social and emotional skills, well-being, and ultimately to improve academic achievement in childhood and adolescence</strong>&lt;br&gt;(Oberle et al., 2014)</td>
<td>Solution knowledge showing Alignment with education objective “to improve academic achievement”</td>
<td>Implies capacity for delivery in single institution context.</td>
</tr>
<tr>
<td>Message heading and sample quote continued</td>
<td>Knowledge characteristics</td>
<td>Implied context and characteristics</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Programs should employ the principle of proportionate universality (63 instances coded in corpus)</td>
<td>Reliance on a body of evidence shows that the recommendation comes from expert synthesis.</td>
<td>High level policy context for resource allocation and policy involving elected and appointed leaders with departmental provincial and federal budgets</td>
</tr>
<tr>
<td><em>Improving the state of early child development involves finding ways to create access to the conditions for healthy child development across the entire socioeconomic spectrum, including those children living in poverty</em> (Hertzman &amp; Bertrand, 2007, p.2)</td>
<td>Proposed solutions are stated for high level policy contexts. Solution challenges status quo by asking for resources to address disparities in development associated with inequities. Calls for large investment</td>
<td>Large resource implications and the nature of recommendations mean that polarization and contestation can be expected. Low capacity for delivery Due to high costs is a potential barrier for implementation</td>
</tr>
</tbody>
</table>

Data above shows that a large proportion of the messaging in publications recommends action that requires resource allocation and public policy development. Four out of these six message headings (74% of coded messages) can therefore expect to be discussed and debated in contested and politicized contexts. The two messages that do not inherently challenge ideologies or status quo structures are:

1. The need to increase collaboration between existing service delivery organizations and
2. The value of action by the education system, which has access to children and the capacity for low cost action within an existing infrastructure. I point this out to highlight that most of the recommended calls to action (as indicated by counts of messages), are beyond the capacity of existing service institutions to implement within their budgets.

This section about knowledge is presented to illustrate two key points. The first is that the characteristics of knowledge described in the literature and included here as criteria for consideration appear to be considered relevant to knowledge translation practitioners in the case
study. The second point is that most messages infer one or more contexts for application that carry implications about how knowledge will likely be received in these contexts.

Context

Contandriopoulos et al.’s (2010) framework suggested three dimensions of context: social structuring, cost sharing and polarization. Contandriopoulos et al. (2010) found that these dimensions offered identifiable categories for context that suggested different kinds of evidence. These criteria were found to work quite well for coding of HELP data. The interdependence between knowledge and context when defining these dimensions means that, ultimately, context as the term is being used here, must be understood with reference to the knowledge being translated. Configurations of knowledge and context are of greater interest than are fixed characteristics of either.

Contexts for knowledge translation at HELP

HELP knowledge translation occurs across a range of contexts. This contextual diversity makes HELP particularly useful as a case study. One of the tools that HELP uses in disseminating ideas and information is a model (adapted from Bronfenbrenner, 1979; 2005) that shows how influences on child development and welfare exist in many contexts: at multiple levels and in different systems.

We use the ecological systems theory, developed by Urie Bronfenbrenner, as a conceptual foundation for our Human Development Program of Research (HDPR). This model explains how everything in a child and the child’s environment affects how they grow and develop (HELP Strategic Plan (2019).

HELP partners make a point of recognizing the importance of different ecological levels and the prospects for using evidence and information at each. To those familiar with them, each ecological level implies different contextual characteristics that are associated with opportunities
and constraints to knowledge translation. The model below illustrates how HELP knowledge translation can work in different contexts or systems at different levels.

**Figure 3 Multiple contexts for knowledge translation of HELP knowledge products**

As the Bronfenbrenner model suggests, high level policy makers working at the level of provincial governance are positioned to act in different ways than are service providers in single institutions.

**Coding context**

Context is coded under three primary dimensions: social structuring, cost sharing and polarization. These are discussed in turn below and data included as examples of how these concepts were seen in coded text.

**Social structuring**

Characteristics of social structuring can be determined to some extent by examining settings independent of considering knowledge. However, networks, systems and institutions are attuned to specific functions and priorities and represent identifiable interests and values. As a result, these contexts can be expected to be more or less receptive to specific knowledge based
on the alignment or fit between recommended action, capacity for implementation, and the values orientation and mandates in contexts of use (see Table 38).

### Table 38 Social Structuring as a dimension of context with sample quotes

<table>
<thead>
<tr>
<th>Context dimension</th>
<th>Second level distinction</th>
<th>Distinctions at a lower level</th>
<th>Sample quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social structuring</td>
<td>Single institution or organization</td>
<td>Norms as constraint</td>
<td><em>any large organization I think ...personal opinion ...has a tendency to create programs or implement policies in areas that it understands the best... right? (EDI 15)</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mandates as constraint</td>
<td><em>this work ... this contract, is about capacity for service providers. So the goal here is giving service providers tools and opportunities to do and try different things ... it’s less about parents. (EDI 16)</em></td>
</tr>
<tr>
<td></td>
<td>Infrastructure as enabler</td>
<td></td>
<td><em>One of the things about the MDI that’s helped the most is that its superintendent to superintendent ... school person to school person ... so although I’ll do the presentations and can get people interested in the MDI ... that ... I believe that the influence has been from this superintendent talking to this superintendent and saying yes we are doing that ... [Name] from Port Alberni saying “We’re using it in this whole well-being framework” those things make have more influence ... than me as a scientist can come in and say here’s all the research ... (MDI 4)</em></td>
</tr>
<tr>
<td></td>
<td>Capacity (skills, infrastructure and resources) (constraint for some knowledge and enabler of other knowledge)</td>
<td></td>
<td><em>I mean you give this information to a public health nurse and they’re going to think about some very particular things that make sense to them ....you know....they mean ... and you can talk to a child development center person about your results and they’re going to think about something different.... (EDI 1)</em></td>
</tr>
</tbody>
</table>

*Schools have always had a breadth of infrastructure and resource capacity that the early childhood world doesn’t always have. (EDI 5)*
<table>
<thead>
<tr>
<th>Context dimensions continued</th>
<th>Second level distinction</th>
<th>Distinctions at a lower level</th>
<th>Sample quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple institution settings/systems</td>
<td>Vertical and horizontal Coordination/levels of governance</td>
<td>unless you get change at every level there are really good examples of places that have done very well within their own realm but are constantly stymied by government licensing and larger policy frameworks that mean they can’t move beyond where they want to get to…(EDI 4)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>there’s various levels of governance within institutions as well as provincial and federal and then down to community level where you’re mixing a number of institutions and networks (EDI 1)</td>
<td></td>
</tr>
<tr>
<td>Capacity (infrastructure, and resources)</td>
<td></td>
<td>the model we’re using is based on some work that’s been done by people like Peter Senge and others who are now really trying to focus their efforts in the education system…. they’re taking the same approach….. and just within that one system…. and even that is a challenging thing. But for us to take it and then try to work with it in an early child development world… because is not a system at all…. (EDI 5)</td>
<td></td>
</tr>
<tr>
<td>Resource competition</td>
<td></td>
<td>I’m thinking of certain communities where I know that there is tension … and I know that there’s competition … there’s turf battles …(EDI 6)</td>
<td></td>
</tr>
</tbody>
</table>

**Cost sharing**

Cost sharing is evident and discussed at HELP in relation to coproduction of knowledge and investment in research and knowledge exchange. Cost sharing in implementation is less apparent since participating in the implementation of recommendations is not reported as a role for researchers or knowledge producers; researchers generally have little capacity to share the financial costs of implementation. Cost sharing is reported and expected to be facilitative of knowledge translation where potential users invest time, information, or resources to produce and implement knowledge they anticipate or hope will be useful to them. Where the knowledge produced is not what is hoped for or if the cost of implementation is beyond the capacity of potential users to deliver, the facilitative element of cost sharing appears less influential. An
example presented by an interview participant in Table 39 (below) suggested that government departments investing in HELP research were interested in low cost programmatic solutions but were less interested in promoting solutions that challenge social structures or that require new infrastructure or major investment.

**Table 39 Cost sharing as a dimension of context with sample quotes**

<table>
<thead>
<tr>
<th>Context dimensions</th>
<th>Second level distinctions at a second level</th>
<th>Distinctions at a lower level</th>
<th>Sample quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost sharing</td>
<td>In production</td>
<td></td>
<td><em>I don’t think we can understate just the achievement that government has invested in this monitoring system for over 15 years continually and it’s a huge investment. So that has to be counted as an achievement for sure. You know the full day kindergarten thing is definitely something that we pushed for at the time and felt positive about in terms about having some progress. There’s been all kinds of smaller policy initiatives... Welcome to Kindergarten the Strong Start initiative which is the early childhood program in schools where we informed that pretty significantly.</em> (EDI 5)</td>
</tr>
<tr>
<td></td>
<td>In knowledge exchange</td>
<td></td>
<td><em>we’ve had HELP come out and do the EDI 101 workshop as we call it.</em> (EDI 16)</td>
</tr>
</tbody>
</table>

**Polarization**

Polarization is another dimension of context that is defined in relation to the knowledge being introduced or translated (see Table 40). The same social and physical setting can be polarized in relation to one issue but not another. For example, data suggest that factions or groups may take opposing views about the state’s role in supporting disadvantaged families but may not continue to unite in their support or resistance to social emotional education in schools.
<table>
<thead>
<tr>
<th>Context dimensions</th>
<th>Second level distinction</th>
<th>Distinctions at a lower level</th>
<th>Sample quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polarization</td>
<td>Ideological</td>
<td></td>
<td><em>the whole “pull yourself up by your boot straps” sort of stuff. And then…. that’s why… to answer my own question… that I ask myself all the time. Why the research about the economic benefits has never really made an impact … on people because that knowledge in and of itself has not shifted what they believe…</em>(EDI 5)*</td>
</tr>
<tr>
<td></td>
<td>Priorities or competition affecting resource implications</td>
<td></td>
<td><em>here’s where I come back to complement both recent governments … that they’re trying to do the right thing … but not necessarily trying to do it while they’re alienating the fairly well-to-do older population that think that they’ve got a right to all these resources..</em>(EDI 8)*</td>
</tr>
</tbody>
</table>
Appendix I Data supporting the case differentiation that informed case selection

Data collected in interviews generally supported differences that informed case selection. Table 41 shows data supporting the assumptions used and shows how they overlooked the importance of levels of practice or governance within each case. Data suggest that different aspects of knowledge-context configurations were relevant at different levels of application within cases as well as across cases. For example, for service providers, the fragmented nature of the early childhood sector was emphasized but the polarization was not. Conversely, in governance, high levels have the capacity to direct coordinated action in the child services sector and so their capacity was less a consideration than motivation where polarization was a more relevant feature of the EDI knowledge-context configuration.

| Table 41 Data supporting case differentiations that informed case selection |
|-----------------------------|-----------------------------|-----------------------------|
| Provision of solution knowledge (Services setting) | Provision of solution knowledge (High level policy setting) | Comparison |
| **MDI** | **EDI** | **Comparison** |
| the genesis of the MDI was always about providing data that would be relevant ... that's going to help them make decisions ...tomorrow (MDI 4) | we would have these conversations particularly around the EDI and it was like this... is great, it's phenomenal insight... What do we do with it? How do we action it? (MDI 7) | the MDI... ... it's also the data itself.. While it's over whelming it's also very actionable ...whereas the EDI ... that's where a lot of people fall off ... because they ...how in the world are we going to influence this whole massive domain of development? (MDI 7) |
| we all felt pretty confident the number one messaging to government was "we're not investing enough" first and foremost ... (EDI 5) | | |

287
<table>
<thead>
<tr>
<th>Capacity issues in context (Services setting)</th>
<th>MDI</th>
<th>EDI</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Schools have always had a breadth of infrastructure and resource capacity that the early childhood world doesn’t always have.</strong> (EDI 5)</td>
<td><strong>How do I take this, which is an assessment - largely of the first five years of a child’s life... many factors...many inputs...largely out of our control. Kindergarten teachers... we...do this assessment...would get this information...would go wow...that’s interesting</strong> (MDI 7)</td>
<td>the big difference is not the design of the MDI... it’s the fact that kids are in school from nine till whenever...and they’re not in the early years...we don’t actually know where most of them are...no...it’s different institutional infrastructure...there is no sector... (EDI 4)</td>
<td></td>
</tr>
</tbody>
</table>

| Existence of networks for diffusion | the MDI has an institutional infrastructure that receives billions of dollars a year already in which to receive the information (EDI 2) | the early development instrument didn’t have a corresponding provincial infrastructure with billions of dollars of revenue on an annual basis with which to receive the information (EDI 2). |

| Polarization | okay ....here is a natural place to rally around. We all want our kids to be healthy ... and that’s the values ... and here’s the evidence ... how to do it ... and here are the players ... now let’s take them on **(EDI 7)** | ....we really don’t have as much power ....as much power as we need ....to be able to shift EDI ...it’s a whole different conversation....(EDI 2) |

The distinction between solution and problem knowledge was not seen between the cases in the ways expected. The MDI knowledge translation was expected to emphasize knowledge that suggests solutions more than does the EDI. However, data made it clear that direction provided by the MDI is largely built into the instrument itself. MDI knowledge translation therefore focused on encouraging interactive work to innovate context relevant ways of using the information. As indicated in Table 41 MDI users referred to evidence as “actionable”. Actionable evidence is a term used by participants to describe evidence that directs but does not necessarily prescribe solutions. It explicitly includes consideration of the fit between the knowledge and the capacities and priorities in contexts of application.
Data about the knowledge and context configurations of the EDI and the MDI support differences that informed the case selection in terms of the increased challenges fragmented service delivery context faced by the EDI. As the quotes in Table 41 show, EDI quotes reference challenges related to the capacity to implement knowledge. The MDI is noted to have the benefits of established lines of authority and communication.

The EDI was developed at least in part to highlight a problem at a societal scale. The MDI was developed with the education department and their priorities in mind. Children are in school for a large proportion of their waking hours. This makes schools and their capacities to intervene with children a logical setting for intervention and knowledge translation work.

The capacity of policy makers to act was noted as an issue but in a very different way from how capacity of service organizations is reported. Even where powerful actors have legitimate capacity to make decisions, they reported their own capacity as limited due to perceived political risks of taking action.

Case selection on the basis of polarization was supported but this varied across levels of intervention. Case selection was based on an understanding that recommendations arising from MDI knowledge would be less dependent on new investments or infrastructure and therefore less challenging to the status quo. With the EDI, polarization was expected to be a feature of the context for translation. Data showed that polarization was especially relevant to knowledge translation that promoted resource allocation and public policy. It was not raised as an issue in service delivery organizations or systems that appeared generally to be largely internally aligned in terms of how the data support values that place a priority on supporting childhood development.
The finding that the initial case definitions were not as straightforward as initially assumed means that the comparative analysis needed to recognize the level of intervention as well as which case was being discussed. Template comparisons allow this finer grained analysis.
Appendix J Slide presentation
Complex blend of Approaches
"there are layers and layers ... and layers... you have to work at those systems at every level ....It's like a stacked series of interventions..."

- Multi-level
- Multiple approaches
- Sequential

KT Approaches
1. Focus on knowledge transfer and exchange
2. Aim to increase system capacity and efficiency
3. Strategic: argue a case, or build support for specific policy, funding, or action

Preferred Approaches
Transfer and exchange
- Collaborate
- Empower
- Involve
- Consult
- Inform
Increase system capacity and efficiency

Inform
"in order to shift any kind of understanding...thinking... which then translates into potential policy...you have to be able to show people what's happening..."

"I called it a toolkit ... so that you get your MDI data you know how to use it ...."

Changing the Conversation
"at that time ... the discussion really was about whether we needed childcare ... more recently... it was about, what's the best way to approach it... that was a shift that I think was necessary"
Consult

"we engage with people so that we learn something from them about the context that we don’t know and we share with them what we’ve got… from that will emerge an understanding about what the next steps are”

Involve, Collaborate, Empower

"he used to sort of say… “What are the five things you need to do to change EDI outcomes?” None of them are programmatic… they were building relationships with school districts… building a more collective approach…”

“Champions”

"they’re the experts you know so it’s kind of this practice of …I feel like… of getting out of the way”

Knowledge Influence through Systems: Relationships and Networks

MDI: Community Sharing Networks

EDI: Community Sharing Networks
Obstacles...

Beyond Information Exchange

"It's not evidence based... to assume that these local groups can actually solve family poverty... and create quality affordable childcare on their own... they're not resourced to do that and they don't have the mandate to do that..."

"It might force us to make some societal changes... which we've got to do at some point if we're ever going to fully capitalize on the great work that the unit is doing."

Recap on KT Approaches

1. Focus on knowledge transfer and exchange
2. Work to increase system capacity
3. Strategic: argue a case, or build support for specific policy, funding, or action

Argue a Case or Build Support...

"I think when you look at HELP's historic role... the focus on knowledge translation definitely took that a step further... and is a large reason why there actually has been success in moving the dial."

Argue a Case: Insider, Expert Strategies

- Participate in policy discussions
- Make clear recommendations and suggestions
- Gather and present relevant information and evidence to support a position

Argue a Case: Outsider Strategies

"we are completely focused on 10 a day childcare... and we're mobilizing... so we go... we ramp up to the provincial election... we have... 20,000 individual supporters"
Combining Insider and Outsider Strategies: “Political Cover”

"how do we get the messaging ... really concise powerful messaging... out to the public so the public will support what the government says it wants to do but isn't doing" [Minister's name] ...in our meetings ...has said ...you know I sure wish you guys could get ...or develop a parade that I could get out in front of.

Strategic Reframing

"there’s been different ways that we can frame that argument in terms of evidence"  
- Something Big is Happening in BC  
- Economic benefit  
- Societal obligations  
- Social justice / Equity

EDI and MDI Knowledge: Differences

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>EDI</th>
<th>MDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem or solution?</td>
<td>Describes a problem</td>
<td>Problem plus solution: SEL, increase assets</td>
</tr>
<tr>
<td>Actionable?</td>
<td>Different synthesis for different users</td>
<td>Provides consistent direction for schools and partners Discover MDI</td>
</tr>
<tr>
<td>Alignment with contexts of intended use</td>
<td>Multiple intended users Some users challenge status quo</td>
<td>Largely compatible with values and practices (schools and partners)</td>
</tr>
</tbody>
</table>

Contextual Differences

<table>
<thead>
<tr>
<th>Context</th>
<th>EDI</th>
<th>MDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity to act</td>
<td>No universal access to young children and their families</td>
<td>Almost all children in school 5 days a week</td>
</tr>
<tr>
<td>Institutional setting: networks and leadership structures</td>
<td>Multiple providers Low, uncertain temporary funding Fragmentation, stress Tensions and change</td>
<td>Dominant Ministry, Static infrastructure, substantial protected budget, established networks and leadership</td>
</tr>
<tr>
<td>Shared contribution</td>
<td>Multiple cost sharing partners with diverse priorities</td>
<td>Schools as primary cost sharing partners – from knowledge to action</td>
</tr>
<tr>
<td>Divisions/polarization among users</td>
<td>Divisions based on ideology, values and priorities</td>
<td>Greater alignment, polarization less evident</td>
</tr>
</tbody>
</table>
How and in what situations are different approaches used with the EDI and MDI?

Menu: HELP KT Approaches

- Change the conversation over time (public, providers, policy makers)
- Inform users (problem or solution focus) (HELP -> user)
- Consult (HELP <-> user)
- Empower: diffusion within networks/systems (user <-> user)
- Involve: build collective engagement (established networks)
- Collaborate: increase service integration (inter-sectoral networks)
- Persuade, argue, and suggest: as an expert colleague (policy makers)
- Build "political cover" for change (public, third party support)
- Frame messages to find resonance (public, policy makers)

Thank you participants!
Appendix K Focus Group Design

45 open presentation + 60 min data collection for those consenting to participate in focus group discussion.

| Moderator: Professional Facilitator  (Samantha Pattridge)  
| PI Dr. Chris Lovato |
|---|---|
| 2.5 min welcome, overview, Confirm intention to collect data in the discussion after the break | Introduce Graham Chris. Thank you for coming. Describe how Graham is conducting research into knowledge translation and specifically learning from the experience of people involved in promoting policy use of evidence or knowledge to improve outcomes for children. Clarify that the term knowledge translation can have many meanings and I am using it here in its most encompassing form that includes all forms of using knowledge to influence policy to improve health. The literature about policy development and research utilization suggests that experience and situational awareness may be vital in choosing WHO to address, WHAT to include in communication, WHERE to channel information, WHEN knowledge is more likely to be incorporated, and HOW to plan for effect over the long as well as the shorter term. Chris is here to take notes to complement the audio recording of our discussion. The aim of this research is to: Increase understanding about whether and how knowledge translation planning can benefit from an understanding of what is going on in the policy development environment and the various factors that might influence which approach is more likely to be effective. In this focus group, the objective is to explore what you have come to believe are valuable ways of using knowledge to influence policy. To do this, I have prepared a few visuals that I believe represent a distinct ways that HELP has engaged in to promote the use of knowledge. I will invite you to share your thoughts about the extent to which these visuals and summaries represent your understandings of how information flows in different pathways to the policy use of knowledge. |
| Audio recording  
<p>| Signed permission |</p>
<table>
<thead>
<tr>
<th>Slide presentation to Update HELP about research</th>
<th>Graham will present a summary that aims to represent the various ways in which HELP knowledge work has an influence on policy and resource allocation. Use templates network diagrams and de-identified comments from interviews to present the summary</th>
<th>Presentatio n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus group data collection to begin</td>
<td>Participants were selected on the basis of their role in knowledge translation at HELP. Timing: following interview data collection and preliminary document analysis that demonstrates different uses of knowledge toward influencing policy.</td>
<td></td>
</tr>
<tr>
<td>Break</td>
<td>Provide opportunity for those who were interested in feedback but who do not wish to provide data to leave.</td>
<td></td>
</tr>
<tr>
<td>30 min</td>
<td>Before we begin the focus group discussion, I’d like to make sure that everyone is aware of the purpose of this session and have all provided written permission for data collection, particularly about the audio recording of the session and the intended use of the data that you provide. Are there any questions? Let’s get started. (****start audio recording now) Review prepared slides with aid of facilitator (as needed) to elaborate on examples that appear to represent different pathways or strategies. (Avoid getting stuck on different forms of dissemination) Ensure that all present are given an opportunity to speak. Review: Toolkits (for example the MDI toolkit) Approaches that apply research directly (for example, policy to support the scale up and spread of evidence-based social emotional programs) Approaches that develop new knowledge (examples collaborative generation of action alternatives based on EDI results) Approaches that change underpinning understandings (for example providing expert reports and engaging with policy-makers to increase understanding of biological embedding) Approaches that use knowledge in public debate (for example, providing evidence for use by</td>
<td>Recorded</td>
</tr>
<tr>
<td>Time</td>
<td>Activity</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>15 min</td>
<td>Using same format, inquire about other pathways by which HELP data and research evidence has policy influence to improve health outcomes for children and families.</td>
<td></td>
</tr>
<tr>
<td>After the exploration of different uses is satisfactory.</td>
<td>If there are different ways of using knowledge, what are the pros and cons of the different strategies or pathways? Why would you choose particular approaches? (Use the language that the group uses and refer to any examples provided)</td>
<td></td>
</tr>
<tr>
<td>15 minutes</td>
<td>...if there is time to pursue them, or offer as possibilities to react to: Strategies (suitable only for specific contexts) Strategies that won’t work in some conditions Strategies to modify contexts Stories of Success or learning – What examples come to mind and what made them work?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thank you --- Share timeline for next stage of the study and reporting. Ask about reviewing transcript.</td>
<td></td>
</tr>
</tbody>
</table>

Offer opportunity to add thoughts in thank you email sent after the session